

Livable Housing LH 01 | A guide to the NCC Livable housing design standard

Audience

The audience for this Practice Note includes:

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| ☒ Architects / Designers | ☒ Owner Builders |
| ☒ Builders | ☒ Plumbers |
| ☒ Building Surveyors / Inspectors | ☐ Real estate management agents |
| ☒ Engineers | ☒ Trades and Maintenance (inc. Electricians) |
| ☒ Homeowners | |

Purpose

This practice note provides guidance on the technical provisions relating to the implementation of the ABCB Livable housing design standard (LHDS) that applies to NCC class 1a residential dwellings and to the internal parts of a class 2 sole-occupancy unit (SOU). This practice note will also include content on how to apply the LHDS and the respective compulsory Parts from the LHDS which include the following:

- Dwelling access (Part 1 of the LHDS) – getting to the entrance from the allotment boundary.
- Dwelling entrance (Part 2) – ease of access through a step-free entrance.
- Internal doors and corridors (Part 3) – ease of movement within the dwelling.
- Sanitary compartment (Part 4) – ease of movement to use a toilet pan.
- Shower (Part 5) – ease of movement by way of a step-free shower.
- Reinforcement of bathroom and sanitary compartment walls (Part 6) – providing the ability to add supports such as grabrails if needed.

Abbreviations & Definitions

The abbreviations and definitions set out below are for guidance only. They are not intended to vary those set out in the Building Act 1993, the Building Regulations 2018, or the National Construction Code.

- **ABCB** – Australian Building Codes Board
- **Act** – Building Act 1993
- **BCA** – Building Code of Australia
- **BADS** - Better Apartment Design Standards
- **DTS** – Deemed to Satisfy
- **LHDS** - ABCB Livable Housing Design Standard
- **NCC** – National Construction Code 2022



- **Regulations** – Building Regulations 2018
- **SOU** - Sole-occupancy Unit

Applying the Livable Housing Design Standard (LHDS)

The intent of the LHDS is described in its objectives, which are found at NCC clause G7O1 (in Volume One) and H8O1 (in Volume Two). These objectives are to ensure that housing is designed to meet the needs of the community, including older people and those with mobility-related limitations. The LHDS applies to houses and the internal parts of Sole-occupancy Units (SOU), and the relevant Performance Requirements appear in NCC Volume One and Volume Two.

The Deemed-to-Satisfy (DTS) Provisions in Part G7 of NCC Volume One and Part H8 of NCC Volume Two provide a compliance pathway to satisfy the Performance Requirements.

The NCC references the LHDS, which provides technical provisions for DTS compliance that relate to Class 1a buildings (dwellings not above another classification, other than a private garage) and Class 2 apartments.

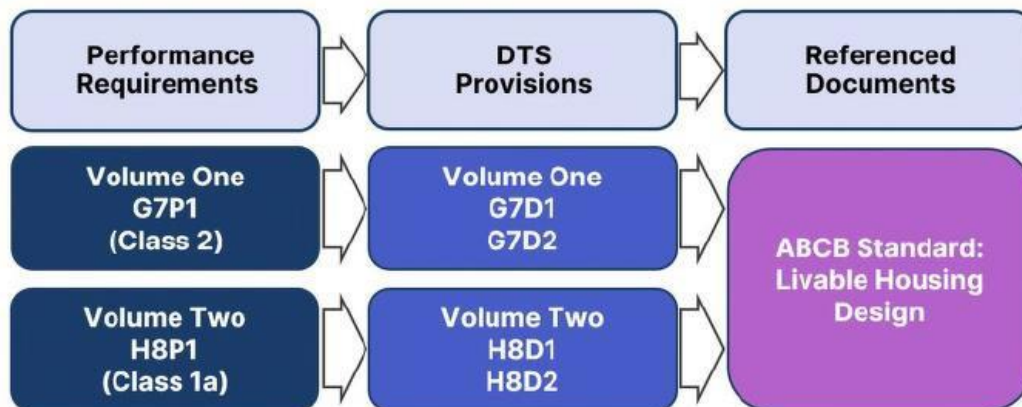


Figure 1 - Livable housing design standard ABCB

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As NCC Part D4 of Volume One already includes provisions related to access for apartments in Class 2 buildings, the LHDS does not apply to residential buildings other than Class 1a dwellings and the internal parts of Class 2 dwellings.



Class 3, Class 4, and Class 9 residential care buildings are also excluded. These buildings are either subject to existing accessibility requirements (for Class 3 and Class 9) or are generally occupied by people without mobility impairments (such as a caretaker in a Class 4 dwelling).

Therefore, the dwelling access provisions of the LHDS and the requirements of Australian Standard AS1428 Design for Access and Mobility, Part 1: General Requirements for Access - New Building Work, do not apply to a Class 1a dwelling or the internal parts of a Class 2 SOU apartment. However, all other parts of the LHDS still apply.



Continuous accessible paths of travel and circulation spaces for people who use wheelchairs, facilities for people with ambulatory disabilities, and access for people with sensory disabilities apply to all parts of the building outside the internal parts of a Class 2 SOU.



Building practitioners are also reminded that for designs where the Better Apartment Design Standards (BADS) are applicable under the Victorian Planning Scheme, this would also require the LHDS to be applied to all internal parts of the sole occupancy units within a Class 2 building.

It is essential that the RBS consider Section 11 of the Building Act – ‘effect of planning schemes.’ This requires the RBS to check that the planning permit and endorsed drawings are consistent with the building permit and that the building permit documentation demonstrates compliance with the LHDS where BADS has not already been applied to those parts of the building design.

Building designers are also reminded that they must consider both the LHDS and BADS in their designs before applying for a building permit from the RBS.

LHDS and NCC requirements – Apartments (NCC Volume One)

Each apartment (SOU) in a Class 2 building must comply with the LHDS, except for Part 1.

Figure 2 illustrates the following:

- Areas where NCC Volume One Part D4 requires accessibility for common areas.
- Areas where Part G7 mandates compliance with Parts 2 to 6 of the LHDS.

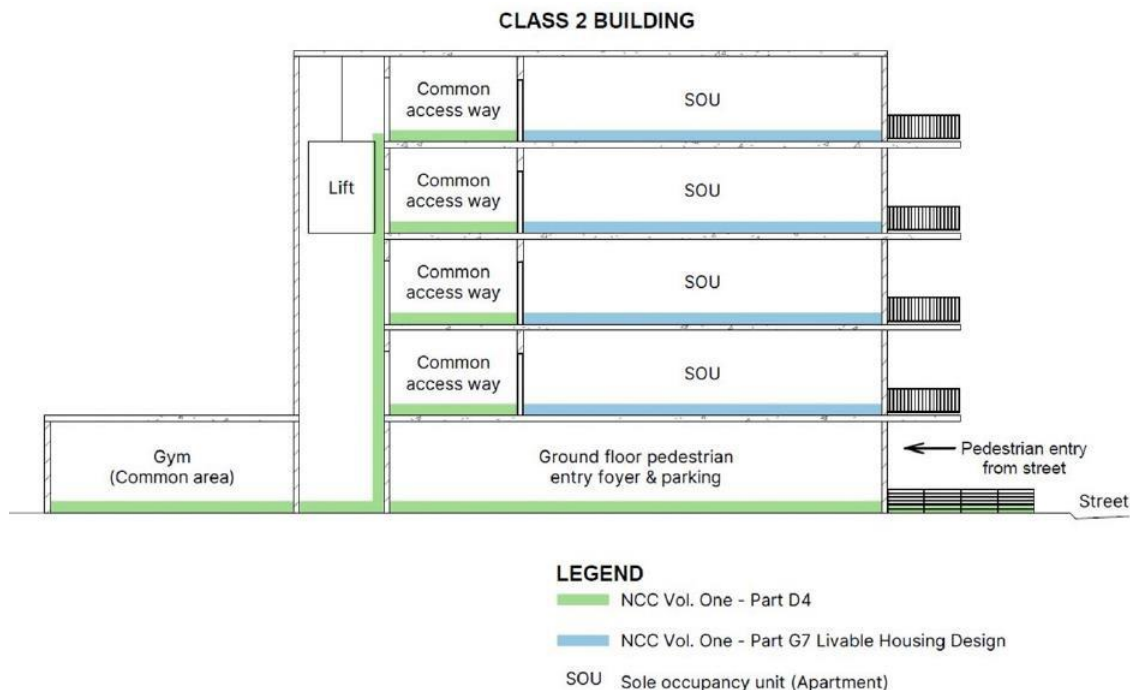


Figure 2 - Example: Application of Part D4 and Livable housing requirements to a Class 2 building with lift access to each floor.

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Each apartment (SOU) has an accessible floor accessed from a common area and Part D4 and Part G7 apply, as shown in Figure 2. Figure 2 shows a Class 2 building where both Part D4 access provisions and Part G7 Livable housing provisions apply.



1 May 2024 is the implementation date for the LHDS.



Dwelling Access

The intent of the dwelling access requirements for residential dwellings, also referred to as the 'step-free access path,' is to provide safe and easy access to the dwelling entrance from the allotment boundary or a designated car parking space. These features are designed to improve usability for occupants and visitors, including older people and individuals with mobility-related disabilities. This intent is reflected in Objective H8O1 and Functional Statement H8F1(a).

The NCC Objectives and Functional Statements provide guidance on the intent and application of the Performance Requirements.

The LHDS provisions for dwelling access are covered by the following requirements within NCC Volume Two:

- H8P1(a)
- H8D2(1) and H8D2(2)
- Part 1 of the LHDS

Clause H8D2(1), states that a Class 1a dwelling must comply with the LHDS along with Part 1 having two components:

- step-free access path
- car parking space incorporated into step-free access path

There are some instances where the step-free access path cannot be achieved. The provisions under Clause H8D2(2), provides the following exemptions to the requirement for a step-free access path which include:

- steep sites
- insufficient space
- difference in levels requiring excessive ramping



LHDS Part 1 – step free access path does not apply to Class 2 buildings and SOU apartments.

Australian Standard (AS) 1428 *Design for access and mobility, Part 1: General requirements for access - new building work* does not apply to the internal parts of a Class 2 SOU apartment.

Step-free access path to the dwelling

The step-free access path must be continuous and be provided from:

- the pedestrian entry at the allotment boundary, or
- an appurtenant Class 10a garage or carport, or
- a car parking space provided for the exclusive use by dwelling occupants.

For a continuous access path, the various compliance options are shown in Figures 3, 4, and 5.

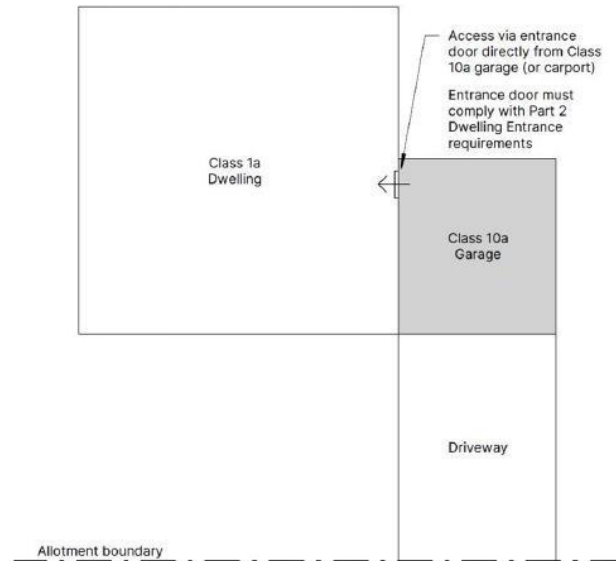


Figure 3 - Continuous path to a dwelling entrance from the allotment boundary (Part 1.1(1)(a) in the LHDS)

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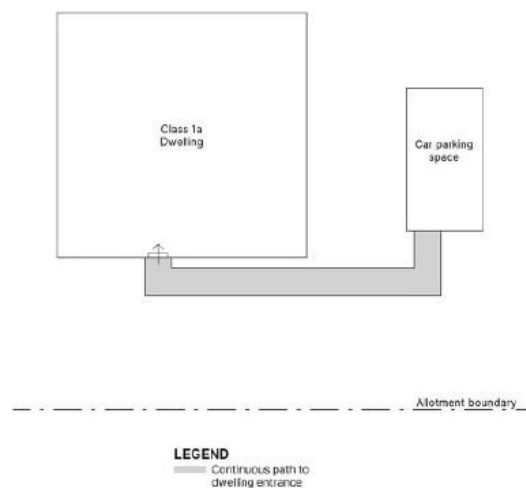


Figure 4 - Direct entrance to a dwelling from a garage/carport (Part 1.1(1)(b) in the LHDS)

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Figure 5 - Continuous path to a dwelling entrance from an exclusive use car parking space (Part 1.1(1)(c) in the LHDS)

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Parking space incorporated into step-free access path

Part 1.2 of the LHDS allows one or more car parking spaces to be part of a required access path if certain conditions are met.

Specifically, at least one of these parking spaces must:

- Have an unobstructed size of at least 3200 mm wide by 5400 mm long.
- Have a maximum gradient of 1:33 if the surface is bitumen, or 1:40 if the surface is any other material.

This Part applies only when the connected garage, carport, or parking space is part of the required access path.

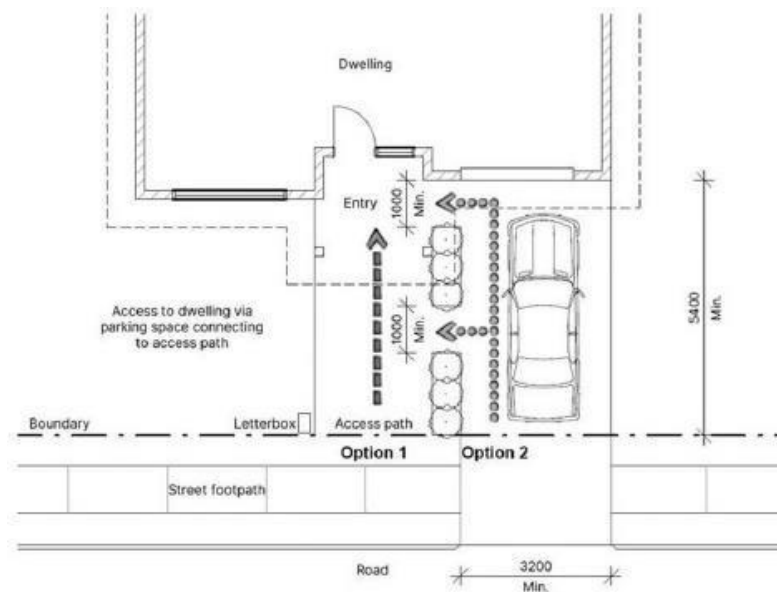


Figure 6 - Illustrates how incorporation of a car parking space is an option to providing access from an allotment boundary.

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Where the step-free access path is provided from an appurtenant garage or carport, access into the dwelling must be via a door complying with Part 2.

Exemptions to dwelling step free access

The exemptions that apply for dwelling access for Class 1a buildings are found in the:

- exemptions box for Performance Requirement H8P1
- Clauses H8D2(2)(a) and (b)

When step-free access from an appurtenant garage, carport or car parking space is not provided, and one or more of the following exemptions apply, then Part 1.1 of the LHDS for step-free access need not be complied with:

- the area for the access path is too steep.
- there is insufficient space available on the site on which to construct a step-free access path complying with Part 1.1 or
- The design would require excessive ramping that cannot achieve the requirements of H8D2(2)(b)(ii)

In the event an exemption is applied and granted the RBS must record their decision in accordance with the Code of Conduct.



The exemptions from providing step free access only apply to the access path (excluding landings) to a Class 1a building. This is because the step-free access requirement only applies to Class 1a buildings, and the exemption is only applicable for Part 1.1 of the LHDS all other parts of the LHDS still apply.

Dwelling entrance

The intent of the dwelling entrance requirements is to ensure dwellings are easy to enter and exit, especially for older people and those with mobility-related disabilities. The LHDS requires that at least one entry door into the dwelling meets these requirements. Specifically, the entrance door does not need to be the front door, provided that the designated door connects to the step-free path in accordance with Part 1.1(2), such as from the garage. Part 2 of the LHDS details the DTS compliance requirements for the designated dwelling entrance.

Design and configuration of nominated entrance doors

Regarding the application of the Livable housing design, the dwelling entrance is covered by the following requirements:

- H8P1(b) (Volume Two) and G7P1 (Volume One)
- H8D2 (Volume Two) and G7D2 (Volume One)
- Part 2 of the LHDS.

The LHDS requires a clear opening width of 820 mm for the designated entrance door. This means clear of the door leaf, frames and door stops Figure 7 provides an example:

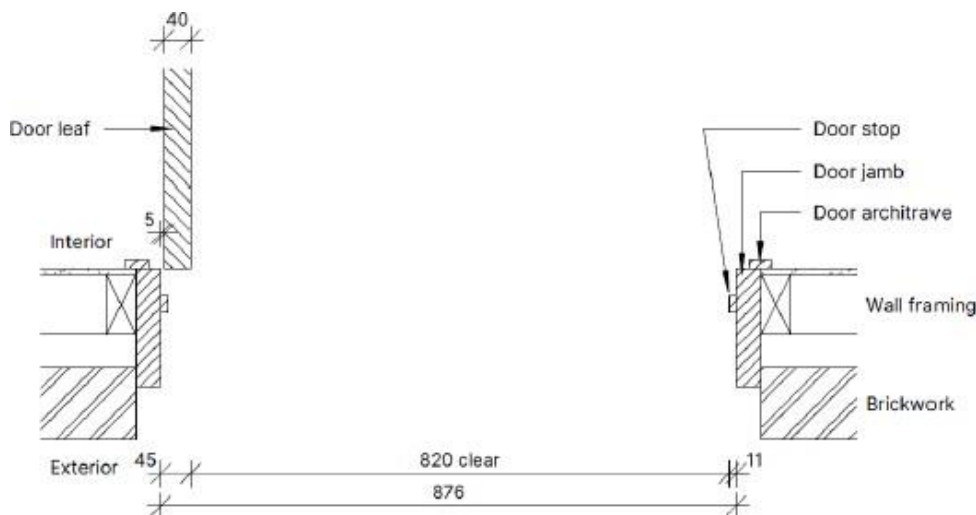


Figure 7 - Plan view of a typical door frame with a swing door (dimensions in mm)

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Threshold requirements

Part 2.2 of the LHDS provides four options for complying with the threshold requirements for an entrance door subject to Part 2.1 of the LHDS. Figures 8, 9, 10, and 11 illustrate how each of the four options could be applied in practice.

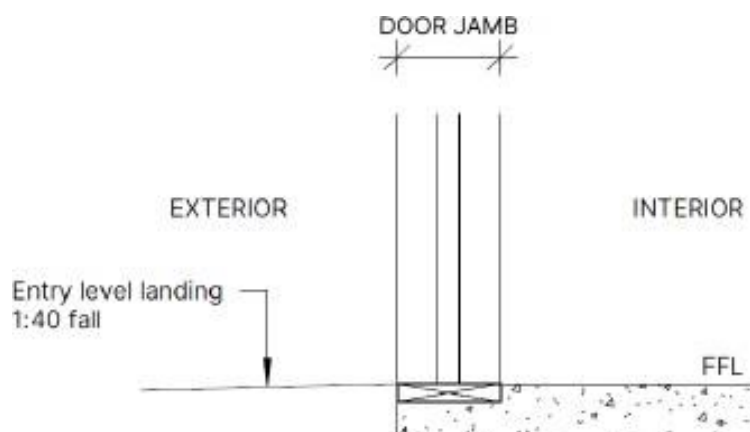


Figure 8 - Option 1: Level threshold (example of rebated door threshold)

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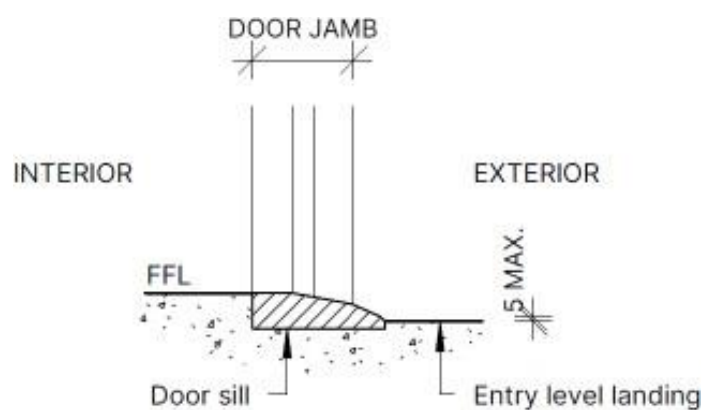


Figure 9 - Option 2: Threshold sill 5 mm above entry level and landing (dimensions in mm)

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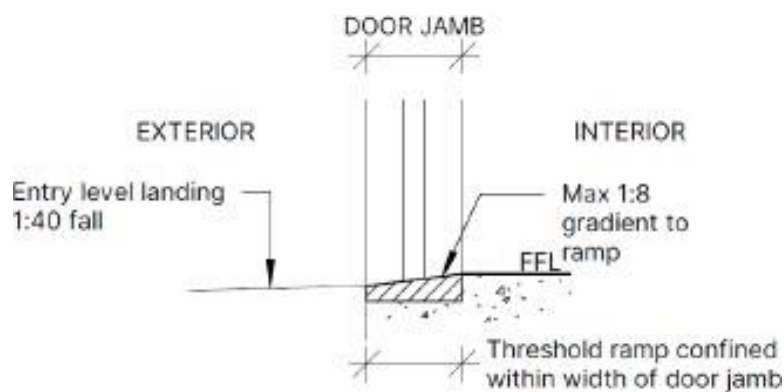


Figure 10 - Option 3: Threshold ramp (confined within depth of door jamb)

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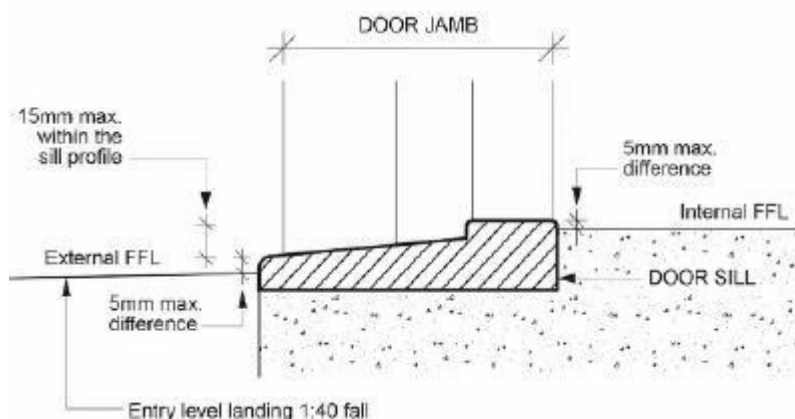


Figure 11 - Option 4: Threshold with no lip or upstand greater than 15 mm within the sill profile, with 5 mm maximum height difference with adjoining finished floor surface levels (FFL, dimensions in mm)

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Landing area requirements

Part 2.3 (Landing Area) specifies that an entrance door, as per Part 2.1 (Clear Opening Width), must have a landing area of at least 1200 mm x 1200 mm on its external side, with a crossfall gradient no steeper than 1:40. Access to this door must be unobstructed, except for a gate or screen door.

However, Part 2.3 does not apply to entrance doors serving an appurtenant Class 10a garage or carport, according to Part 1.1. This means that if step-free dwelling access is provided from the garage or carport, the 1200 mm x 1200 mm landing area is not required.

An access path to the accessible entrance must comply with Part 1.2 (Parking Space Incorporated into Step-Free Access Path), as the carport or garage will be part of the access path.

Weatherproofing for an external step-free entrance requirement

There are additional NCC provisions relevant to dwelling entrances, including weatherproofing requirements. For example, Part 2.4 of the LHDS outlines several requirements for weatherproofing external step-free entrances:

Channel Drain

A channel drain must be provided for the width of the entrance where the external surface is impermeable.

The drain must meet the requirements of H2D2 (Drainage) of Volume Two.

It should be designed and constructed to allow for inspection and cleaning, aiding in termite inspection (where applicable, see AS 3660.1) and keeping the drain clear (particularly important in bushfire-prone areas).

Permeable Surface Drainage

If the external entrance area is made of decking or another permeable surface, the drainage surface below must comply with H2D2 (Drainage) of Volume Two and AS 3959 (for designated bushfire-prone areas).

Roof Covering

A roof must cover the landing area, which should be at least 1200 mm x 1200 mm. The area must have a fall away from the building with a gradient no steeper than 1:40.

Any posts, columns, or supports for the roof must not obstruct the 1200 mm x 1200 mm landing area required in front of the entry door, as per Part 1.1(4).

Note on Drainage Compliance

NCC Clause H2D2 requires compliance with Clause 3.3.3 of the Housing Provisions, which contains a limitation statement excluding a landing area provided for the purposes of Part 2.3 of the LHDS.

In summary NCC Clause 3.3.3 - Surface Water Drainage does not apply to a landing area provided for the purposes of Part 2.3 of the LHDS, except for a channel drain or drainage surface provided under Part 2.4.

Internal doors and corridors

To facilitate unimpeded movement within dwellings and enhance usability, Part 3 of the LHDS specifies the minimum requirements for the design of internal doors and corridors.

Internal Doorways and Corridors

Part 3.1 requires that all applicable internal doorways have a minimum clear opening of 820 mm. This requirement applies to various types of doors, including swing doors, sliding doors, concertina doors, and cavity sliding doors.

Clear Opening Width and Thresholds

It's important to note that the clear opening width is not the same as the door width and the Thresholds of Internal Doorways must adhere to the following:

- Be level, or
- Have a height of no more than 5 mm if the lip is rounded or bevelled, or
- Be ramped within the depth of the door frame with a gradient not more than 1:8. The ramp must also be as wide as the door frame that it sits in. This is illustrated in Figure 12.



Figure 12 - Example of a ramped threshold within a door jamb

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A minimum clear width of 1000 mm is required for corridors, hallways, and the like if they are connected to a door that is subject to Part 3.1. The clear width is measured between finished wall surfaces (e.g. plasterboard or timber cladding). You do not take the measurement between the wall skirting boards or other wall mouldings such as picture rails. Features such as power outlets, wall

tiles, door stops and so on are also excluded from this measurement. Door hardware may encroach the minimum required corridor width.

Note: The requirement for corridor widths does not apply to a stairway that is part of a path of travel to a shower complying with Parts 5 and 6 on a level other than the entry level.



A corridor refers to any passageway or route within a building that provides access to different rooms or areas. For example, a walk-in-robe (WIR) could be considered a corridor if it provides access to an ensuite with a step-free shower. Similarly, a passage through a laundry that leads to a toilet on the entry level would also be considered part of a corridor.

Sanitary compartment

The sanitary compartment requirements in the LHDS aim to improve accessibility and usability for occupants and visitors, including older people and those with mobility-related disabilities. Part 4 of the LHDS specifies the minimum requirements for the design and construction of at least one sanitary compartment in a dwelling. A "sanitary compartment" is defined by the NCC as a room or space containing a closet pan or urinal.

Key Requirements for Sanitary Compartments

Part 4.1: At least one sanitary compartment must be located on the ground floor or entry level of a dwelling.

- This compartment must include a toilet.
- It must meet specific circulation requirements, including a clear zone of 900 mm x 1200 mm immediately in front of the toilet pan. Figure 13 illustrates this zone.

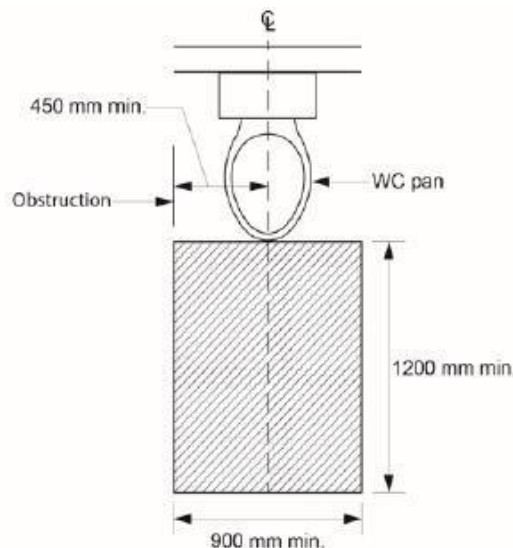


Figure 13 - Circulation zone for a toilet

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Circulation Space

- Skirting boards, architraves, toilet roll holders, door stops, etc., may encroach on the circulation space.
- However, the circulation space must be clear of the door swing.



Dimensions and Placement

- If the toilet is located between opposing side walls (typical in a stand-alone sanitary compartment), there must be a minimum of 900 mm between the finished wall surfaces.
- If the toilet pan is within a room with other fixtures, the side of a vanity or other obstruction (e.g., bath) must be at least 450 mm from the centreline of the toilet pan.

Shower

Part 5 of the LHDS ensures easy and independent access for all home occupants to at least one shower in a dwelling. Regardless of the total number of showers, only one needs to comply with Part 5. The compliant shower does not need to be on the ground or entry level.

Key Requirements for Showers

Part 5.2 requires:

- At least one shower must have a hob-less and step-free entry. This means the floor level at the entry to the shower recess must be level with the floor outside the recess.
- A 5 mm high lip (such as a water-stop angle) is permitted at the perimeter of the shower recess for water retention purposes.

Additional NCC Provisions

- Other relevant NCC provisions for showers include Performance Requirement H4P1 in Volume Two, which must be met for wet areas in Class 1a dwellings.
- Compliance with AS 3740 or Part 10.2 of the Housing Provisions satisfies Performance Requirement H4P1 for wet areas, as specified in DTS Clause H4D2.

Reinforcement of bathroom and sanitary compartment walls

Part 6 of the LHDS specifies the requirements for reinforcing walls in bathrooms and sanitary compartments to support the future installation of grabrails.

Wall Reinforcement Requirements

The Purpose of wall reinforcement is to ensure walls adjacent to a shower, toilet, and sometimes a bath can support the future installation of grabrails.

Materials for Reinforcement:

- Minimum 12 mm thick standard-grade plywood (or similar)
- Minimum 25 mm thick timber noggings

The LHDS provides figures showing the required locations for sheeting or noggings.

Exceptions

Concrete and Masonry Walls

Reinforcement is not required if the walls are constructed of concrete, masonry, or other material capable of supporting grabrails, including plaster applied to masonry or concrete.

For materials other than concrete or masonry, Part 6 only applies to the sanitary compartment or bathroom subject to the requirements of Part 4 and Part 5.



Related Documentation

- Building Act 1993
- Building Regulations 2018
- Better Apartment Design Standards
- National Construction Code 2022
- ABCB Livable Housing Design Standard

List of Amendments

- N/A

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