



TREVOR R HOWSE

# DESIGN SPECIFICATION

## NCC 2019



**PREPARED FOR**

*Pyco at Greenslopes Pty Ltd*

**REGARDING**

*27 Waine Street, Freshwater*

BUILDING REGULATIONS • FIRE SAFETY ENGINEERING • LEGAL SERVICES

e [admin@trevorhowse.com.au](mailto:admin@trevorhowse.com.au) w [www.trevorhowse.com.au](http://www.trevorhowse.com.au) a 27/16 Orchards Avenue, Breakfast Point, NSW, 2137

TREVOR R HOWSE PTY LIMITED ABN 76 160 779 000

## Report Register

---

The following report register documents the development and issue of this report and project as undertaken by this office, in accordance with the *Quality Assurance* policy of Trevor R Howse Pty Limited.

Our Ref.	Issue No.	Remarks	Issue Date
J22138	1	NCC 2019 Volume 1 Specification completed	31.8.2022

The format, technical content and intellectual property associated with this report remain the property of Trevor R. Howse Pty Limited, and has been prepared, and may only be used, for the development / buildings the subject of this report.

## Contents Page

---

<b>Summary &amp; Recommendations .....</b>	<b>4</b>
1.1 General .....	4
1.2 Project Summary .....	4
1.3 Recommendations .....	5
Introduction.....	6
2.1 General .....	6
2.2 Specification Purpose.....	6
2.3 Specification Basis .....	7
2.4 Exclusions .....	7
2.5 Limitations .....	8
Building Description .....	9
3.1 General .....	9
3.2 Rise in Storeys.....	9
3.3 Building Classification.....	10
3.4 Effective Height.....	10
3.5 Type of Construction.....	10
3.6 General Floor Area Limitations .....	10
3.7 Fire Safety Schedule .....	10
NCC 2019 Vol. 1 – Specification.....	12
4.1 General .....	12
4.2 Section B – Structure.....	12
4.3 Section C – Fire Resistance .....	13
4.4 Section D – Access & Egress.....	18
4.5 Section E – Services & Equipment.....	25
4.6 Section F – Health & Amenity .....	27
4.7 Section G – Ancillary Provisions .....	31
4.8 Section H – Special-Use Buildings .....	32
4.9 Section J – Energy Efficiency.....	33

## Summary & Recommendations

---

### 1.1 General

This “Design Specification – NCC 2019 Volume 1” has been prepared at the request of Pyco at Greenslopes Pty Ltd.

It relates to the proposed **Works Package** associated with the erection of a new residential apartment building, at the premises located at 27 Waine Street, Freshwater.

More specifically, the proposed works involve the demolition of existing structures on the site, and the erection of a new five (5) storey building containing a combination of car parking and six (6) residential apartments.

**Figure 1.1.1 – Existing aerial photo**



### 1.2 Project Summary

The purpose of this Design Specification is to –

- Identify those *primary* requirements of the National Construction Code 2019, Volume 1, Amendment 1 (“**NCC 2019**”) applicable to the proposed building work; and

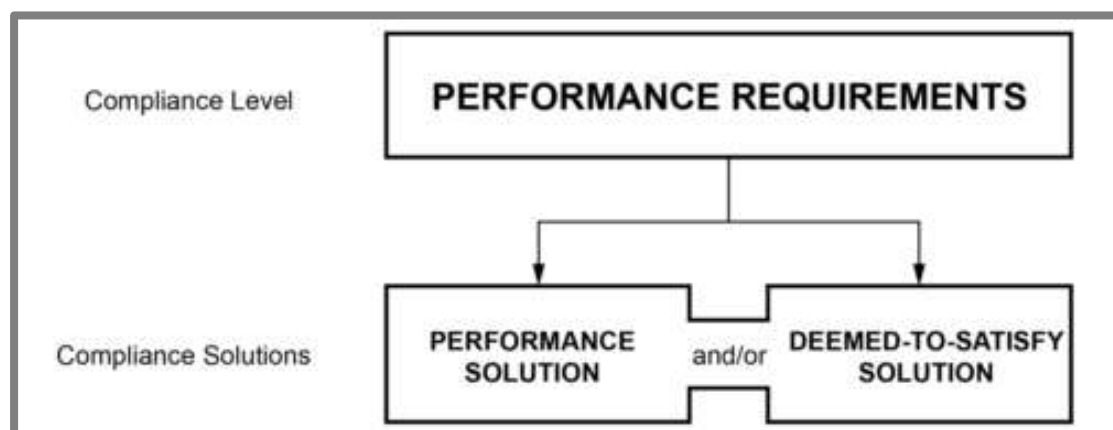
- Form part of the overall package of approved Building Permit documentation against which the works shall be undertaken, and inspected and certified at completion.

In reviewing the content of this report, it is highlighted that Compliance Structure of the National Construction Code is as depicted in figure 1.1.2 below.

As this excerpt from the NCC 2019 illustrates, a proposed design **must** comply with the applicable performance requirements.

It is a common misconception that a proposed design must comply with the deemed-to-satisfy provisions in the Code. The deemed-to-satisfy provisions are simply but one method of complying with the applicable performance requirements.

**Figure 1.1.2 – NCC Compliance Structure**



### 1.3 Recommendations

The assessment contained within Section 4 of this report below identifies that the proposed design is wholly compatible with the applicable provisions of NCC 2019.

For those instances where detail is not provided in the plans provided, this report acts as a Specification.

It is recommended that the proposed works be undertaken in accordance with the nominated documentation (item 2.3 of this report) and the NCC 2019 prescribed requirements in Section 4 of this report. In several instances, performance solutions may be required.

Additionally, this report provides, within item 3.7 below, a schedule of 'fire safety measures' and associated 'standards of performance' that need be included in the proposed design. This schedule should be reviewed by the relevant members of the design team to ensure that their documentation includes these measures.

# Introduction

## 2.1 General

This “Design Specification – NCC 2019 Volume 1” has been prepared at the request of Pyco at Greenslopes Pty Ltd.

It relates to the proposed **Works Package** associated with the erection of a new residential apartment building, at the premises located at 27 Waine Street, Freshwater.

**Figure 2.1.1 – proposed basement and ground floor plan**



## 2.2 Specification Purpose

Clause 19 (1) (c) of the Environmental Planning & Assessment (Development Certification & Fire Safety) Regulation 2021 prescribes as follows –

**“19 Compliance with development consent and Building Code of Australia**

- (1) *A certifying authority must not issue a construction certificate for building work unless:*

- (c) *the building (will comply with the relevant requirements of the Building Code of Australia as in force at the time the application for the construction certificate was made."*

The purpose of this Design Specification is to –

- Identify those *primary* requirements of the NCC 2019 applicable to the proposed building work; and
- Form part of the overall package of approved Building Permit documentation against which the works shall be undertaken, and inspected and certified at completion.

## 2.3 Specification Basis

The content of this Specification ONLY reflects and relies upon –

- NCC 2019 including the New South Wales variations;
- The design detail depicted in the following architectural plans prepared by Fuse Architects –

Numbered	Titled	Dated
DA 101 P2	Basement and ground floor plan	12.8.2022
DA 102 P2	Level 01 and 02 floor plan	12.8.2022
DA 103 P2	Level 03 and roof plan	12.8.2022
DA 201 P2	North and south elevations	10.1.2022
DA 202 P2	West elevation	10.1.2022
DA 203 P2	East elevation	10.1.2022
DA 301 P1	Section AA and BB	20.1.2022

## 2.4 Exclusions

This Specification should also not be construed to infer that an assessment for compliance with the following has been undertaken –

- Structural design documentation;
- Mechanical, Hydraulic and Electrical services design documentation;
- The operational capacity / compliance of building services;
- The requirements of service providers (i.e. Telstra, Sydney Water, AGL);
- The requirements of the Work Cover Authority;

- The accessibility provisions of NCC 2019 Vol. 1 (as are understood to be the subject of separate Accessibility reporting);
- The Disability Discrimination Act (DDA); and
- The Disability (Access to premises – building) Standard 2010.

Additionally, unless expressly stated in this report, this assessment does not consider the impact of the proposed works on the compliance status of the existing building on the same allotment.

## **2.5 Limitations**

It is conveyed that this Specification does not relieve any other party, including but not limited to architect, structural engineer, services consultant, authorities, and builder, from their responsibility to ensure the design and construction of the proposed works complies with the relevant Codes and Standards.

Additionally, while this Specification has been prepared to identify the *primary* prescriptive provisions of the NCC 2019 applicable to the proposed design, it has NOT been compiled to document every individual detail (requirement) of those prescriptive provisions.

For more detailed information in respect of the design requirements of any prescriptive provisions listed (or not listed) in this Specification, project stakeholders must consult with our office or the relevant reference in the NCC 2019.

## Building Description

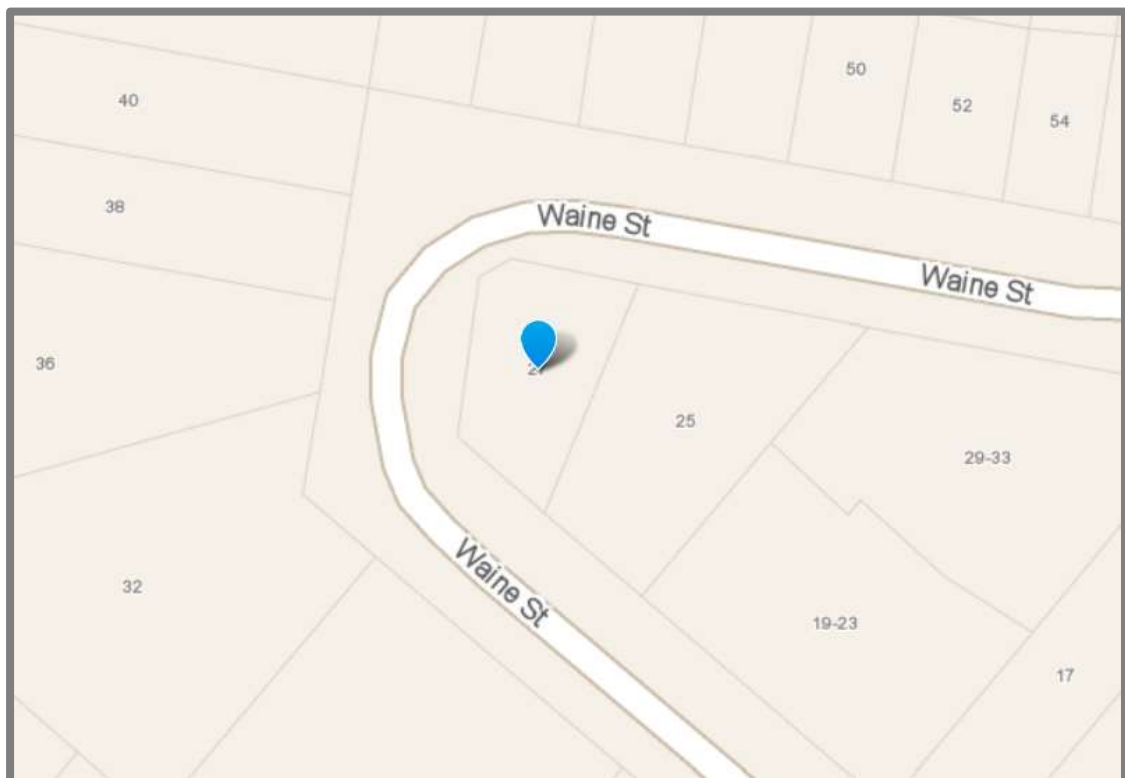
---

### 3.1 General

The overall site is located at 27 Waine Street, Freshwater, and is bounded by –

- Waine Street (to the north, south and west)
- Adjoining property (to the east)

**Figure 3.1.1 – Locality plan**



For the purposes of the NCC 2019, the building is described within items 3.2 – 3.6 below.

### 3.2 Rise in Storeys

The proposed works have a rise in storeys of five (5).

### 3.3 Building Classification

The proposed works shall contain multiple classifications, namely –

- Class 2 – residential apartments
- Class 7a – car park (more than 3 vehicles)

### 3.4 Effective Height

The proposed works shall have an effective height of 15.32-metres (RL 29.950 – RL 14.630 = 15.32-metres).

### 3.5 Type of Construction

The proposed works are also subject to the Type A Construction requirements of NCC 2019.

### 3.6 General Floor Area Limitations

The proposed new fire compartments are restricted to the following floor area and volume limitations –

- |            |   |            |   |                       |
|------------|---|------------|---|-----------------------|
| • Class 2  | – | Floor area | – | Not applicable        |
|            | – | Volume     | – | Not applicable        |
| • Class 7a | – | Floor area | – | 5,000 m <sup>2</sup>  |
|            | – | Volume     | – | 30,000 m <sup>3</sup> |

### 3.7 Fire Safety Schedule

Table 3.7.1 below provides a copy of the Fire Safety Schedule associated with the *proposed* building works.

This schedule should be viewed, based on the current status of the design documentation, as indicative only. Development of the design at the Construction Certificate stage of the approvals process, including the provision of services documentation, may identify the need for additional fire safety measures.

**Table 3.7.1 – Proposed fire safety schedule**

Fire Safety System	Status (*)	Performance Standard
Automatic fire detection & alarm	P	NCC 2019 Vol. 1, Clause E2.2 NCC 2019 Vol. 1, Spec E2.2a AS 3786-2014

Fire Safety System	Status <sup>(*)</sup>	Performance Standard
Automatic fire suppression system	P	NCC 2019 Vol. 1, Clause E1.5 NCC 2019 Vol. 1, Spec E1.5a AS 2118.1-2017
Emergency lighting	P	NCC 2019 Vol. 1, Clause E4.2, E4.4 AS 2293.1-2018
Exit signs	P	NCC 2019 Vol. 1, Clause E4.5, E4.6, E4.7, E4.8 AS 2293.1-2018
Fire doors	P	NCC 2019 Vol. 1, Clause C2.13, C3.11 AS 1905.1-2015
Fire hydrant systems	P	NCC 2019 Vol. 1, Clause E1.3 AS 2419.1-2005
Fire seals	P	NCC 2019 Vol. 1, Clause C3.12, C3.13, C3.15, C3.16 AS 1530.4-2014
Portable fire extinguishers	P	NCC 2019 Vol. 1, Clause E1.6 AS 2444-2001
Warning & operational signage	P	NCC 2019 Vol. 1, Clause E3.3

<sup>(\*)</sup> Fire safety measure is "EXISTING" (E), "PROPOSED" (P), or "TO BE MODIFIED" (M)

## NCC 2019 Vol. 1 – Specification

---

### 4.1 General

The following prescriptive provisions of NCC 2019 are applicable to the proposed building works.

In each instance, the *primary* requirements of these prescriptive provisions are highlighted in the comments provided below.

As these comments are not necessarily exhaustive, for more detailed design information, the corresponding clause reference in NCC 2019 should be consulted by the project team / stakeholders.

### 4.2 Section B – Structure

- **Clause B1.2 – Determination of individual actions**

The proposed works are to be designed and constructed in accordance with –

- (a) AS/NZS 1170.1-2002
- (b) AS/NZS 1170.2-2011
- (c) AS 1170.4-2007

- **Clause B1.4 – Determination of structural resistance of materials and forms of construction**

The proposed works are to be designed and constructed in accordance with –

- (a) Masonry – AS 3700-2018
- (b) Concrete – AS 3600-2018
- (c) Steel – AS 4100-1998
- (d) Glazing – AS 1288-2006 & AS 2047-2014
- (e) Metal roof – AS 1562.1-2018

- **Clause B1.5 – Structural software**

Any software used in the design of structural elements of the building is to comply with the ABCB Protocol of Structural Software.

### 4.3 Section C – Fire Resistance

- Clause C1.1 – Type of Construction required  
Specification C1.1 – fire resisting construction

The proposed works are to be designed and constructed in accordance with the requirements of Specification C1.1 and for Type A Construction.

This includes (inter alia) the following features –

- (a) Support of another part provisions of clause 2.2 of Specification C1.1.
- (b) The provision of fire rated lintels as per clause 2.3 of Specification C1.1.
- (c) Enclosure of shaft provisions of clause 2.7 of Specification C1.1.
- (d) External walls  
90-minute fire rating to residential levels  
120-minute fire rating to the basement floor
- (e) External load bearing columns  
90-minute fire rating to residential levels  
120-minute fire rating to the basement floor
- (f) Internal walls – fire resisting lift and stair shafts  
Class 2 areas – 90/90/90 load bearing; – /90/90 non-load bearing  
Basement floor – 120/120/120 load bearing; – /120/120 non-load bearing
- (g) Internal walls – bounding public corridors, public lobbies and the like  
90/90/90 load bearing; – /90/90 non-load bearing
- (h) Internal walls – between or bounding sole-occupancy units  
90/90/90 load bearing; – /90/90 non-load bearing
- (i) Internal walls – ventilating, pipe, garbage and the like shafts not used for the discharge of hot products of combustion  
Class 2 areas – 90/90/90 load bearing; – /90/90 non-load bearing  
Basement floor – 120/90/90 load bearing; – /90/90 non-load bearing
- (j) Other loading bearing internal walls, internal beams, trusses  

Class 2 areas	90/ – /–
Basement floor	120/ – / –
- (k) Floors  

Between basement and ground floor	120/120/120
Between other floors	90/90/90
- (l) Roof  
Non-combustible construction

- **Clause C1.9 – Non-combustible building elements**

The following building elements and their components must be of non-combustible construction –

- (a) External walls and common walls, including all components incorporated therein including the façade covering, framing and insulation.
- (b) The flooring and floor framing of lift pits.
- (c) Enclosing shaft walls to ventilating, pipe, garbage and the like shafts

- **Clause C1.10 – Fire hazard properties**

**Specification C1.10 – Fire hazard properties**

- (a) Any new floor linings and floor coverings must have a CRF value not less than 2.2, and a smoke development rate not more than 750 percent-minutes;
- (b) Any new wall or ceiling linings must be Group 1 or 2;
- (c) Air handling duct work must be installed to AS 4254 Parts 1 and 2;
- (d) Lift car –
  - 1. Floor lining – shall have a critical radiant heat flux not less than 2.2
  - 2. Wall / ceiling – shall be group 1 or 2
- (e) Other materials of construction must have a spread of flame index not more than 9, and a smoke developed index not more than 8 if the spread of flame index exceeds 5.

- **Clause C1.14 – Ancillary elements**

Only the following ancillary elements may be affixed to an external wall required to be non-combustible –

- (a) A non-combustible element
- (b) Gutter, downpipe or other plumbing fixture or fitting
- (c) Flashing
- (d) Grate or grille not more than 2 m<sup>2</sup> in area, and associated with a building service
- (e) Electrical switch, socket outlet, cover plate or the like
- (f) Light fitting
- (g) A required sign (**NB:** required means required to satisfy the DTS or performance provisions of NCC 2019)
- (h) A sign other than one provided under (a) or (g) that –

- (i) Achieves a group number of 1 or 2; and
  - (ii) Does not extend beyond 1 storey; and
  - (iii) Does not extend beyond 1 fire compartment; and
  - (iv) Is separated vertically from other signs permitted by (h) by at least 2 storeys.
- (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that –
- (i) Meets the relevant requirements of NCC 2019 Specification C1.10, table 4, as an internal element; and
  - (ii) Serves a storey –
    - A. At ground level; or
    - B. Immediately above a storey at ground level; and
  - (iii) Does not serve an exit, where it could render the exits unusable in a fire.
- (j) A part of a security, intercom or announcement system
- (k) Wiring
- (l) Paint, lacquer or a similar finish
- (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k) above

- **Clause C2.9 – Separation of classifications in different storeys**

Further to Clause C1.1 above, the intervening floor between the basement and ground floors required a 120/120/120 fire rating.

- **Clause C2.10 – Separation of lift shafts**

Further to Clause C1.1 above, the proposed lift must be enclosed in fire rated construction.

- (a) Class 2 areas – 90/90/90 load bearing; – /90/90 non-load bearing
- (b) Basement floor – 120/120/120 load bearing; – /120/2120 non-load bearing

- **Clause C2.12 – separation of equipment**

The following equipment need be separated from the remainder of the building in 120/120/120 fire rated construction, with doorway openings fitted with - /120/30 fire rated door sets –

- (a) Boilers
- (b) A battery or batteries installed in the building that have a voltage exceeding 12 volts and a capacity of 200 kWh or more
- (c) Fire services pump room
- (d) Lift motor rooms and lift control panels

- **Clause C2.13 – electricity supply system**

The following equipment need be separated from the remainder of the building in 120/120/120 fire rated construction, with doorway openings fitted with - /120/30 fire rated door sets –

- (a) The main switchboard where sustaining emergency equipment operating in the emergency mode;
- (b) Any associated electrical conductors that supply a main switchboard where sustaining emergency equipment operating in the emergency mode;

Additionally, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear.

- **Clause C3.11 – Bounding construction: Class 2 and 3 buildings and Class 4 parts**

Doorway openings to sole-occupancy units and any other room opening to a common area in the Class 2 areas of the building (i.e. SOU's, stores, etc.) must be fitted with self-closing, 1-hour fire rated door sets.

- Clause C3.12 – openings in floors and ceilings
- Clause C3.15 – openings for service installations
- Clause C3.16 – construction joints

Construction joints between fire rated elements, and penetrations in fire rated elements, are to be installed in accordance with these particular provisions of the BCA and fire sealed (as applicable) with –

- (a) AS 1530.4-2005 and AS 4072.1-2005 compliant fire stopping materials; and
- (b) AS 1668.1-2015 compliant fire rated dampers.

It is proposed that the following particular products, or equivalents thereto, be employed –

(a) Electrical penetrations

1. Promat Fire Mastic – Promaseal (fire rated to 240-minutes)
2. Promat – Pillows (fire rated to 240-minutes)

(b) UPVC penetrations

Promat – Promaseal CFC Conduit Collars (fire rated up to 240-minutes)

(c) Metal pipe penetrations

Promat Fire Mastic – Promaseal (fire rated to 240-minutes)

(d) Mechanical penetrations

1. Trafalgar – Wombat Intumescent Fire Damper (ceiling)
2. Trafalgar – Wombat Intumescent Fire Damper (fire door)
3. Trafalgar – Wombat Intumescent Fire Damper (floor)
4. Trafalgar – Wombat Intumescent Fire Damper (wall)

All fire dampers are fire rated to 240-minutes.

(e) Construction joints

Promat Fire Mastic – Promaseal (fire rated to 240-minutes)

Installation certification of the particular products used shall be provided at the completion of the project.

#### 4.4 Section D – Access & Egress

- **Clause D1.3 – When fire-isolated stairways and ramps are required**

Noting the requirement to provide automatic sprinkler protection throughout the building (refer Clause E1.5 below), and subject to such not being an FPA101D system, the internal stairway need not be fire isolated.

- **Clause D1.4 – Exit travel distances**

The occupant travel distance within the basement car park, to the single exit door provided in the south elevation, must not exceed 20-metres.

**NB:** It is assumed that the evacuation pathway for the basement shall travel to and through the bin room and out the swing door to the Waine Street footpath.

Having regard to this, the following is noted –

- (a) The travel distance in the basement exceeds 20-metres to the single exit (approx. 27-metres).

However, it is considered that such is supportable via a performance solution assessment and report. This must be performed prior to the application for Construction Certificate approval.

- **Clause D1.6 – Dimensions of exits and paths of travel to exits**

The proposed works are to be designed and constructed in accordance with the following –

- (a) The unobstructed height of doorway openings must not be less than 1980-mm
- (b) Accessways must have a minimum unobstructed width of 1000-mm.
- (c) Doorway openings accessible to people with a disability must have an unobstructed width not less than 850-mm, and 750-mm where not required to be accessible to people with a disability.

- **Clause D1.10 – Discharge from exits**

- (a) Each exit from each building must be directly to connected to the roadway by a ramp not exceeding 1:8; a stairway; or a combination thereof.
- (b) Where exits are capable of being obstructed by vehicles or the like, bollard protection must be installed.

- **Clause D1.17 – Access to lift pits**

Access to the lift pit must be provided as per NCC 2019 Vol. 1 Clause D1.17.

Where the lift pit is less than 3-metres in depth, access need only be provided through the lowest landing doors.

- **Clause D2.3 – Non-fire-isolated stairways and ramps**

Stairways must be constructed or either –

- (a) Reinforced or pre-stressed concrete; or
- (b) Steel in no part less than 6 mm thick.

- **Clause D2.7 – Installations in exits and paths of travel**

EDB's and communication boards are to be enclosed in non-combustible construction and smoke sealed from the remainder of the building.

- **Clause D2.13 – Treads and risers**

The new stairways are to have the following characteristics –

- (a) Riser dimension of 115-190-mm;
- (b) Going dimension of 250-350-mm;
- (c) Consistent riser and going dimensions through each flight;
- (d) Tread surfaces or nosing strips that have a slip resistance classification (as per AS 4856) of P3 for dry and P4 for wet;
- (e) Nosings that have a 30% reflective difference (in colour) to the adjoining surfaces.

- **Clause D2.14 – Landings**

The new landings are to have the following characteristics –

- (a) Surfaces that have a slip resistance classification (as per AS 4856) of P3 for dry and P4 for wet;
- (b) A gradient not steeper than 1:50;
- (c) A depth not less than 750-mm.

- **Clause D2.15 – thresholds**

- (a) The threshold of doorways within the building shall not contain a step or change in level.
- (b) Where exiting from an area of the building accessible to people with a disability, the threshold of a doorway opening to a road or open space shall not contain a step or change in level unless it is provided with an AS 1428.1-2009 compliant threshold ramp or step ramp.
- (c) Where exiting from an area of the building NOT accessible to people with a disability, the threshold of a doorway opening to a road or open space shall not contain a step or change in level exceeding 190-mm.

- **Clause D2.16 – balustrades**

Balustrades throughout the building must be designed and constructed in accordance with the following –

- (a) Achieve a height not less than 865-mm above stair nosings, and 1000-mm otherwise (i.e. landings, horizontal surfaces);
- (b) Not contain openings greater than 125-mm;
- (c) Where the drop to the ground / surface / floor below exceeds 4-metres, the balustrade must not contain any horizontal or near horizontal elements in the zone of 150-760-mm above the floor that could facilitate climbing.

- **Clause D2.17 – Handrails**

Handrails to the proposed stairways must be designed and constructed in accordance with the following –

- (a) Be located on at least one (1) side of each flight / ramp length.
- (b) Be continuous through each stair flight / ramp length.
- (c) Notwithstanding item (a) above, comply with Clause 11 of AS 1428.1-2009 for stairways in areas of the building required to be accessible to people with a disability.
- (d) Handrails to stairways inside the proposed sole-occupancy units must –
  - (i) Be located on at least one (1) side of each flight;
  - (ii) Extend the full length of the flight;
  - (iii) Have the top surface not less than 865-mm above the stair nosings;
  - (iv) Have no obstructions that would break a hand hold, except newel posts or the like.

- **Clause D2.20 – Swinging doors**

Swing type exit doors must swing in the direction of egress, and not encroach more than 500-mm on the required width of an exit.

- **Clause D2.21 – Latching devices**

Except doorways to and within the SOU's, all doorways accessible to the occupants are to be designed and constructed so that persons can evacuate there-through without the use of a key, using lever handle devices –

- (a) located 900-1100-mm above the floor;
- (b) having a clearance between the door handle and the door leaf of between 35-45-mm;
- (c) that would not cause the grip of a user to slip therefrom.

If fitted with a fail-safe device which *automatically* unlocks the door, such must be connected to the activation of any sprinkler system complying with Specification E1.5 or smoke, or any other detector system deemed suitable in accordance with AS 1670.1 installed throughout the building

- **Clause D2.24 – Protection of openable windows**

- (a) Openable windows within any of the residential sole-occupancy units must be provided with protection where the floor below the window is more than 2-metres above the surface beneath.
- (b) Further to item (a) above, where the lowest level of the window opening is less than 1700-mm above the floor, the window opening must be fitted with either a device capable of restricting the window opening to not more than 125-mm, or a screen with secure fittings.
- (c) Further to item (b) above, the device / screen must be capable of withstanding an outward horizontal force not less than 250 N against the window or protecting screen, and have a child resistant release mechanism if the device is capable of being removed, unlocked or overridden.
- (d) A barrier not less than 865-mm above the floor level must be provided to any openable window where the floor below the window is more than 4-metres above the surface beneath.
- (e) A barrier not less than 865-mm above the floor level must be provided to any openable window fitted with a protection device that has a child-release resistant mechanism.
- (f) Further to items (d) and (e) above, any barrier must not contain openings greater than 125-mm, and not contain horizontal or near horizontal elements in the zone of 150-760-mm above the floor that facilitate climbing.

- **Clause D3.1 – General building access requirements**

Except as otherwise excepted by Clause D3.4 in NCC 2019 Vol. 1, AS 1428.1-2009 compliant access for people with a disability must be provided as follows –

- (a) From the pedestrian entrance to the building to the entry doorway of each sole-occupancy unit (**NB:** because the building shall be provided with a lift).
- (b) To and within each of common room or space (i.e. basement) used by the residents as served by the lift.

- **Clause D3.2 – Access to building**

AS 1428.1-2009 compliant need be provided to and within the main entry into the building from the street, and to and within the passenger lift.

- **Clause D3.3 – Parts of buildings to be accessible**

AS 1428.1-2009 compliant access for people with a disability is to be provided to and within all parts identified in Clause D3.1 above.

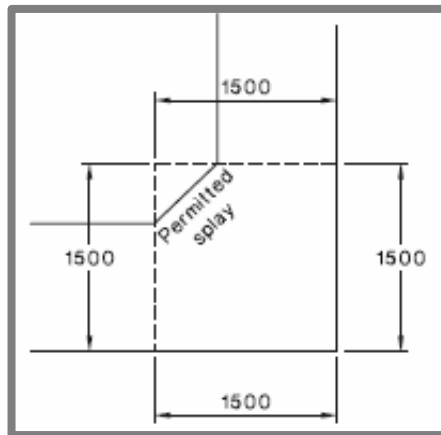
This necessitates the provision of the following characteristics –

- (a) An unobstructed opening width to accessible doorways of not less than 850-mm.
- (b) Floor surfaces, including changes in level, must be AS 1428.1-2009 compliant in terms of being non-slip.
- (c) Door hardware must be installed as per AS 1428.1-2009 (i.e. located between 900-1100-mm above the floor, have a gap between the back of the handle and the face of the door leaf of 35-45-mm).
- (d) AS 1428.1-2009 compliant turning spaces within 2-metres of dead-ends in accessways, where it is not possible to continue along the accessway.
- (e) All doorways must have a minimum luminance contrast of 30% provided between either the –
  - 1. door leaf and door jamb;
  - 2. door leaf and adjacent wall;
  - 3. architrave and wall;
  - 4. door leaf and architrave; or
  - 5. door jamb and adjacent wall.

The minimum width of the area of luminance contrast must not be less than 50-mm.

- (f) Stairways must comply with Clause 11 of AS 1428.1-2009.

- (g) 90° changes in direction must be provided with the clear circulation space depicted in the following AS 1428.1 excerpt –



- (h) Circulation space at doorway openings must have a gradient and crossfall not steeper than 1:40.

- **Clause D3.5 – Accessible car parking**

The basement car park design depicts the provision of an accessible car parking space.

The design and construction of an accessible car parking space must comply with AS 2890.6.

Having regard to this, the following is noted –

- (a) The position of the lift shaft shall encroach into the shared space adjacent to the accessible car parking space by approximately 1226-mm x 1000-mm.

However, it is considered that such is supportable via a performance solution assessment and report. This must be performed prior to the application for Construction Certificate approval.

- **Clause D3.6 – Signage**

The exit doors from the basement and ground floors must be provided with BCA Specification D3.6 compliant signage stating “EXIT” and “LEVEL” followed by the floor level number or floor level descriptor (see below example).



- **Clause D3.8 – Tactile indicators**

AS 1428.4.1-2009 compliant tactile indicators need be provided to –

- (a) The top and bottom of common area stairways, and intermediate landings where AS 1428.1-2009 compliant handrails are not continuous through the landings; and
- (b) Indicate the presence of an overhead obstruction less than 2000-mm above the floor (except a doorway opening) in common areas.

- **Clause D3.12 – Glazing on an accessway**

All frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1-2009.

Markings must be solid, non-transparent and contrasting, and must extend the full width of the glazing panel(s).

The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel.

The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level.

## 4.5 Section E – Services & Equipment

- **Clause E1.3 – Fire hydrants**

All parts of the proposed building must be provided with coverage from an AS 2419.1-2005 compliant fire hydrant service.

- **Clause E1.5 – Sprinklers**

All parts of the proposed building must be provided with coverage from an AS 2118.1-2017 compliant automatic sprinkler system.

- **Clause E1.6 – portable fire extinguishers**

- (a) AS 2444 compliant, class AE or E portable fire extinguishers are to be provided to emergency services switchboards.
- (b) AS 2444 compliant, class A portable fire extinguishers are to be provided to the basement.
- (c) AS 2444 compliant, ABE type portable extinguishers (of minimum 2.5kg) must be provided in each residential common corridor, such that the distance from a sole-occupancy unit doorway and an extinguishing unit is not more than 10-metres.

- **Clause E2.2a – General provisions**

- (a) Any air handling system that recycles air from one fire compartment to another must be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1.

**Note:** Each residential sole-occupancy unit is a fire compartment for the purpose of this provision.

- (b) The Class 2 parts of the building must be provided with an NCC 2019 Specification E2.2a compliant smoke detection and alarm system.

- **Clause E3.1 – Lift installations**  
**Specification E3.1 – Lift installations**

The new internal passenger lift must be designed and constructed in accordance with NCC 2019 Specification E3.1.

- **Clause E3.3 – Warning against use of lifts in fire**

The new internal passenger lift must be provided with signage at each call button stating “DO NOT USE LIFTS IF THERE IS A FIRE” in either 10-mm high capital letters or 8-mm high lowercase letters.

- **Clause E3.5 – Landings**

Access and egress to and from lift well landings must comply with the *Deemed-to-Satisfy Provisions* of Section D.

- **Clause E3.6 – Passenger lifts**

- (a) Any new internal passenger lifts must be electric passenger lift type, and not rely on a constant pressure device for its operation (i.e. push button, turnkey); and
- (b) Lift installations are to contain the following design features –
  1. AS 1735.12-1999 compliant handrails; and
  2. Internal lift floor dimension not less than 1400-mm wide x 1600-mm deep; and
  3. AS 1735.12-1999 compliant passenger protection system; and
  4. AS 1735.12-1999 compliant control buttons; and
  5. AS 1735.12-1999 compliant lighting; and
  6. Emergency hands-free communication.

- **Clause E4.2 – Emergency lighting**

**Clause E4.4 – Design and operation of emergency lighting**

All parts of the proposed building are to be provided with coverage from an AS 2293.1-2018 compliant emergency lighting system.

- **Clause E4.5 – Exit signs**

**Clause E4.6 – Direction signs**

**Clause E4.8 – Design and operation of exit signs**

The basement need be provided with coverage from an AS 2293.1-2018 compliant exit signage system.

- **Clause E4.7 – Class 2 and 3 buildings and Class 4 parts: exemptions**

The exit door from the ground floor must be provided with either –

- (a) A Clause E4.5 compliant illuminated exit sign (see above); or
- (b) A non-illuminated sign containing the word EXIT in capital letters not less than 25-mm high in a color that contrasts with the background.

#### 4.6 Section F – Health & Amenity

- **Performance Requirement FP1.4 – weatherproofing**

It is a requirement of Clause F1.0 that proposed building works (as applicable) demonstrate compliance with Performance Requirement FP1.4 for weatherproofing of external walls.

This performance requirement states as follows –

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause –*

- (a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and*
- (b) Undue dampness or deterioration of building elements.”*

Architectural plans or specification that SPECIFICALLY DETAILS how the above will be achieved must be provided.

- **Clause F1.1 – Stormwater drainage**

The proposed building is to be provided with AS/NZS 3500.3 compliant stormwater drainage

- **Clause F1.4 – External above ground membranes**

Any water proofing membranes for above ground use in the proposed building must comply with AS 4654.1 and 2.

- **Clause F1.6 – Sarking**

Sarking-type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.

- **Clause F1.7 – Water proofing of wet areas**

The proposed wet areas must be water proofed in accordance with AS 3740-2010.

- **Clause F1.10 – Damp proofing of floors on ground**

AS 2870 compliant damp proofing must be provided to the slab on ground.

- **Clause F1.11 – Provision of floor wastes**

The bathrooms in each of the above ground sole-occupancy units must be provided with floor wastes, with the floors of those rooms graded to the floor waste.

- **Clause F1.13 – Glazed assemblies**

Refer Clause B1.4 above

- **Clause F2.1 – Facilities in residential buildings**

Each of the residential units must be provided with –

- (a) A kitchen sink and facilities for the preparation and cooking of food; and
- (b) A bath or shower; and
- (c) A closet pan and wash basin; and
- (d) Laundry facilities with a tub and washing and drying capabilities.

- **Clause F3.1 – Height of rooms and other spaces**

The proposed design intends the attainment of prescriptively compliant ceiling heights.

- **Clause F4.1 – Provision of natural light**

**Clause F4.2 – Method and extent of natural lighting**

**Clause F4.3 – Natural light borrowed from an adjoining room**

- (a) Natural light must be provided to all bedrooms in the Class 2 sole-occupancy units.
- (b) Natural lighting must be provided via windows or other light transmitting devices that have a light transmitting area not less than 10% of the floor area of the room served
- (c) Window openings relied upon for the provision of natural lighting, where facing an allotment boundary or wall of the same building or another building on the allotment, must have a horizontal clear distance from the boundary / building not less than 50% of the square root of the exterior height of the wall in which the window is contained, measured in metres from the sill.

- **Clause F4.4 – Artificial lighting**

Artificial lighting throughout the proposed building is to be designed and constructed in accordance with AS/NZS 1680.0-2009.

- **Clause F4.5 – Ventilation of rooms**  
**Clause F4.6 – Natural ventilation**  
**Clause F4.7 – Ventilation borrowed from an adjoining room**

Each of the rooms within the building must be provided with either BCA Clause F4.6 compliant natural ventilation or AS 1668.2 compliant mechanical ventilation.

- **Clause F5.2 – Determination of airborne sound insulation ratings**  
**Specification F5.2**

Forms of construction required to achieve an airborne sound insulation rating must comply with Specification F5.2.

- **Clause F5.3 – Determination of impact sound insulation requirements**

- (a) Floors required to achieve an impact sound insulation rating must comply with Specification F5.2.
- (b) Walls required to achieve an impact sound insulation rating must be of discontinuous construction.

- **Clause F5.4 – sound insulation rating of floors**

The floors to the residential levels must have an airborne sound insulation rating not less than 50 and an impact sound insulation rating not less than 62.

- **Clause F5.5 – sound insulation rating of walls**

The enclosing walls to the residential SOU's must –

- (a) Achieve an airborne sound insulation rating not less than 50; and
- (b) Be of discontinuous construction if they separate a bathroom, sanitary compartment, laundry or kitchen in one SOU from a habitable room (except kitchen) in an adjoining SOU;
- (c) Have doorway openings achieve an airborne sound insulation rating not less than 30.

- **Clause F5.6 – sound insulation rating of services**

A duct, soil, waste or water supply pipe that passes through more than 1 SOU must be separated from the SOU by construction having an airborne sound insulation rating not less than –

- (a) 40 if the adjacent room is a habitable room;
- (b) 25 if the adjacent room is a non-habitable room or kitchen

- **Clause F5.7 – sound isolation of pipes**

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

- **Clause F6.2 – pliable building membrane**

- (a) Where a pliable building membrane is installed in an external wall, it must –
  - (i) Comply with AS/NZS 4200.1; and
  - (ii) Be installed in accordance with AS 4200.2; and
  - (iii) Be located on the external side of the primary insulation layer of wall assemblies that form the external envelope of a building.
- (b) The primary water control layer must be separated from water sensitive materials by a drained cavity.

- **Clause F6.3 – flow rate and discharge of exhaust systems**

- (a) An exhaust system in a kitchen, bathroom, sanitary compartment or laundry must have a minimum airflow rate of –
  - (i) 25 L/sec for a bathroom or sanitary compartment
  - (ii) 40 L/sec for a kitchen or laundry
- (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air.
- (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged –
  - (i) Directly or via a shaft or duct to outdoor air; or
  - (ii) To a roof space that is ventilated in accordance with NCC 2019 Clause F6.4.

- **Clause F6.4 – ventilation of roof spaces**

Any roof space must be ventilated as per this provision.

#### **4.7 Section G – Ancillary Provisions**

- **NSW Clause G1.101 – Provision for cleaning windows**

Windows must be capable of being cleaned from within the building, or by a method permitted by the Work Health & Safety Regulation.

#### **4.8 Section H – Special-Use Buildings**

No provisions applicable to the proposed Works Package.

## **4.9 Section J – Energy Efficiency**

- **Part J1 – building fabric**

Design specification need be prepared and provided by the project Energy Efficiency Consultant at the Construction Certificate stage of the approvals process.

- **Part J3 – building sealing**

Design specification need be prepared and provided by the project Energy Efficiency Consultant at the Construction Certificate stage of the approvals process.

- **Part J5 – air-conditioning and ventilation systems**

Design specification need be prepared and provided by the project Energy Efficiency Consultant at the Construction Certificate stage of the approvals process.

- **Part J6 – artificial lighting & power**

Design specification need be prepared and provided by the project Energy Efficiency Consultant at the Construction Certificate stage of the approvals process.

- **Part J7 – heated water supply and swimming pool and spa pool plant**

Design specification need be prepared and provided by the project Energy Efficiency Consultant at the Construction Certificate stage of the approvals process.

- **Part J8 – facilities for energy monitoring**

Design specification need be prepared and provided by the project Energy Efficiency Consultant at the Construction Certificate stage of the approvals process.