



TREVOR R HOWSE

DESIGN SPECIFICATION

NCC 2016 – VOLUME 1



PREPARED FOR

Penrith City Council C/- Justin Long Design

REGARDING

Emu Plains Village – 4 Lawson Street, Emu Plains

BUILDING REGULATIONS • FIRE SAFETY ENGINEERING • LEGAL SERVICES

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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
J18174 / 2	1	NCC 2016 Volume 1 Specification completed	8.1.2019
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Summary & Recommendations

1.1 Summary

This “Design Specification – NCC 2016 Volume 1” has been prepared at the request of Penrith City Council C/- Justin Long Design.

It relates to the **Building Works Package** associated with the undertaking of alterations and additions to the existing building located at 4 Lawson Street, Emu Plains.

Figure 1.1.1 – Existing aerial photo



The purpose of this Design Specification is to –

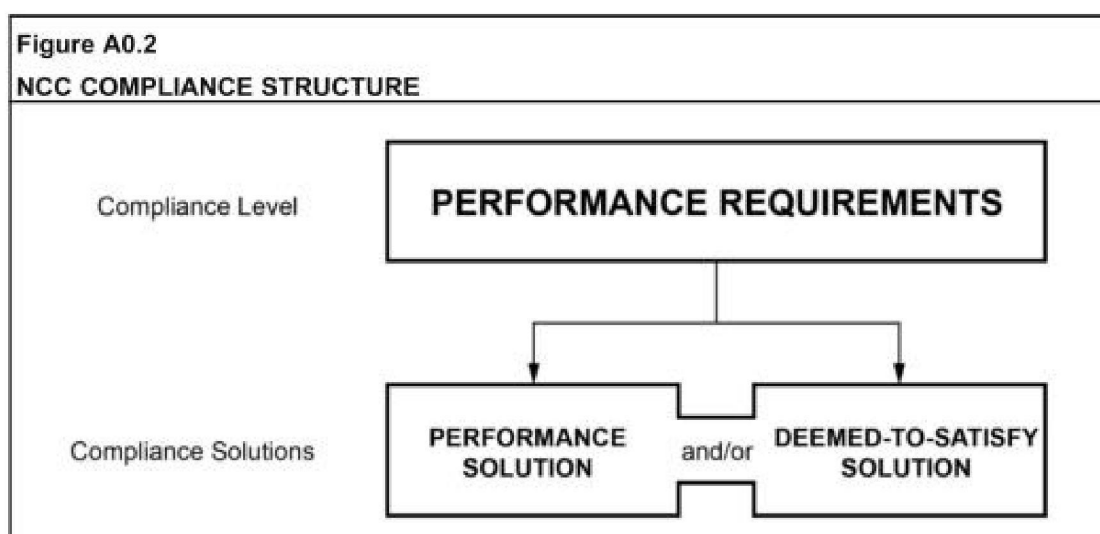
- Identify those *primary* requirements of the National Construction Code 2016, Volume 1 (NCC 2016 Vol. 1) applicable to the proposed building work; and
- Form part of the overall package of approved documentation under a Building Application against which the works shall be undertaken, and inspected and certified at completion.

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

As this excerpt from the NCC 2016 Vol. 1 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



1.2 Recommendations

Undertake the proposed works in accordance with the nominated documentation (item 2.3 of this report) and the NCC 2016 Vol. 1 prescribed requirements in Section 4 of this report.

Particular attention is drawn to the following –

- Clause F4.8 – Restriction on location of sanitary compartments.

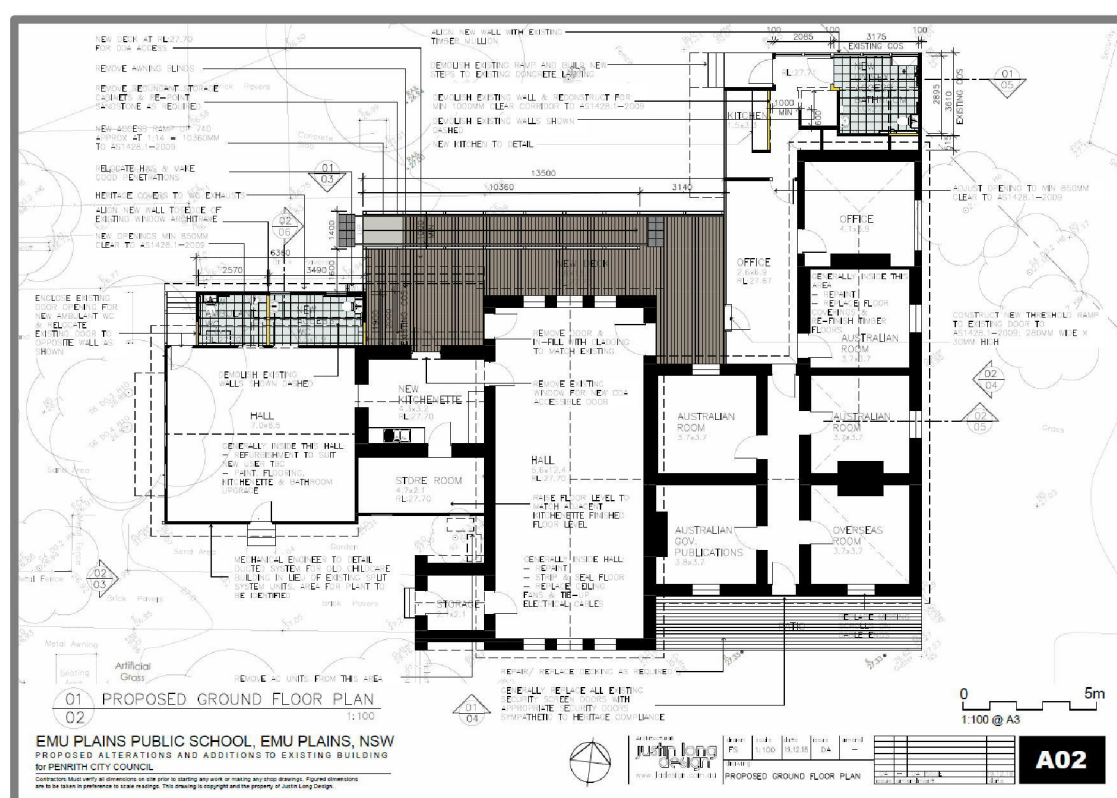
Introduction

2.1 General

This “Design Specification – NCC 2016 Volume 1” has been prepared at the request of Penrith City Council C/- Justin Long Design.

It relates to the **Building Works Package** associated with the undertaking of alterations and additions to the existing building located at 4 Lawson Street, Emu Plains.

Figure 2.1.1 –proposed floor plan



2.2 Specification Purpose

Clause 145 (1) (b) of the Environmental Planning & Assessment Regulation 2000 prescribes as follows –

“145 Compliance with development consent and Building Code of Australia

- (1) *A certifying authority must not issue a construction certificate for building work unless:*
- (b) *the proposed building (not being a temporary 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 National Construction Code 2016, Volume 1 (NCC 2016 Vol. 1) applicable to the proposed building work; and
- Form part of the overall package of approved documentation under a S109R Design Certificate 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 2016 Vol. 1 including the New South Wales variations;
- Architectural documentation prepared by Justin Long Design –

DA

DA issue

19.12.2018

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 Disability Discrimination Act (DDA);
- The Disability (Access to premises – building) Standard 2010; and ^[1]

¹ The subject of a separate Accessibility Specification prepared and issued by our office, numbered J18174(a) / 2-1, and dated 8 January, 2018

- The accessibility provisions of Parts D3 and F2 of the NCC 2016 Vol. 1. ^[1]

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 2016 Vol. 1 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 2016 Vol. 1.

Building Description

3.1 General

The overall site is located at 4 Lawson Street, Emu Plains, and is bounded by –

- Great Western Highway (to the south)
- Lawson Street (to the north)
- Pyramid Street (to the west)
- Dukes Oval (to the east)

For the purposes of the NCC 2016 Vol. 1, the subject building is described within items 3.2 – 3.6 below.

3.2 Rise in Storeys

The existing building has a rise in storeys of one (1)

3.3 Building Classification

The existing building contains a single classification, namely –

- Class 9b – assembly

The proposed use is of a single classification, namely –

- Class 9b – assembly

3.4 Effective Height

This report is based upon the premise that the existing building has an effective height of less than 25-metres.

3.5 Type of Construction

The existing building is subject to the Type C Construction requirements of the BCA.

3.6 General Floor Area Limitations

The building in which the subject floors are contained are restricted to the following floor area and volume limitations for individual fire compartments –

- Class 9b
 - Floor area – 3,000 m²
 - Volume – 18,000 m³

NCC 2016 Vol. 1 – Specification

4.1 General

The following prescriptive provisions of NCC 2016 Vol. 1 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 2016 Vol. 1 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 3700-2011
- (b) Concrete – AS 3600-2009
- (c) Steel – AS 4100-1998
- (d) Glazing – AS 1288-2006 & AS 2047-2014
- (e) Metal roof – AS 1562.1-1992

- **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 C1.10 – 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;
 - (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) 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.

4.4 Section D – Access & Egress

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

New doorway openings in the proposed works are to designed and constructed to have –

 - (a) An unobstructed opening height not less than 1980-mm; and
 - (b) An unobstructed opening width not less than 850-mm where accommodating persons with a disability, and 750-mm otherwise.

All accessways must have an unobstructed width not less than 1000-mm (note also the accessibility requirements in the Accessibility Specification can require such to be increased in certain locations).
- **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 D2.17 – Handrails**

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

- (a) Be installed to both sides of each stairway and ramp length; and
- (b) Be continuous through each stair flight and ramp length; and
- (c) Comply with AS 1428.1-2009.

- **Clause D2.21 – Latching devices**

All new 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.

4.5 Section E – Services & Equipment

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

AS 2444 compliant portable fire extinguishers are to be provided throughout the building.

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

The existing smoke hazard management systems need be modified to their existing standards of performance to accommodate the new layout.

- **Clause E4.2 – Emergency lighting**
Clause E4.4 – Design and operation of emergency lighting

All parts of the proposed works are to be provided with coverage from an AS 2293.1-2005 compliant emergency lighting system.

- **Clause E4.5 – Exit signs**
Clause E4.6 – Direction signs
Clause E4.8 – Design and operation of exit signs

All parts of the proposed works are to be provided with coverage from an AS 2293.1-2005 compliant exit signage system.

4.6 Section F – Health & Amenity

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

Any modifications to the existing stormwater drainage system must be AS/NZS 3500.3 compliant.

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

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

- **Clause F2.3 – Facilities in Class 3 to 9 buildings**

Based on the proposed number of sanitary facilities depicted in the design, the following population loads are accommodated –

(a) Male

- | | | | |
|-------|---------------|---|-------------|
| (i) | Water closets | – | 100 persons |
| (ii) | Urinals | – | 50 persons |
| (iii) | Wash basins | – | 200 persons |

(b) Female

- | | | | |
|------|---------------|---|-------------|
| (i) | Water closets | – | 50 persons |
| (ii) | Wash basins | – | 150 persons |

NB:

The accessible sanitary facility has been counted once for either sex (male and female).

It has been assumed that one of the new facilities is for male patrons, and the other is for female patrons.

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

Artificial lighting throughout the proposed spaces must be designed and constructed in accordance with AS/NZS 1680.0-2009.

- **Clause F4.5 – Ventilation of rooms**

Mechanical ventilation must be provided to all areas of each floor in accordance with AS 1668.2-2012.

- **Clause F4.8 – Restriction on location of sanitary compartments**

The doorway openings to the new sanitary facilities in the hall space must be screened from view from occupants of the hall space.

4.7 Section G – Ancillary Provisions

No provisions applicable to the proposed Works Package.

4.8 Section H – Special-Use Buildings

No provisions applicable to the proposed Works Package.

4.9 Section J – Energy Efficiency

It is unknown what (if any) air-conditioning system is / is to be provided in the building.

In accordance with the definition of *conditioned space* contained within Clause A1.1 of BCA 2016, where air conditioning is present the proposed works to the building will be subject to the energy efficiency requirements of Parts J1 to J8 prescriptive provisions of BCA 2016.

Where air conditioning is not present, the building will only be subject to the prescriptive provisions of Parts J6 to J8.

- **Clause J1.3 – Roof and ceiling construction**

New portions of roof and ceiling construction must be designed and constructed to achieve a total R-value not less than of 4.2 in the downwards direction.

- **Clause J1.5 – Walls**

New portions of external wall must be designed and constructed to achieve a total R-value not less than 2.8.

- **Clause J2.1 – Application of part (Glazing)**

Any glazing in the enclosing walls of the office space is subject to the SHGC and conductance values of Part J2 of NCC 2016 Vol. 1.

- **Clause J3.4 – windows and doors**

New doors in the envelope of the air conditioned space must –

- (a) Be fitted with a self-closing device; and
- (b) Be fitted with a draft protection device to the bottom of each door leaf; and
- (c) Be fitted with either a foam or rubber compression strip, fibrous seal, or the like, to the sides of each door leaf.

- **Clause J3.5 – exhaust fans**

Self-closing dampers must be fitted to exhaust fans discharging through the envelope of the conditioned space.

- **Clause J3.6 – construction of roofs, walls and floors**

Construction joints in the envelope of the conditioned space must be constructed so as to minimize air leakage.

- **Part J5 – Air-conditioning & Ventilation Systems**

Any new works in terms of air-conditioning system must be designed and constructed in accordance with Part J5 of NCC 2016 Vol. 1.

- **Part J6 – Artificial Lighting & Power**

Any new works to the artificial lighting and power system must be designed and constructed in accordance with Part J6 of NCC 2016 Vol. 1.

- **Clause J7.2 – Heated water supply**

The heated water supply for food preparation and sanitary purposes is to be designed and constructed in accordance with Part B2 of NCC Volume 3 (Plumbing Code of Australia).

- **Clause J8.3 – Facilities for energy monitoring**

The building is to incorporate the facility to record the consumption of electricity and gas.