



# BCA Assessment Report

## 70 The Corso, Manly – First floor fitout for a Pilates Studio



**Project:** 70 The Corso, Manly – First floor fitout for a Pilates Studio

**Reference No:** 116417-BCA-r1

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## EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed Pilates Studio fitout at 70 The Corso, Manly, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

With reference to Clause 64 of the Environmental Planning and Assessment Regulation 2021, no upgrades are considered required subject to the following being prepared for Council to consider at DA Stage.

- The submission of a Consistency letter from the author of the Base Building Fire Engineering Report to confirm that the proposed Class 9b use on the first floor will not impact the existing fire engineering strategy for the building. Where conflicts arise, then suitable recommendations shall be provided for Council's consideration at DA stage.

## 1 ADOPTION OF BCA 2022

### 1.1. Proposed Introduction

It is proposed to introduce the National Construction Code (NCC), Volume One, Building Code of Australia (BCA) 2022 on 1 September 2022. BCA2022 is proposing some major changes to Condensation Management, Energy Efficiency and the introduction of Livable Housing Design.

The introduction of the BCA is in stages and therefore it is not clear what the extent of changes will be as each and every state is still considering whether or not to adopt the proposed changes.

At present there is a draft available however the changes to condensation management and energy efficiency have not been released. The proposed timeline is summarised below:



Figure 1- Source: [www.abcb.gov.au](http://www.abcb.gov.au)

### 1.2. Major Changes known to date

Below is a summary of the proposed changes which were released in the May draft preview. We have also provided a table below for quick reference. Your project has been assessed against the proposed changes where applicable.

#### **Consistent volume structure**

BCA2022 uses a new structure and clause referencing system to create better consistency across all volumes. While the new Section-Part-Type-Clause system makes the NCC look different at first, it's intended to improve user experience and make it more web accessible.

The new structure results in a reorganisation of specifications and parts, some of which are contained in the table below.

#### **Fire safety of external walls**

Volume One contains a number of amendments to the fire safety of external walls. This clarifies interpretation of concessions from non-combustibility requirements. Also included is a new provision that prevents fixing of certain bonded laminated cladding panels by adhesive only.

***Waterproofing***

There are new DTS Provisions in Volume Two for waterproofing of wet areas, not previously covered by an acceptable construction practice or manual.

Waterproofing in Volume One is restructured into three parts to enhance readability and accommodate future changes.

***Weatherproofing***

Volume One contains additional DTS Provisions, providing new solutions for weatherproofing of external walls. These include references to weatherproofing provisions in Australian Standards for masonry, autoclaved aerated concrete and metal wall sheeting.

***Falls for floor wastes***

Volumes One and Two are amended to require bathrooms and laundries where a floor waste is installed, to have a fall of the floor in order to help drain the surface. This also applies to floor wastes included voluntarily.

***Number of exits***

Some minor amendments to the required number of exits are in Volume One. This includes a new concession allowing a single exit for a part of a storey in some circumstances, where previously at least two exits were required.

### 1.3. Summary of Major Changes

Summary of Major Changes		
Clause Reference		Description of proposed changes
BCA 2019	BCA2022	
C1.9	C2D10	<b>Non-combustible building elements</b> Further exemptions to the non-combustible requirements of external walls added. Larger list of materials that can be used where non-combustible materials are required.
-	C2D15	<b>Fixing of Bonded Laminated Cladding panels</b>
C2.5	C3D6	Fire separation of <b>early childhood centres</b> and requirement for 2 fire compartments per storey.
D1.2	D2D3	<b>Number of Exits</b> <ul style="list-style-type: none"> <li>Ground floor can be provided with a single exit in lieu of 2</li> <li>2 exits required from each storey and each fire compartment of an <b>early childhood centre</b></li> </ul>
D1.6	D2D7 – D2D11	<b>Dimensions of Exits</b> Clause split into multiple clauses
D1.11	D2D16	<b>Horizontal Exits</b> – New provisions relating to early childhood centres
D2.16	D3D17 – D3D21	<b>Barrier</b> clause split into multiple clauses
E1.5	E1D4 – E1D13	<b>Sprinkler</b> requirements split into separate clauses for each building class.
E2.2	E2D3 – E2D21	General Requirements – <b>Smoke Hazard Management</b> Tables removed and replaced with clauses for each building class
F1.7	Part F2	<b>Wet Area and Overflow Prevention</b>
F1.11	F2D4	<b>Floor wastes</b> – floor must be graded with a minimum fall of 1:80
FP1.4	Part F3	<b>Roof and Wall Cladding</b> Introduces DTS provisions for walls and roofs in lieu of the previous BCA requiring performance solutions for all weatherproofing
-	G7	<b>Livable housing design</b>
H1.1	Part I1	<b>Class 9b Building</b>
H2.1	Part I2	<b>Public Transport Buildings</b>
H3.1	Part I3	<b>Farm Buildings and Farm Sheds</b>

### 1.4. August Changes

The August draft of BCA2022 is proposed to include significant changes to condensation management in external walls and changes to all parts of Section J Energy Efficiency.

At the present time, we do not have any information on these proposed changes and therefore cannot give any advice on the likely impact on the design proposal the subject of this report.

It is suggested that when the next draft is released in August 2022, the design be re-assessed against these new provisions, if it is likely that a construction certificate (including a staged CC) will be issued after 1 September 2022.



## 2 BASIS OF ASSESSMENT

### 2.1. Location and Description

The building development, the subject of this report, is located at 70 The Corso, Manly and comprises a change of use on the first-floor level from an office space (class 5) to a Pilates studio (class 9b) at the rear of the tenancy. It is noted that the existing ground floor comprises retail space which would also be classified as Class 6 tenancies.

The principal pedestrian entrance into the proposed Pilates studio is from Rialto lane which provides access to the internal stairway that connects the first-floor level where an existing office is located, as well as the proposed Pilates studio.



*Photo sourced from google maps*

### 2.2. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2019, Amendment 1, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Assessment Report to be prepared under separate cover.

### 2.3. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019, Amendment 1 (BCA) incorporating the State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. The BCA is updated generally on a three-yearly cycle, starting from the 1st of May 2016.

### 2.4. Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

- (a) the structural adequacy or design of the building;
- (b) the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and

- (c) the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic fire protection services.

This report does not include, or imply compliance with:

- (a) the National Construction Code – Plumbing Code of Australia Volume 3
- (b) the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to);
- (c) Demolition Standards not referred to by the BCA;
- (d) Work Health and Safety Act 2011;
- (e) Requirements of Australian Standards unless specifically referred to;
- (f) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and

## 2.5. Design Documentation

This report has been based on the Design plans and Specifications listed in Annexure A of this Report.

## 3 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

### 3.1. Rise in Storeys (Clause C1.2)

The building has a rise in storeys of two (2).

### 3.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
6	Ground	Existing Retail shops
5	First floor	Existing Office
9b	First Floor	Proposed Pilates Fitout

### 3.3. Effective Height (Clause A1.0)

The building has an *effective height* less than 12 metres.

### 3.4. Type of Construction Required (Table C1.1)

The existing building would have formally be considered as Type C Construction, however due to a Class 9b being located on the first floor, the building now becomes Type B Construction.

### 3.5. Floor Area and Volume Limitations (Table C2.2)

The building is subject to maximum floor area and volume limits of:-

Class 5 and 9b	Maximum Floor Area	5 500m <sup>2</sup>
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	Maximum Volume	33 000m <sup>3</sup>
Class 6	Maximum Floor Area	2 000m <sup>2</sup>
	Maximum Volume	12 000m <sup>3</sup>

### 3.6. Fire Compartments

The following *fire compartments* have been assumed:

- (a) The entire building

### 3.7. Exits

The following points in the proposed Pilates studio have been considered as the exits:

- (a) The top riser of the non-fire-isolated stairway.

## 4 CLAUSE 62 AND 64 – ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATIONS

In addition to the requirements for new works to comply with the current provisions of BCA2019, it is necessary to review the existing building, particularly those parts which are being relied upon for the new works component and to ascertain whether any upgrading is required to satisfy Clause 62 & 64 of the Environmental Planning and Assessment Regulation 2021.

The main trigger for upgrades to an existing building is:-

### **Clause 64 of the Environmental Planning and Assessment Regulation, 2021 –**

*(1) This section applies to the determination of a development application that involves the rebuilding or alteration of an existing building if—*

- (a) the proposed building work and previous building work together represent more than half of the total volume of the building, or*
- (b) the measures contained in the building are inadequate—*
  - (i) to protect persons using the building, if there is a fire, or*
  - (ii) to facilitate the safe egress of persons using the building from the building, if there is a fire, or*
  - (iii) to restrict the spread of fire from the building to other buildings nearby.*

As the proposed involves alterations to the existing tenancy to formalise the Pilates studio (albeit very minor internal works that could possibly be undertaken under exempt development), Clause 64 must be considered by Council at the DA stage. The proposed works would not represent more than half the volume of the building, therefore upgrades are only deemed required if the measures contained in the building are inadequate to; protect persons using the building, facilitate there egress or restrict the spread of fire from the building. The following assessment has been carried out.

A two storey Class 6, 5 and 9b (located on the top storey) is not required to have a detection system under Clause E2.2, however a search of Councils records has revealed that the base building which was originally a two storey Class 6 and 5 building has a Fire Engineering Report undertaken by Fire Modelling and Computing dated March 2019 which provides two Performance Solutions; extended travel distances from the first floor and an inwards swinging door on the ground floor. Of particular interest is that the Fire Engineering Report requires an AS 1670.1 detection system to be installed which is used to rationalise the extended travel distances. Moreover, the Fire Engineering report recommended FRL 30/30/30 construction between the ground and first floor Class 5 and 6 parts, as well as smoke separation between the tenancies on the first floor. It is noted that a Class 9b part in a Type B Construction would normally require an FRL 30/30/30 slab and therefore it is considered that the new use would readily meet the required FRL's for vertical separation. Whilst the travel distances are not being changed, the classification of the building is being changed, therefore it is recommended that a consistency letter is provided from the author of the Fire Engineering Report to confirm that the proposed Class 9b Pilates studio will not impact the existing fire engineering strategy provided for the building. On the proviso that the existing fire engineering strategy is consistent with the new Class 9b use, then Council shall consider enforcing no upgrades to the existing building.

## 5 BCA ASSESSMENT

### 5.1. Introduction

An assessment of the Architectural design documentation against the Deemed-to Satisfy Provisions of the Building Code of Australia, 2019 (BCA) has been undertaken. It is important to note that only those items which are considered to be critical to the compliance of the proposed Change of Use building works have been discussed below. Any parts of the BCA2019 which have not been discussed are considered to be satisfied to an appropriate level or are not applicable to the proposed Change of Use.

### 5.2. Part C – Fire Resistance

#### Clause C1.10 – Fire Hazard Properties

The fire hazard properties for the internal lining throughout the Pilates Studio shall be further assessed at CC stage to determine compliance with Specification C1.10.

#### Clause C2.8 – Separation of classifications in the same storey

The building has a Class 5 and 9b classification located on the first floor, however under Type B Construction, the non-load bearing bounding walls don't require an FRL. However, it is noted that the Fire Engineering Report required fire rated construction to rationalise the extend travel distance, therefore this shall be considered under the consistency letter required under Clause 64.

#### Specification C1.1 – Fire Resisting Construction:

The proposed Class 9b use on the first floor triggers the building to be classified as Type B Construction. The Fire Engineering report required FRL 30/30/30 fire separation between the ground and first floor levels, therefore it is readily assumed that the floor slab FRL will comply with the required Type B Construction requirements for a Class 9b. Furthermore, the architectural plans show 220mm thick solid concrete walls on the boundary, therefore the external walls are assumed to readily achieved the required FRL's for Type B Construction.

### 5.3. Part D1 & D2 – Provision for Escape & Construction of Exits

#### Clause D1.2 – Number of exits required:

The proposed Class 9b will have less than 50 persons, therefore the single exit being the non-fire-isolated stairway complies with the provision of this clause.

#### Clause D1.4 – Exit travel distances:

There is an existing Fire Engineering report which allows a travel distance from the current first floor level Class 5 tenancy up to 34 metres, in lieu of the required 20 metres. Due to the Pilates studio changing the use from a Class 5 to a Class 9b, the consistency letter requested under Clause 64 shall provide comments regarding the 34-metre travel distance from the Class 9b part in lieu of the Class 5.

#### Clause D1.13 – Number of persons accommodated:

Clause D1.13(c) allows other suitable means to be used to calculate occupant numbers, therefore because the studio has 13 reformers plus one obstructor and a reception staff, it has been considered that the maximum occupant numbers in the Pilates studio would be 15 persons.

#### Clause D2.20 – Swinging doors:

The inwards swinging doors in the Pilates studio are doorways in a path of travel to a required exit, therefore they are permitted to swing inwards. The final exit door that discharge to Rialto Lane swings inwards, however there is fire engineering undertaken to allow this configuration.

## 5.4. Part D3 – Access for People with a Disability

### Disability (Access to Premises – Buildings) Standards 2010:

The Premise Standard is applicable to the proposed development and requires the new works to comply with the BCA2019 provisions as well as the 'affected' part which is the accessway from the Principal Pedestrian entrance to the new works. However, it is noted that the Premises Standard has a Lessee concession under Clause 4.3 which states where a building has more than one lessee and the lessee is lodging an application to Council, then the affected Part upgrade is not required to be upgraded. On this basis, as the Pilates studio is a lessee in a building with more than one lessee, then no affected part upgrade is required. Furthermore, because the proposed building works are limited to internal works which are permissible under exempt development which wouldn't normally require approval (linings, partition walls, painting etc), then it is considered that the new works would not require any Access upgrades.

### Clause D3.7 – Hearing augmentation:

If the Class 9b Pilates Studio has an inbuilt amplification system proposed, then a hearing augmentation system will be required to be installed throughout the studio. Compliance is readily achievable, subject to further details being provided at CC stage.

## 5.5. Part E – Services and equipment

### Clause E1.3 – Fire Hydrants:

Based off scaled measurements, the existing building is less than 500m<sup>2</sup> and therefore would not require a fire hydrant system.

### Clause E1.4 – Fire hose reels:

Based off scaled measurements, the existing building is less than 500m<sup>2</sup> and therefore would not require a fire hose reel system for the Class 9b part.

### Clause E1.6 – Portable fire extinguishers:

The Class 9b Pilates studio will require a portable fire extinguisher to be located inside the tenancy as per Clause E1.6 and AS 2444-2010.

### Clause E2.2 – General requirements (smoke detection):

As discussed under Clause 64, a two storey building with Class 5, 6 and 9b parts does not require a detection system, however as part of the Fire Engineering strategy an AS 1670.1 detection system has been installed.

Furthermore, if a new mechanical ventilation system is being proposed throughout the Class 9b part, then the NSW variation of Table E2.2b will require the ventilation system in a Class 9b assembly building to be provided with automatic shutdown where the system does not form part of the smoke hazard management system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air system installed in accordance with Sections 5 and 6 of AS 1668.1). Therefore, if a mechanical system is provided which exceeds the permissible concessions under E2.2b, then automatic shutdown must be installed in accordance with NSW E2.2b. This shall be further assessed at the CC stage when mechanical details are available.

### Clause E4.2 – Emergency lighting requirements:

The Class 9b tenancy has a points that are located greater than 20 metres from a doorway that leads to a non-fire-isolated stairway, therefore the tenancy will require an emergency lighting system as per the requirements of this clause.

### Clause E4.5 – Exit signs:

The Class 9b tenancy will require illuminated exit signs to be located over the two doorways that provide egress to the corridor.

## 5.6. Part F – Health and Amenity

### Clause F2.3 – Facilities in Class 3 to 9 buildings:

The Pilates studio will have access to the common area sanitary facilities which comprise of X2 female WC's, X1 female wash basin, X1 male WC and X1 male wash basin. It is noted that employees and the public can share facilities in a Class 9b part and furthermore Clause F2.3(c) states that where the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet facilities. Considering that Pilates studios are predominantly female employees, it is considered that one of the female WC's is treated for the employees which will allow up to 15 females and 2 male staff members, and the other female WC and male WC can be used for the patrons which will allow up to 10 males (subject to a urinal being provided) and 10 females (which exceeds the number of occupants calculated under Clause D1.13).

### Clause F4.5 – Ventilation of rooms:

The tenancy will either require natural ventilation or a mechanical ventilation system in accordance with AS 1668.2 and AS/NZS 3666.1. Details to be provided at CC stage.

## 6 STATEMENT OF COMPLIANCE

The plans assessed were developed to a standard suitable for submission as a Development Application and do not contain all the details necessary to allow a CC to be issued. As such, this assessment was limited to the major items of the BCA with the view of identifying any items that may result in a modified development consent being required, or additional key items that need to be included in the design.

The building works proposed on the architectural design documentation as referred to in report have been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with the BCA2019.

## **ANNEXURE A   DESIGN DOCUMENTATION**



## Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by Studio Pilates International			
Drawing Number	Revision	Date	Title
00A	B	04.02.22	Cover Page
00B	B	04.02.22	Finishes
00C	B	04.02.22	Location Plan
00D	B	04.02.22	Isometric Views
01	B	04.02.22	Floor Plan
02	B	04.02.22	Reflected Ceiling Plan
03	B	04.02.22	Flooring Plan
10	B	04.02.22	Entrance Elevation 08 & Signage Detail
11	B	04.02.22	Internal Elevations 01,02,03,06 & 07
12	B	04.02.22	Internal Elevations 04 & 05

## **ANNEXURE B   ESSENTIAL SERVICES**

## Annexure B - Essential Services

There has been no copy of the base building Fire Safety Schedule provided, however as a result of the [proposed works the following measures will be required to be added (if not already listed). The following table may be required to be updated as the design develops and options for compliance are confirmed.

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
<b>General</b>		
1.	Portable fire extinguishers	<b>BCA2019 E1.6</b> AS 2444–2001
2.	Emergency lighting	<b>BCA2019 E4.2, E4.4</b> AS/NZS 2293.1:2018
3.	Exit signs	<b>BCA2019 E4.5</b> (Exit Signs) <b>BCA2019 E4.8</b> (Design and Operation - Exits) AS/NZS 2293.1:2018
<b>Mechanical Services</b>		
4.	1. Auto-shutdown of Air-handling System. > (NSW Table E2.2b) - Any system in a Class 9b assembly building which does not form part of a smoke hazard management system, other than: > non-ducted individual room units with a capacity of not more than 1000 L/s; or > miscellaneous exhaust are systems installed as per Section 5 and 6 of AS 1668.1:2015.	<b>BCA2019 E2.2, Table E2.2b</b> <b>Spec E2.2a, Spec E2.2b</b>
<b>Performance Solutions</b>		
1	The Fire Engineering Performance Solutions prepared by Fire Modelling & Computing dated March 2019	