Building Code Consulting . Private Certification

14 October 2021

Our Reference: 210642.1

Williams River Steel
25 Old Punt Road
Tomago NSW 2322

Attn: Mr Chris White

BUILDING CODE OF AUSTRALIA 2019 AMDT 1 REVIEW - FINAL
Brookvale Swim School & Wellness Centre – 145 Old Pittwater Road, Brookvale.

McCarthy Consulting Group Pty Ltd have undertaken a desktop review of the current drawings as referenced below for the proposed Brookvale swim school and wellness centre at the above address against the provisions of Building Code of Australia 2019 (Amendment 1).

Should you have any queries regarding this please do not hesitate to contact this office.

Regards,

Brett Taylor
McCarthy Consulting Group (NSW) Pty Ltd

REVISION STATUS AND APPROVAL				
REVISION	DATE	STATUS	WRITTEN	CHECKED/APPROVED
#	14/09/2021	Preliminary	BT	PM
1	13/10/2021	Final	BT	PM

1.0 INTRODUCTION

This report outlines the findings of our assessment of the referenced design drawings for the proposed Brookvale swim school and wellness centre against the provisions of Building Code of Australia 2019 Amendment 1 (NCC)

2.0 PROJECT DESCRIPTION AND ADDRESS

The project comprises a number of pools, consultation and treatment rooms and reception areas.

Existing Site

3.0 SCOPE & LIMITATIONS

The scope of this report is to provide a regulatory review of the current documentation generated to date against NCC 2019 Amdt 1 to assist the design team.

The following limitations apply to this assessment:

3.1 This report is based on the drawings and other information listed in the table of referenced documents.

3.2 The drawings are assessed to the extent available based on the level of documentation and detail to identify current NCC compliance and design issues that are apparent from a desktop review of drawings; further assessment will be necessary as design and details progress.

3.3 Details in regard to access for people with disabilities have been assessed to the extent of the deemed to satisfy provisions of the NCC only. A detailed assessment of areas can only be conducted when dimensioned drawings are available.

3.4 The assessment does not consider the requirements for people with disabilities under the provisions of the Disabilities Discrimination Act 1992, to fully address this aspect a separate report should be prepared by an accredited Access Consultant at the discretion of the client.

3.5 The assessment does not consider the requirements of legislation other than that required under the Environmental Planning and Assessment Act 1979, i.e. Occupational Health and Safety, Safety in Design etc.

3.6 Generally this assessment will not detail requirements of the referenced Australian Standards, it is expected the relevant design disciplines will advise where their proposed designs do not achieve absolute compliance.

3.7 This report does not address the following aspects:

- Water, Plumbing and drainage approvals from water and infrastructure provider
- Workplace health and safety requirements/Workcover requirements
- Safety in Design

- Traffic management
- Environmental assessments
- Town planning assessment
- Disability Discrimination Act
- Subdivision and road reserve works.

4.0 LEGISLATIVE FRAMEWORK

The project is assessed against the provisions of NCC 2019 Amendment 1 including the Disability (Access to Premises- Buildings) Standard 2010.

Legislation	Date of Publication	Comments
Environmental Planning and Assessment Act 1979. (No 203)	1979	Current
Disability (Access to Premises – Buildings) Standard	2010	Current
Building Code of Australia	2019 Amdt 1	Including editions of standards referenced therein.
AS1428.1-2009	2009	Incorporating amendments 1 & 2.

5.0 DRAWINGS ASSESSED

This NCC review has been undertaken against the following plans prepared by Quattro Architecture:

Name	Number	Revision	Date
Cover Sheet	DA-A-000	G	06/10/2021
Notification Plan	DA-A-010	G	06/10/2021
Existing Site Plan	DA-A-049	G	06/10/2021
Site Plan	DA-A-050	G	06/10/2021
Site Analysis Plan	DA-A-060		06/10/2021
Ground Floor Plan	DA-A-100	G	06/10/2021
Level 1 Plan	DA-A-101	G	06/10/2021
Roof Plan	DA-A-102	G	06/10/2021
Wellness Centre Ground Plan	DA-A-150	G	06/10/2021
Wellness Centre Level 1	DA-A-151	G	06/10/2021
Ground Level Wet Areas	DA-A-153	B	06/10/2021
Building Elevations	DA-A-200	G	06/10/2021
Building Sections	DA-A-250	G	06/10/2021
Building Signage	DA-A-800	G	06/10/2021
Building Signage	DA-A-801	C	06/10/2021
Building Finishes	DA-A-850	G	06/10/2021
Ground Level Plan access mark up by Wendy Gould	DA-A-100	B	08/09/2021

6.0 BUILDING CHARACTERISTICS

The following assessment data has been drawn from the provisions of the NCC 2019 Amdt 1.

Building Use Classification – New Works	
Classification	Reception/wellness centre – Class 6 Pools – Class 9b/10b
Rise in storeys	2 storey
Floor Area	~1016^{m2} – Ground Floor ~1016^{m2} – First Floor
Type of construction required	Type C Construction [Note 1]
Effective Height	<8m
Building Importance	3

Climate Zone	2

Note 1: The Type of Construction for buildings of multiple classifications is determined by the classification of the top storey (Class 6 in this case).

7.0 NCC 2016 Amdt 1 DEFINITIONS

Relevant definitions from NCC that are applicable to the proposed projects referenced within the report are as follows –

Accessible means having features to enable permit use by people with disabilities.

Accessway means a continuous accessible path of travel (as defined in AS 1428.1:2009) to, into or within a building.

Ancillary element means an element that is secondary to and not an integral part of another element to which it is attached.

Deemed-to-Satisfy Provisions means provisions which are deemed to satisfy the *Performance Requirements*.

Exit means—

(a) Any, or any combination of the following if they provide egress to a road or *open space*—

(i) An internal or external stairway.

(ii) A ramp.

(iii) A fire-isolated passageway.

(iv) A doorway opening to a road or *open space*.

(b) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Luminance contrast means the light reflected from one surface or component, compared to the light from another surface or component.

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

8.0 Fire Services and Installations

The below is a draft fire safety schedule for the building.

Fire Safety Measure	**Design/Installation Standard (NCC Clause / Australian Standard)**
Emergency Lighting	NCC Clause E4.4 & AS/NZS 2293.1-2018
Exit Signs	NCC Clause E4.5, E4.6 & E4.8, AS/NZS 2293.1-2018
Fire Hose Reels	NCC E1.4 & AS2441-2005
Fire Hydrant Systems	NCC Clause E1.3 & AS2419.1-2005
Paths of Travel	NCC clauses D2.19 & D2.21
Portable Fire Extinguishers	NCC Clause E1.6, AS2444-2001
Warning and Operational signs	EPA reg Clause 183 NCC C3.6, D2.22, E3.3

9.0 ACCREDITED PACTITIONERS (FIRE SAFETY)

NSW has recently established requirements for “accredited practitioners (fire safety)” to undertake certain regulated work under the Environmental Planning and Assessment Regulation. This includes:

endorsing plans and specifications for *relevant fire safety systems*

endorsing fire safety performance solution reports

endorsing exemptions to the Building Code of Australia for minor works to existing relevant fire safety systems

assessing the ongoing performance of essential fire safety measures in a building and endorsing the annual fire safety statement.

On 1 July 2020, legislative changes updated the requirements for accredited practitioners (fire safety) (previously known as 'competent fire safety practitioners').

The only people who can do the work of an accredited practitioner (fire safety) are persons who are accredited under the approved industry accreditation scheme (FPAA) or persons who hold the licences set out below.

Certain classes of registered certifier as follows:
Engineer—electrical (previously C8) certifier may endorse plans and specifications for a fire detection and alarm system,
Engineer—mechanical (previously C9) certifier may endorse plans and specifications for a mechanically ducted smoke control system,
Certifier—hydraulic (building) (previously C14) certifier may endorse plans and specifications for a hydraulic fire safety system,
Certifier-fire safety (previously C10) may endorse a fire safety performance solution report.

A person who is the subject of a competency certificate issued by a certifier may:
prepare a fire safety performance solution report (cl.130 or 144A of the EP&A Regulation),
endorse plans and specifications for a ducted smoke control system (cl.136AA or 146B of the EP&A Regulation)
endorse a fire safety non-compliance (cl.164B of the EP&A Regulation).

A 'relevant fire safety system' is defined under the amended Regulation as meaning any of the following:
*A **hydraulic fire safety system** within the meaning of clause 165. Clause 165 defines a hydraulic fire safety system as;*
A fire hydrant system;
A fire hose reel system;
A sprinkler system (including wall-wetting sprinkler or drencher system); or
Any type of automatic fire suppression system of a hydraulic nature installed in accordance with a requirement of, or under, the Act or any other Act or law (including an order or a condition of an approval or some other sort of authorisation).
*A **fire detection and alarm system**; or*
*A **mechanical ducted smoke control system**.*

10.0 DESIGN ISSUES

Section B – Structural Provisions

- The structural design of the building and components must be undertaken in accordance with NCC 2019 Amdt 1 Part B. The design is to be undertaken and certified by a structural engineer.
- Balustrade design loads are to include AS1170.2 wind load requirements and be designed and inspected by professional structural engineer.
- The building has an importance level of 3.
- Engineer to develop structural building solution based on loads in NCC cl. B1.2, in particular wind loads and seismic design.

Design Certificate to be provided by Structural Engineer.

Note: Recent industry advice from Australian Building Codes Board highlighted the requirements of the Australian Standard AS1170.4 (section 8) with respect to the design of non-structural building components to resist seismic actions. This identifies the need for the following elements to be designed to resist seismic action:

Architectural Components

- *Walls that are not part of the seismic-force-resisting system.*
- *Appendages, including parapets, gables, verandas, awnings, canopies, chimneys, roofing components (tiles, metal panels) containers and miscellaneous components.*
- *Connections (fasteners) for wall attachments, curtain walls, exterior non- loadbearing walls.*
- *Partitions.*
- *Floors (including access floor systems, where the weight of the floor system shall be determined in accordance with Clause 6.2.2).*
- *Ceilings.*
- *Architectural equipment including storage racks and library shelves with a height over 2.0m.*

Mechanical and electrical components:

- *Smoke control systems.*
- *Emergency electrical systems (including battery racks).*
- *Fire and smoke detection systems.*
- *Fire suppression systems (including sprinklers).*
- *Life safety system components.*
- *Boilers, furnaces, incinerators, water heaters, and other equipment using combustible energy sources or high-temperature energy sources, chimneys, flues, smokestacks, vents and pressure vessels.*
- *Communication systems (such as cable systems motor control devices, switchgear, transformers, and unit substations).*
- *Reciprocating or rotating equipment.*
- *Utility and service interfaces.*
- *Anchorage of lift machinery and controllers.*
- *Lift and hoist components including structural frames providing support for guide rail brackets, guide rails and brackets, car and counterweight members.*
- *Escalators.*
- *Machinery (manufacturing and process).*
- *Lighting fixtures.*
- *Electrical panel boards and dimmers.*

- *Conveyor systems (non-personnel).*
- *Ducts, cabling and piping distribution systems.*

Supports for ducts, cabling and piping distribution systems, except individually supported services, in the following situations:

- *In structures classified as being in EDC I.*
- *For gas piping less than 25 mm inside diameter.*
- *For piping in boiler and mechanical rooms less than 32 mm inside diameter.*
- *For all other piping less than 64 mm inside diameter.*
- *For all electrical conduit less than 64 mm inside diameter.*
- *For all rectangular air-handling ducts less than 0.4 m2 in cross-sectional area.*
- *For all round air-handling ducts less than 700 mm in diameter.*
- *For all ducts and piping suspended by individual hangers 300 mm or less in length.*

(c) All other components similar to those listed in Items (a) and (b).

Services consultants should note where requirements impact on design.
Architect to advise the method of termite control being adopted for this project, noting the definition of primary building element:

> **Primary building element** means a member of a building designed specifically to take part of the loads specified in B1.2 and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members.

Section C – Fire Resistance
Type C Construction required

Section D – Access and Egress
Minimum of 2 exits required from each storey. Travel distance to an exit or a point-of-choice of alternate exits must not exceed 20m.

Any required exit doors that can be obstructed by vehicles are to be provided with bollards in accordance with NCC D1.10. Bollards required to plant and equipment area gates.

Stairs, ramps and landings should have a slip resistance level surface as required by Table D2.14 below. Slip resistance test results showing compliance are recommended at final inspection.

Table D2.14 SLIP-RESISTANCE CLASSIFICATION

Application	Surface conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

The threshold of all doorways must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless –
In a building required to be accessible (or part) by Part D3, the doorway –

a) Opens to a road or open space; and
b) Is provided with a threshold ramp or step ramp in accordance with AS1428.1; or

In other cases –

c) The doorway opens to a road or open space, external stair landing or external balcony; and
d) The door sill is not more than 190mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.

Door hardware on required exit doors and doors in a path of travel to a required exit must comply with NCC cl. D2.21. The door furniture must be lever style with a return to prevent the hand from slipping during use of the lever. The doors must be readily openable without a key from the side that faces a person seeking egress. These provisions also apply to the plant and equipment area gates.

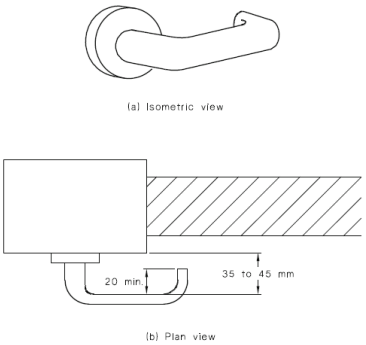
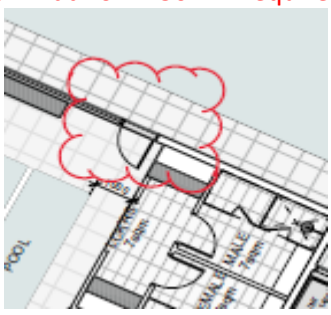


FIGURE 35(A) EXAMPLE OF ACCEPTABLE DOOR HARDWARE FOR HINGED DOORS

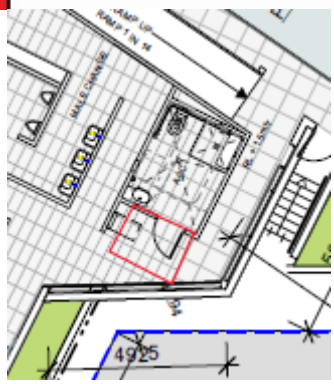
NCC Part D3 - Access for persons with disability

Refer to access consultants marked up review for compliance with Part D3. In addition to those comments: -

- Corridor width outside door leading from the main pool into the wellness centre to be confirmed. Minimum corridor width of 1450mm required,



- The circulation space outside accessible toilet to be confirmed as compliant with AS1428.1 Figure 31(h)



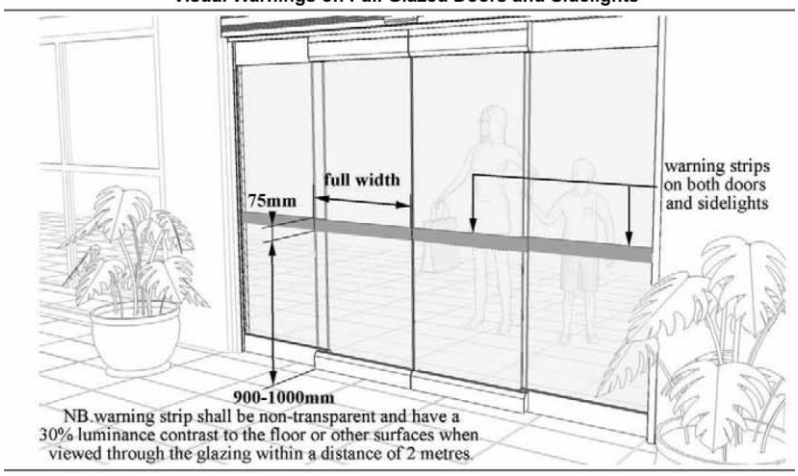
- Circulation space to 'Steam-room' doorway to be confirmed – appears to be impacted by the adjacent pool,

- Details of disabled car parking space and shared zone to be indicated on Construction Certificate drawings,
- Accessible locker and change facility details to be provided to mirror such facilities being provided for able-bodied persons,
- Details of compliant disabled access to Pool 1 to be indicated on Construction Certificate drawings – note Access Consultant comments in regard to compliant system options.

Elements to note: -

- Lever action "D" style hardware located 900-1100mm above FFL
- Luminance contrast to the doorway of 30% to the adjacent wall or other element in accordance with AS1428.1-2009 cl 13.1.
- All doors except fire doors must be openable under a force of not more than 20N.
- All accessways must have a crossfall of not steeper than 1:40.
- NCC Clause D3.6 requires Braille and Tactile exit signage to be fitted to doorways requiring exit signage under E4.5 of the NCC. The braille and tactile exit signage is required to state "EXIT".
- Ambulant and accessible signage is to be provided to the airlock entry to the accessible amenities as well as on the doors into the accessible toilets themselves as per the requirements of NCC Specification D3.6.
- All glazing on the accessways capable of being mistaken as an opening (i.e. shopfront glazing and glazed doors) are to be provided with a glazing decal in accordance with AS1428.1-2009 which requires a solid, non-transparent band not less than 75mm thick extending the full width of the glazed panels and with the lower edge starting between 900-1000mm above FFL.

Diagram 4
Visual Warnings on Full Glazed Doors and Sidelights



NCC Section E – Services & Equipment
The building is to be provided with a Hydrant System complying with AS2419.1-2005 as the floor area is over 500m2.
Details to be confirmed in hydraulic design statement and supporting drawings.

The hydraulic services are to be designed by an Accredited Practitioner in fire safety.
A fire hose reel system is to be provided to building as the floor area is over 500m2. The hose reel system is to be designed and installed in accordance with NCC E1.4 and AS2441-2005.

- Reel adjacent to tiered spectator seating to be confirmed as within 4m of the exit, noting that the location of this reel must not impact on the 1m clear width for the required path of travel from this area.

Details to be confirmed in hydraulic design statement and supporting drawings.

The hydraulic services are to be designed by an Accredited Practitioner in fire safety.

Emergency Lighting and exit signage
Required throughout in accordance with NCC Part E4 and AS/NZS 2293.1-2018. **Details to be confirmed in electrical design statement and supporting drawings.**

Automatic shutdown of Air-Handling Systems
Class 9b buildings must be provided with automatic shutdown of any air-handling system in accordance with NSW Part E2.2b and Table E2.2b. Details to be confirmed in mechanical ventilation design statement and supporting drawings.

NCC Part F – Health and Amenity

- Weatherproofing of external walls is to be designed in accordance with Performance Requirement FP1.4. per F1.0 (a) there is no DtS provisions for this performance requirement in respect of external walls therefore compliance will need to be addressed via a performance solution report by the architect or façade engineer.
- Storm water drainage must comply with AS/NZS3500.3-2018 and be designed and certified by a licenced hydraulic designer.

- Waterproofing of wet areas in buildings must be designed and undertaken in accordance with NCC cl. F1.7, Table F1.7 and AS3740-2010.
- Glazed assemblies in external walls must comply with AS2047 requirements for resistance to water penetration.
- The architect is requested to provide façade drawings and confirm the system of weatherproofing the building.
- The roofing must be installed in accordance with AS1562.1 as it appears all roofs are proposed to be metal sheeting.

Hot, warm and cooling water systems must be designed and installed in accordance with AS/NZS 3666.1 for legionella control.

An accessible adult change facility complying with Specification F2.9 is required. Design complies noting the following specification: -

(b) In each *accessible* adult change facility, the following must be provided:

(i) A hoist complying with Clause 3.

(ii) A toilet pan, seat, backrest and grabrails complying with Clause 4.

(iii) A washbasin and tap complying with Clause 5.

(iv) Fixtures and fittings as specified in Clause 6.

(v) A change table complying with Clause 7.

(vi) Changing rails complying with Clause 8.

(vii) An automated sliding entrance door complying with Clause 9.

(viii) Signage complying with Clause 10.

(ix) Operating instructions for the hoist and change table in accordance with Clause 11.

(x) Circulation spaces complying with Figure 2.

NCC Part J – Energy Efficiency
Energy efficiency - TBC

If the design team would like to clarify any interpretation issues, please contact McCarthy Consulting Group NSW.

Yours Sincerely,

Brett Taylor
McCarthy Consulting **Group NSW**