National Construction Code 2022– Volume 1

Building Code of Australia Compliance Report

Property: 3 Gondola Rd North Narrabeen

Report No: 220045**A updated 16.10. 2024** – amended DA

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1.0 BACKGROUND

A Development Application is to be lodged with Council to build a 5 storey mixed use building. Greenfield Certifiers Pty Ltd have been engaged by the architect to provide a BCA Compliance Report to be submitted as part of the Development Application documentation.

16.10.2024 The design was amended following feedback from Council. This updated report is in relation to the latest plans.
Summary of changes-
Reduction of units from 14 to 12.
Commercial area reduced to 348m^2
Internal layout reconfiguration
Number of car spaces reduced
Setbacks to southern boundary changed

2.0 PURPOSE OF THIS REPORT

To assess the proposed building design against the deemed-to-satisfy provisions of BCA2022 and provide clear advice in regard to compliance/non-compliance with the clauses listed in the report.

The project is at Development Application stage and therefore detail plans and specifications and service plans are not available to show full compliance with all aspects of the BCA.

The purpose of this report is to satisfy Council that the building can comply with the BCA without significant changes to the design which would require an amended Consent.

3.0 DOCUMENTATION ASSESSED

Architectural plans – Revised DA stage- prepared by Mackenzie Architects International- dated **12.9.2024.**

4.0 SUMMARY OF ISSUES TO BE ADDRESSED

1. C4D3 Protection of openings- openings within 3m of south and western boundary require protection.
2. D2D5 Travel distances- dimension of travel from carpark stair to street exceeds 20m.
3. D2D12 Travel via fire isolated exits – stair discharges inside the building.

It is considered that these issues can be addressed at Construction Certificate stage by a fire engineered performance solution if necessary having regard to the requirement for the building to be sprinkler protected.

5.0 DESCRIPTION OF THE BUILDING

Five storey mixed use building on a corner allotment.
Basement – 24 car spaces, services room, two stairways, two lifts, garbage room.
Ground floor- 2 commercial tenancies, 13 car spaces, two stairways, two lifts
First floor – 6 residential sole occupancy units
Second floor- 6 residential sole occupancy units
Roof top - Communal open space, stair, wc, lift

The communal open space on the roof top is defined as an *occupiable outdoor space*.

Classification
Class 2 – residential units
Class 5- professional consulting rooms/offices
Class 6 – retail
Class 7a car parking

Rise in Storeys
5 basement extends above the ground

Number of Storeys Contained
5

Effective height
RL14.30 – RL1.40 = 12.9m

Fire Source Features (Distance measured from external wall/column)

Northern boundary	faces Gondola Rd
Southern boundary	varies, 0 m at ground level at closest point
Eastern boundary	faces Minarto Lane (6.095m wide)
Western boundary	varies, 0m at ground level at closest point

Distance to other buildings on the allotment – not applicable.

5.0 **Building Code of Australia assessment – BCA 2022**

Note:
Only clauses which relate to this specific building are considered. If the clause is not applicable, it is not listed in the report.
Information clauses such as "*how to measure distances, how to calculate floör area* " are not included.
Only key clauses which impact on the base building design are considered.

Part B1 Structural Provisions

The structural elements of the building are not assessed in this report. Structural design plans and certification will form part of an application for building approval.

Section C Fire Resistance

Part C2 Fire Resistance & Stability

BCA clause	Assessment comments	Compliance status
C2D2 Type of construction required	The building is required to be Type A Construction	Note
C2D10 Non-combustible building elements	*In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:* *(a)External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.*	Materials of construction to be nominated at CC stage.

	(b)The flooring and floor framing of lift pits. *(c)Non-loadbearing internal walls where they are required to be fire-resisting.* *(2)A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in—* *(a)a building required to be of Type A construction; and* *(b)a building required to be of Type B construction, subject to C3D11, in— (i)a Class 2, 3 or 9 building; and a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.* *(3)A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification 5.*	

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-
C2D11 Fire hazard properties
C2D15 Fixing of bonded laminated cladding panels (if applicable)

Part C2 Compartmentation & Separation

BCA clause	Assessment comments	Compliance status
C3D3 General floor area & volume limitations	Basement and ground floor storey are much less than the max size permitted. Not applicable to Class 2 units on upper storeys.	Complies
C3D7 Vertical separation of openings in external walls	Not applicable if AS2118.1 sprinkler system is installed. Otherwise horizontal or vertical separation to be shown on cross section plans at CC stage.	Note
C3D9 Separation of classifications in the same storey	<u>Ground floor</u> Class 5/6 is next to Class 7a carpark. They must be separated by a fire wall or the higher FRL of 180 minutes is applied throughout the storey.	To be shown at CC stage.
C3 D10 Separation of classifications in different storeys	The floor above Basement must have an FRL of 120 minutes. The floor above Ground floor must have an FRL of 180 minutes.	To be noted on architectural and structural plans at CC stage.
C3D11 Separation of lift shafts	The lift passes through more than 3 storeys and is required to be fire separated.	Concrete shaft can comply.
C3D12 Stairways and lifts in one shaft	The stairways are not in the same shaft as the lifts.	Complies.
C3D15 Public corridors in Class 2 and 3 buildings	The corridors are less than 40m in length.	No requirement.

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-
C3D13 Separation of equipment- to be shown on services plans
C3D14 Electricity supply system- to be shown on electrical plans

Part C4 Protection of Openings

BCA clause	Assessment comments	Compliance status
C4D2 Application	Applies to window and door openings in external walls required to be fire-resistant.	Note
C4D3 Protection of openings in external walls	Openings within 3m of the southern and western boundary must be fire protected. The 3m zone is measured at a 180^0 radius. The building is setback from the northern and eastern boundaries (street frontage). Openings are exposed to the fire source feature (southern and western boundary) are therefore require protection.	Fire protection required. Performance Solution may be proposed at CC stage.
C4D5 Acceptable methods of protection	*(ii)Windows—* *(A)internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or* *(B) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or* *(C)–/60/– automatic closing fire shutters.*	Method of protection to be nominated on plans or Performance Solution at CC stage.

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-
C4D9 Fire doors to the stairways
C4D10 Fire stopping of service penetrations
C4D11 Fire door to lifts
C4D12 Fire doors to residential units
C4D13, C4D14, C4D15 Fire protection of openings in floors, ceilings, shafts

Specification 5 Fire-resisting construction

S5C11Type A fire – resisting construction- fire resistance of building elements	A loadbearing internal wall must be concrete or masonry. See concession for Class 2. In general, the following fire resistance levels apply- Class 2 – 90 minutes Class 5, 7a – 120 minutes Class 6 – 180 minutes.	Materials and fire resistance levels to be specified at CC stage.

Section D Access & Egress

Part D2 Provision for Escape

BCA clause	Assessment comments	Compliance status
D2D3 Number of exits required	A minimum of one exit is required from Ground Floor to the top storey. See also *D2D5 travel distances* below. A minimum of 2 exits are required in the basement. Occupants can reach an exit without passing through a sole occupancy unit.	Complies Complies. Complies.

D2D4 When fire isolated exits are required	The central stair serving the residential units connects 4 storeys. The central carpark stair connects two storeys. The eastern carpark stair connects the basement to the street.	Fire isolation required. Concession for sprinkler protected building. Not required to be fire isolated. Not required to be fire isolated
D2D5 Exit travel distances	Entry door to residential units must not exceed 6m to the exit stair. Commercial tenancies are permitted 30m travel to the street. Occupiable outdoor space on top storey- less than 20m to exit stair. Basement carpark – complies with 20m and 40m criteria.	Amended design complies. Complies. Complies. Complies.
D2D6 Distance between alternative exits	The carpark exit stairs are greater than 9m apart and not more than 60m apart. The paths of travel do not converge.	Complies.
D2D8 Widths of exits and paths of travel to exits	Egress width at least 1m provided.	Complies
D2D10 Exit width not to diminish in direction of travel	Unobstructed width of exit path must not diminish.	Complies.
D2D15 Discharge from exits	Exit cannot be blocked by vehicles – a bollard is not required. Eastern basement stair discharges direct to the Lane. Central stairs discharge to central corridor which leads directly the Gondola Ave via front entry steps.	Complies
D2D12 Travel via fire –isolated exits	<u>Central stair serving upper storeys</u> *(1)A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from— (a)a public corridor, public lobby or the like; or* *(b)a sole-occupancy unit occupying all of a storey; or* *(c)a sanitary compartment, airlock or the like.* *(2)Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (a)to a road or open space; or* *(b)to a point— (i)in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least ⅔ of its perimeter; and* *(ii)from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or* *(c)into a covered area that— (i)adjoins a road or open space; and* *(ii)is open for at least ⅓ of its perimeter; and*	Complies Does not comply. Discharges inside the building. Performance Solution required.

	(iii)has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and *(iv)provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.*	
	(3)Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, the following applies: (a)That part of the wall must have— (i)an FRL of not less than 60/60/60; and *(ii)any openings protected internally in accordance with C4D5; and*	N/A
	(b)The protection required by (a) must extend for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.	N/A
	(4)If more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit in the same storey— (a)a smoke lobby in accordance with D3D7 must be provided; or *(b)the exit must be pressurised in accordance with AS 1668.1.*	N/A
D2D14 Travel by non-fire isolated stairways	Basement carpark stairs *(1)A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided.*	Complies.
	(3)In a Class 5, 6, 7, 8 or 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80 m.	Travel dimension to be shown.
	(5)In a Class 5 to 8 or 9b building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than— (a)20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space;	Does not comply. Distance is 27.4m.

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-
D2D7 Heights of exits, paths of travel to exits and doorways
D2D9 Width of doorways in exits or paths of travel to exits

Part D3 Construction of exits

BCA clause	Assessment comments	Compliance status
D3D5 Separation of rising and descending stair flights	The basement stair does not connect to the residential stair.	Complies.
D3D9 Enclosure of space under stairs	Storage cupboards are not shown under the stairs.	Complies.
D3D16 Thresholds	No step downs shown at internal doorways.	Complies.

D3D24 Doorways and doors	The exit doors are swinging doors.	Complies.
D3D25 Swinging doors	The exit door will not encroach on the egress width and will not impede the path or direction of egress. The doors swing outwards in the direction of egress.	Complies.

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-
D3D8 Installations in exits and paths of travel
D3D14 Goings and risers
D3D15 Landings
D3D17, D3D18, D3D19, D3D20 Barriers to prevent falls
D3D22 Handrails
D3D26 Operation of latch
D3D28 Signs on doors
D3D29 Protection of openable windows

Part D3 Access for people with disabilities

See separate report by Access Consultant.

Section E Services and Equipment

Part E1 Fire fighting equipment

BCA clause	Assessment comments	Compliance status
E1D2 Fire Hydrants	*a)A fire hydrant system must be provided to serve a building—* *(i)having a total floor area greater than 500 m^2;*	Required.
E1D3 Fire hose reels	*1)E1D3 does not apply to— (a)a Class 2, 3 or 5 building or Class 4 part of a building;* *(2)A fire hose reel system must be provided— (a)to serve the whole building where one or more internal fire hydrants are installed; or (b)where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m2.* *(3)The fire hose reel system must— (a)have fire hose reels installed in accordance with AS 2441; and* *(b)provide fire hose reels to serve only the storey at which they are located, except a sole-occupancy unit of not more than 2 storeys in a Class 6, 7, 8 or 9 building may be served by a single fire hose reel located at the level of egress from that sole-occupancy unit provided the fire hose reel can provide coverage to the whole of the sole-occupancy unit.*	Note. Required.
E1D6 Where sprinklers are required: Class 2 and 3 buildings other than residential care buildings	*In a Class 2 or 3 building, or any multi-classified building containing a Class 2 or 3 part, sprinklers are required throughout the whole building if any part of the building has— (a)a rise in storeys of 4 or more; and an effective height of not more than 25 m.*	Required

E1D14 Portable fire extinguishers	Required. To be selected and located in accordance with AS2444.	Required.
E1D15 Fire control centres	Not required – building is less than 25m high and is not a Class 6, 7, 8 or 9 exceeding 18,000m$^{2.}$	Not required
E1D17Provision for Special hazards	No additional fire fighting equipment is necessary.	No requirements.

Specification 18 Class 2 and 3 Sprinkler system

S18C3 System requirements	*(1)A required automatic fire sprinkler system installed in a Class 2 or 3 building with an effective height of not more than25 m and a rise in storeys of 4 or more must comply with—* *(a)AS 2118.1; or* *(b)AS 2118.4, as applicable; or* *(c)FPAA101D, except for residential care buildings; or* *(d)FPAA101H, except for residential care buildings.* *(2)A Class 2 or 3 building not more than 25 m in effective height with a rise in storeys of 4 or more provided with an automatic fire sprinkler system under (1)(a) or (1)(b) may be constructed in accordance with S18C4(1), as applicable, provided—* *(a)the automatic fire sprinkler system is permanently connected to a fire alarm monitoring system connected to afire station or fire station dispatch centre in accordance with Specification 23 if—(i)the system has more than 100 sprinkler heads; or* *(ii)in the case of a residential care building, the building will accommodate more than 32 residents; and* *(b)the automatic fire sprinkler system is fitted with sprinklers complying with clauses 4.4, 4.5 and 5.5.2 of AS 2118.4in bedrooms; and* *(c)an automatic smoke detection and alarm system is installed in accordance with Specification 20 except that itneed not be connected to a fire alarm monitoring system connected to a fire station or fire station dispatch centre,and in the case of a residential care building it must be installed in accordance with—(i)S20C4; or* *(ii)both—(A)S20C3, provided S20C3(1)(b) is applied as if the building was not protected with a sprinkler system;and* *(B)Specification 23; and* *(d)in a residential care building, the automatic smoke detection and alarm system and the automatic fire sprinklersystem are connected to a local fire indicator panel provided in accordance with Specification 23; andfire orders are provided in a Class 3 building in accordance with G4D8 as for a building in an alpine area.*	Design plans to be submitted at CC stage.

Part E2 Smoke hazard management

BCA clause	Assessment comments	Compliance status
E2D3 General requirements	*1)An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must, subject to (2), be designed and installed— (a)to operate as a smoke control system in accordance with AS 1668.1; or (b)such that it— compartments served; and incorporates smoke dampers where the air-handling ducts penetrate any elements separating the (i)fire* *(ii)is 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.* *(2)For the purposes of (1), each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment.* *(3)Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with these Sections of the Standard.* *(4)A smoke detection system must be installed in accordance with S20C6 to operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits.*	Design plans for ventilation systems to be assessed at CC stage.
E2D8-Buildings not more than 25m in effective height: Class 2 and 3 buildings and Class 4 parts of a building	*In a Class 2 and 3 building or part of a building, or Class 4 part of a building, if the building is not more than 25 m in effective height—* *(a)it must be provided with an automatic smoke detection and alarm system complying with Specification 20; and* *(b)where a required fire-isolated stairway serving the Class 2 or 3 parts also serves one or more storeys of Class5, 6, 7 (other than an open-deck carpark), 8 or 9b parts—(i)the fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp, must be provided with an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1;or* *(ii)the Class 5, 6, 7 (other than an open-deck carpark), 8 and 9b parts must be provided with—(A)an automatic smoke detection and alarm system complying with Specification 20; or* *(B)a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17;*	Method of compliance to be nominated.
E2D12 Class 7a buildings	*A Class 7a building, including a basement, provided with a mechanical ventilation system in accordance with AS 1668.2, must comply with clause 5.5 of AS 1668.1.*	To be shown on services plans at CC stage.

Part E3 Lift installations

Effective height of building = 12.9m. Lift serves this height.

BCA clause	Assessment comments	Compliance status
E3D2 Lift installations	*An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24.*	To be listed in Specification
E3D3 Stretcher facility in lifts	*1)A stretcher facility in accordance with (2) must be provided—* *(a)in at least one emergency lift required by E3D5; or height of 12 m, in at least one of those lifts to serve each floor served by the lifts. where an emergency lift is not required, if passenger lifts are installed to serve any storey above an (b)effective* *(2)A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.*	Required. To be included in lift specification.
E3D5 Emergency lifts	The building does not exceed 25m effective height and is not Class 9a.	Not required.

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-

E3D4 Warning signs
E3D8 Accessible features required for passenger lifts
E3D9 Fire service controls
E3D11 Fire service recall control switch
E3D12 Lift car fire service drive control switch

Part E4 Visibility in an emergency, Exit signs and Warning systems

BCA clause	Assessment comments	Compliance status
E4D2 Emergency lighting requirements	Emergency lighting must be installed throughout basement and ground floor and in all common areas on upper storeys.	Required.
E4D5 Exit signs	An *exit* sign must be clearly visible to persons approaching the *exit*, and must be installed on, above or adjacent to each exit leading to open space	Required.
E4D6 Direction signs	Additional directional signs will be required.	Required.
E4D9 Emergency warning and intercom systems	The building is not greater than 25m effective height and is not Class 3,9a or 9b.	Not required.

Section F Health & Amenity

Part F1 Surface water management, rising damp and external waterproofing

Not assessed in this report. These matters are to be dealt with at Construction Certificate stage or during construction.

Part F2 Wet areas and overflow protection

Not assessed in this report. These matters are to be dealt with at Construction Certificate stage or during

Part F3 Roof and wall cladding

Not assessed in this report. These matters are to be dealt with at Construction Certificate stage or during construction.

Part F4 Sanitary & Other Facilities

BCA clause	Assessment comments	Compliance status
F4D2 Facilities in residential buildings	Every unit has a kitchen, bathroom and laundry facilities.	Complies.
F4D4 Facilities in class 3 to 9 buildings	Unisex toilet provided in each commercial tenancy.	Complies.
F4D5 Accessible sanitary facilities	One accessible toilet is required.	Accessible toilet is located next to stair.

Compliance with the following clauses can be shown at CC stage without a need to change the base building design-
F4D8 Construction of sanitary compartments

Part F5 Room heights

BCA clause	Assessment comments	Compliance status
F5D2 Height of rooms and other spaces	Floor to floor levels are over 3.0m. This allows sufficient height to provide a 2.40m ceiling heights.	Complies.

Part F4 Light and Ventilation

BCA clause	Assessment comments	Compliance status
F6D1 Provision of natural light	Windows and glass sliding doors provide sunlight to every habitable room in the residential units.	Complies
F6D8 Ventilation of rooms	Natural or mechanical ventilation permitted.	Note
F6D9 Restrictions on location of sanitary compartments	A room containing a closet pan or urinal must not open directly into a workplace or kitchen. The rooms containing toilets open to a hallway and will contain an exhaust fan.	Complies.
F6D10 Airlocks	Not required.	Not required.
F6D11 Carparks	Basement carpark must be ventilated in accordance with AS1668.2.	Design plans to be provided at CC stage. Allowance to be made for

		exhaust shaft to roof.
F6D12 Kitchen local exhaust ventilation	Only applies to commercial kitchens. The ground floor tenancies are not nominated for use as restaurant/café.	Note

Part F7 Sound transmission and insulation
Compliance can be shown at CC stage without a need to change the base building design.

Part F8 Condensation management
Compliance can be shown at CC stage without a need to change the base building design

Section G Ancillary Provisions

Part G6 Occupiable outdoor areas

BCA clause	Assessment comments	Compliance status
G6D1 Application of Part	This part does not apply to the balconies of the residential units.	Note
G6D2 Fire hazard properties	The open roof top terrace will not have floor linings.	No requirement
G6D3 Fire separation	The open roof top terrace is not required to be fire separated.	No requirement.
G6D4 Provision for escape	Occupants have access to the fire exit stair. The travel distance dimension of 20m is shown on plan.	Complies.
G6D5 Construction of exits	The exit from the terrace is the central fire exit stair. See assessment under Part D3 of this report.	Complies.
G6D6 Fire fighting equipment	Fire hydrant system must cover the open terrace.	To be shown on fire services plans at CC stage.
G6D7 Lift installations	Occupants of the open terrace can use the central lift.	Complies.
G6D8 Visibility in an emergency, exit signs and warning systems	Exit sign must be installed above the door leading from the terrace to the exit stair. Emergency lighting is not required in a space which is open to the sky.	To be shown on electrical plans. Note.
G6D9 Light and ventilation	The space is open to the sky. Natural light and ventilation is provided. Artificial lighting to be provided for night use.	Complies. To be shown on electrical plans.

6.0 CONCLUSION

This assessment has highlighted items that may not be able to achieve a deemed-to-satisfy solution. However, they are matters that can be resolved that without changing the design of the building to an extent that it would require referral back to Council.

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