

PROPOSED RESIDENTIAL APARTMENT BUILDING 15-21 COTTONWOOD CRESCENT, MACQUARIE PARK NSW 2113

BUILDING CODE OF AUSTRALIA 2022 AMENDMENT 2 CAPABILITY STATEMENT

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DOCUMENT ACCEPTANCE

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REVISION HISTORY

Revision No.	Prepared by	Description	Date
R01	SH / PS	Draft BCA Capability Statement for review	16/1/2026
R02	PS	BCA Capability Statement	3/2/2026
R03	PS	BCA Capability Statement	6/2/2026
R04	PS	BCA Capability Statement	22/6/2026
R05	PS	BCA Capability Statement	26/6/2026



1.0 Introduction

This Building Code of Australia 2022 inclusive of Amendment 2 (BCA) review report has been prepared in support of a State Significant Development Application (SSDA) and concurrent Rezoning Proposal – SSD-94006708 – at 15-21 Cottonwood Crescent, Macquarie Park (Also known as 88 Waterloo Road).

The application seeks development consent for the redevelopment of the site for a mixed-use development comprising residential accommodation and retail uses. Specifically, this application seeks approval for the following:

- Demolition of all existing four-storey residential flat buildings on the site.
- Construction of two mixed-use buildings comprising a 60 and 52 storey building respectively, which will accommodate 858 residential apartments with the inclusion of 10% affordable housing of the uplift being sought.
- Six (6) levels of basement with car parking spaces, bicycle parking, services.

It includes:

- A two-level commercial podium containing: one retail space, four townhouses, residential lobbies, waste storages, residential and visitor parking spaces and bicycle parking spaces
- Communal Open Space, a swimming pool and residential amenities on level four (4).
- Rooftop Terraces on Level 53 of Cottonwood Crescent Tower and Roof Level of Waterloo Road Tower.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (**SEARs**) issued for the project (SSD-94006708).

We have made every attempt to cover the main issues under Parts C, D, E, F of Volume 1 of BCA 2022 Amdt 2 (including the NSW variations) which is the applicable version for the building at this time. It is the responsibility of all designers and engineers to ensure that the design complies with the requirements of the Building Code of Australia, the Australian Standards and the applicable legislation. This report does not infer compliance of the design at this stage of documentation. Further assessment will be required to validate the full compliance of the building design.

This report is not to be construed as specialist advice as referenced in Clause 9(d) of the Design and Building Practitioners Regulation 2021 and as such is not to be referenced in any Compliance Declarations made under the Design and Building Practitioners Legislation.

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1.1 Documentation provided and assessed

This report is based on the following assessed design documentation which comprises of the updated drawings documented by AJC Architects dated 23/6/26 as follows:

Discipline	Drawing No (Revision):
Architectural	DA0001(B), DA2001(B), DA2002(B), DA2003(B), DA2004(B), DA2005(B), DA2006(B), DA2007(B), DA2008(B), DA2009(B), DA2010(B), DA2011(B), DA2012(B), DA2013(B), DA2014(B), DA2015(B), DA2016(B), DA2017(B), DA2018(B), DA2019(B), DA2020(B), DA2021(B), DA2022(B), DA2023(B), DA2024(B), DA2025(B), DA2026(B), DA2027(B), DA2028(B), DA2029(B), DA2030(B), DA2031(B), DA2032(B), DA2033(B), DA2034(B).



2.0 Use and Class of Building

The building has the following classifications and uses based on advice and confirmation of the client:

Level	Use	BCA Class
Basement Levels 1 to 6	Carparking 3550m ² / level = Ancillary Storage (less than 10% of floor area)	Class 7a
Lower Ground Floor	Carpark, Loading dock, waste room, substation, residential lobby	Class 7a, Class 7b Class 8, Class 2
Upper Ground floor	Carparking, residential, retail	Class 7a, Class 2, Class 6
Levels 1 to 3	Carparking, residential	Class 7a, Class 2
Level 4	Podium terrace common rooms, residential apartments, outdoor swimming pool, co working area	Class 9b, Class 2, Class 10b, Class 5
Levels 5 to 60	Residential apartments	Class 2

The total effective height of the building will be 203.5m (Roof RL 247.9 – LG RL 44.5).

3.0 Building Code of Australia Review

3.1 Part B – Structure

The structural components of the building must comply with the applicable Australian Standards. The structural engineering components have not been part of this assessment. The structural engineers will need to ensure the structural requirements of BCA Section B are considered in the buildings assessment design stage (including the importance level of the building).

Under Part B1 of the Building Code of Australia (BCA), a building or structure must be designed to withstand earthquake loads in accordance with AS1170.4-2007, as appropriate. It is important to note that within Section 8 of AS1170.4-2007, there is also an obligation for certain non-structural parts, components and their connections to be designed and constructed to withstand earthquake loads. *Structural engineer and designers to note. Compliance is achievable and to be detailed as the design progresses.*

3.2 Part C – Fire Resistance

1. Type of Construction (C2D2)

The building will have a rise in storeys of 62 with 68 levels contained (inclusive of basement levels). It is therefore required to be of not less than Type A Construction. The building needs to comply with BCA Specification 5 for Type A Construction (See Appendix A). Structural engineer and designers to note. *Compliance is achievable and to be detailed as the design progresses.*

2. Lightweight Construction (C2D9)

Lightweight construction must comply with Specification 6 if it is used in a wall system — that is required to have an FRL; or for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non-fire-isolated passageway or non-fire-isolated ramp, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal.

If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if—

- the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and
- the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.

Compliance is achievable and to be detailed as the design progresses.



3. Non-combustible Building Elements (C2D10)

External walls and common walls, non-loadbearing internal walls where they are required to be fire-resisting must not be constructed of combustible materials, including all components incorporated within them. Flooring and floor framing of lift pits, and non-loadbearing shafts must also be of non-combustible building elements. *Compliance is achievable and to be detailed as the design progresses.*

4. Fire Hazard Properties (C2D11)

The materials in the building are required to comply with the requirements of Clause C2D11, Specification 7 for the following materials;

- a) Floor linings and floor coverings
- b) Wall linings and ceiling linings.
- c) Air-handling ductwork.
- d) Lift cars
- e) Sarking-type materials.
- f) Attachments to floors, ceilings, internal walls and the internal linings of external walls.
- g) Other materials including insulation materials other than Sarking-type materials.

Note – Paint or fire-retardant coatings must not be used in order to make a material comply with a required fire hazard property.

Architect to note any materials selected and or proposed will require test reports to ensure compliance. *Compliance is achievable and to be detailed as the design progresses.*

5. Ancillary Elements (C2D14)

Ancillary elements must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is non-combustible or an item listed under this Clause in the BCA. *Compliance is achievable and to be detailed as the design progresses.*

6. Fixing of Bonded Laminated Cladding Panels (C2D15)

In a building required to be of Type A construction, externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame. An externally located bonded laminated cladding panel need not comply if it is one of the following:

- h) A laminated glass system.
- i) Layered plasterboard product.
- j) Perforated gypsum lath with a normal paper finish.
- k) Fibrous-plaster sheet.
- l) Fibre-reinforced cement sheeting.
- m) A component of a garage door.

None proposed at present.

7. Fire Compartmentation (C3D2) *The table below (Table depicts the limits applicable for Type A construction. These do not apply to Class 2 portions of the building and to the carpark levels provided with a sprinkler system complying with Specification 17.*

BCA Classification	Type A construction
5, 9b or 9c	Max floor area—8 000 m ² Max volume—48 000 m ³
6, 7, 8 or 9a (except for patient care areas)	Max floor area—5 000 m ² Max volume—30 000 m ³



Fire Compartment Calculations

Level	Use	Fire Compartment floor area
Basement Levels 1 to 6, LG, UG and L1, L2, L3	Carparking 3300m ² / level with ancillary storage (less than 10% of floor area)	27,561m ² of Class 7a
Lower Ground Floor	Loading dock, waste room Substation Residential lobby I	1277m ² of Class 7b 148m ² of Class 8, 316m ² of Class 2
Upper Ground floor	Carparking Residential lobby Residential townhouses Retail	1593m ² of Class 7a, 450m ² of Class 2, 4 x 39m ² of Class 2, 114m ² of Class 6
Levels 1 to 3 (each)	Carparking (see top row basements – all carpark levels are in the same fire compartment). Residential unit fire compartment sizes not calculated	-
Level 4	Podium terrace common rooms, Residential apartments (not calculated)	207m ² of Class 9b common room south tower, 223m ² of Class 9b common rooms north tower
Levels 5 to 60	Residential apartments (not calculated)	-

None of the fire compartments exceed the limits of Table C3D2.

8. Vertical Separation of Openings in External Walls (C3D7) *Not applicable to buildings provided with a sprinkler system complying with Specification 17 installed throughout.*

9. Separation of classifications in the same storey (C3D9)

If a building has parts of different classifications located alongside one another in the same storey, each building element in that storey must have the higher FRL for that element for the classifications concerned; or the parts must be separated in that storey by a fire wall having the higher FRL prescribed within Specification 5 as applicable, for that element for the Type of construction and the classifications concerned. This applies to lower ground floor to level 4 of the building where separate classifications apply across the storey. *Fire engineering may be used to justify the rationalisation of the fire ratings to the building where compliance with the DTS provisions is not proposed.*

10. Separation of Classifications in the Different Storeys (C3D10)

If parts of different classification are situated one above the other in adjoining storeys they must be separated i.e. The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification 5 for the classification of the lower storey. *Designers to note. Compliance readily achievable.*

11. Separation of Lift Shafts (C3D11)

Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered, (other than lifts which are wholly within an atrium) must be separated from the remainder of the building by enclosure in a shaft in which—

- (i) in a building required to be of Type A construction—the walls have the relevant FRL prescribed by Specification 5.

Compliance is achievable and to be detailed as the design progresses.

12. Separation of Lift Shafts (C3D11)

A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft. *Design complies.*



13. Separation of equipment (C3D13)

Equipment comprising of lift motors, lift control panels, emergency generators, central smoke control plant, boilers or a battery or batteries installed in the building that have a voltage exceeding 12 volts and a storage capacity of 200kWh or more must be constructed with an FRL in accordance with Specification 5 but not less than 120/120/120 and any doorway protected with a self-closing fire door having an FRL of not less than -/120/30 or when separating a lift shaft and lift motor room, an FRL of not less than 120/-/-. *Services engineer to identify if these services would be present in the services rooms / plant room as it would require fire separation. Compliance is achievable and to be detailed as the design progresses.*

Separation of on-site fire pumps must comply with the requirements of AS 2419.1-2021. *Fire separation of the pump room is not required where the room is sprinkler protected in accordance with a AS2118.1-2017 system.*

Equipment need not be separated if comprises of smoke control exhaust fans constructed in accordance with Specification 21, or stair pressurising equipment installed in accordance with AS/NZS 1668.1, or a lift installation without a machine-room, or equipment otherwise adequately separated from the remainder of the building. *Note. Compliance is achievable and to be detailed as the design progresses.*

14. Electricity Supply System (C3D14)

An electricity substation located within a building must:

- (a) Be separated from other parts of the building by construction having an FRL of not less than 120/120/120, and
- (b) Doorways in that construction to be self-closing fire doors with an FRL of not less than -/120/30.

The main switchboard located within the building that sustains emergency equipment operating in the emergency mode must:

- (a) Be separated from other parts of the building by construction having an FRL of not less than 120/120/120, and
- (b) Doorways in that construction to be self-closing fire doors with an FRL of not less than -/120/30.

Electrical conductors located within a building that supply:

- (a) A substation located within the building which supplies a main switchboard covered by (ii), or
- (b) A main switchboard covered by (ii) must
- (c) Have a classification in accordance with AS/NZS 3013 of not less than WS53W or WS52W, or
- (d) Be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120.

Where emergency equipment is required in a building, all switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment switchgear to the emergency equipment switchgear.

Compliance is achievable and to be detailed as the design progresses.

15. Public corridors in Class 2 and 3 buildings (C3D15)

In a Class 2 or 3 building, a public corridor, if more than 40 m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with S11C2.

Does not comply to Level 4 (70m length each), Levels 5-10 (53m length). Amendments to plans to include smoke door sets or a fire engineered performance solution needed.



16. Protection of Openings in External Walls (C4D3)

Where there are any openings in an external wall required to have an FRL that are located less than 3m from a side or rear boundary, they must be protected in accordance with C4D5 and if used, wall-wetting sprinklers are to be externally fitted to fixed shut windows.

The openings are all more than 3m from northwest and southwest sides of the building, complies.

17. Acceptable methods of protection (C4D5)

Where protection is required, doorways, windows and other openings must be protected as follows:

- a) Doorways—
 - i. internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
 - ii. -/60/30 fire doors that are self-closing or automatic closing.
- b) Windows—
 - i. internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
 - ii. -/60/- fire windows that are automatic closing or permanently fixed in the closed position; or
 - iii. -/60/- automatic closing fire shutters.
- c) Other openings—
 - i. excluding voids — internal or external wall-wetting sprinklers, as appropriate; or
 - ii. construction having an FRL not less than -/60/-.

Fire doors, fire windows and fire shutters must comply with Specification 12.

Note only, this clause provides compliance options where external openings need to be protected. Nil in this case.

18. Openings in Fire-isolated Exits and Service Penetrations in Fire-isolated Exits (C4D9, C4D10)

Any doors opening to fire-isolated stairways, and are not doorways opening to a road or open space, must be a fire door with an FRL of not less than -/60/30 that are self-closing or an automatic closing door activated by smoke detector or other detector suitable in accordance with AS 1670.1.

Fire-isolated exits must not be penetrated by any services other than electrical wiring permitted by D3D8(6) to be installed within the exit; fire services water supply and test drain pipes or ducting associated with a pressurisation system if it is constructed of material having an FRL of not less than -/120/60 where it passes through any other part of the building; and does not open into any other part of the building.

Compliance is achievable and to be detailed as the design progresses.

19. Openings in Fire Isolated Lift Shafts (C4D11)

Entrance doorways in lift shafts must be constructed to comply with AS 1735.11-1986 with an FRL of not less than -/60/- and remain close when not in use. Lift call, indicator or other panels in the wall of a fire-isolated lift shaft that is greater than 35,000 mm² in area, must be backed by construction having an FRL of not less than -/60/60.

Compliance is achievable and to be detailed as the design progresses.

20. Bounding construction: Class 2 and 3 buildings and Class 4 parts (C4D12)

A doorway in a Class 2 or 3 building must be protected if it provides access from a sole-occupancy unit to a public corridor or a room not within a sole-occupancy unit must be protected with a self-closing -/60/30 fire door. A doorway in a Class 2 or 3 building must be protected if it provides access from a room not within a sole-occupancy unit to a public corridor must also be protected with a self-closing -/60/30 fire



door. Applies to the SOU entry doors on all residential units from Upper Ground Level to Level 60, which will require an FRL of -/60/30. Compliance is achievable and to be detailed as the design progresses.

21. Openings in Floors and Ceilings for Services (C4D13)

Where a service passes through—

- i. a floor that is required to have an FRL with respect to integrity and insulation; or
- ii. a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with below.

A service must be protected—

- i. in a building of Type A construction, by a shaft complying with Specification C1.1; or
- ii. in a building of Type B or C construction, by a shaft that will not reduce the fire performance of the building elements it penetrates; or
- iii. in accordance with C3.15.

Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering.

Compliance is achievable and to be detailed as the design progresses.

22. Openings for Service Installations (C4D15)

Electrical, electronic, plumbing, mechanical ventilation, air-conditioning, or other services that penetrate a building element (excluding the external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire – must be fire sealed and installed in accordance with C4D15 or Specification 13.

Compliance is achievable and to be detailed as the design progresses.

3.3 Part D – Access and Egress

1. Number of Exits Required (D2D3)

In addition to any horizontal exit, not less than 2 exits for each storey in a building that has an effective height of more than 25m. *Complies.*

2. When fire-isolated stairways and ramps are required (D2D4)

Every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than 3 consecutive storeys in a Class 2 building. One extra storey of any classification may be included if the building has a sprinkler system complying with Specification 17 installed throughout. *Compliance is achievable and to be detailed as the design progresses.*

3. Exit Travel Distances (D2D5)

Class 2 part:

The entrance doorway of any sole-occupancy unit must be not more than 6 m from an exit or from a point from which travel in different directions to 2 exits is available; or 20 m from a single exit serving the storey at the level of egress to a road or open space; and no point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available.

Class 6 & 7 parts:

No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m; and in a Class 5 or 6 building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m.



Does not comply on:

Northern Tower Levels

- ***Levels 4 to 60: Travel to a point of choice is 13m in lieu of 6m***
- ***Levels 1 to 3: Travel to a point of choice is 11m in lieu of 6m***

Southern Tower Levels

- ***Levels 51 to 52: Travel to a point of choice is 13m in lieu of 6m***
- ***Levels 11 to 50: Travel to a point of choice is up to 15m in lieu of 6m***
- ***Levels 4 to 10: Travel to a point of choice is 16.5m in lieu of 6m***

Levels 4 podium:

- ***Travel distance from open podium areas to a single exit exceeds 40m.***
- ***Doorways allowing egress back into the towers to be considered in future amendments.***

Levels 2 & 3:

- ***Carpark travel to a point of choice is 22m in lieu of 20m.***
- ***North tower residential travel to a point of choice is 11m in lieu of 6m.***

Level 1

- ***Residential travel to a point of choice is 11m in lieu of 6m***
- ***Carpark travel to a point of choice is 32m in lieu of 20m.***

Upper Ground

- ***Travel from the office store to a single exit at the level of egress to a road or open space is 24m in lieu of 20m.***

Lower Ground

- ***Carpark fan room and Retail corridor in carpark has travel to a point of choice up to 29m in lieu of 20m and up to 49m travel to a single exit in lieu of 40m.***

Basement Levels 1 to 6

- ***Travel to a point of choice is up to 26m in lieu of 20m at east and west ends.***

Design to be amended or a fire engineered performance solution required to retain the exits in its current configuration. Compliance achievable.

4. Distances between Alternative Exits (D2D6)

Exits that are required as alternative means of egress must be—

- a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and
- b) not less than 9 m apart; and
- c) not more than—
in a Class 2 or 3 building — 45 m apart; or
in all other cases — 60 m apart; and
- d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.

Does not comply on:

All tower fire stair travel distance between alternative exits is 8m in lieu of 9m min contrary to D2D6.

Basement Levels 1 to 6

- ***The distance between alternative exits is up to 70m in lieu of 60m.***



Design to be amended or a fire engineered performance solution required to retain the exits in its current configuration. Compliance achievable.

5. Dimensions to Exits and Paths of Travel to Exits (D2D8, D2D9)

Widths of exits and corridors must be sufficient to provide safe passage for occupant egress. The unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1m. In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm. The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space, except where the width is increased in accordance with D2D8(1)(b) or D2D9(a)(i).

Designers to ensure all plant and equipment is laid such that a 1m clear egress width is available.

Egress pathways in the carparking area on Lower & Upper Ground floor do not comply as egress in some locations is less than 1m. A fire engineered performance solution will be required where the clear 1m egress width is not achieved. Compliance is achievable and to be detailed as the design progresses.

6. Travel via Fire-isolated Exits (D2D12)

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 public corridor, public lobby or the like; or a sole-occupancy unit occupying all of a storey.

Compliance is achievable and to be detailed as the design progresses.

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 to a road or open space. *Complies for basement levels.*

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:

That part of the wall must have— (a) an FRL of not less than 60/60/60; and (i) any openings protected internally in accordance with C4D5; and (ii) The protection required by (a) must extend for a distance of 3 m above or below, as appropriate, the level of the (b) path of travel, or for the height of the wall, whichever is the lesser.

We note a new external stair beside the entry driveway introduced in Cottonwood Road to address this issue.

7. Discharge from Exits (D2D15)

If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than the minimum width of the required exit; or 1 m, whichever is the greater.

The discharge point of alternative exits must be located as far apart as practical. ***Cottonwood Tower fire stairs discharge beside each at upper ground floor contrary to Clause D2D15(4). Performance solution required at CC Stage.***

If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D4.

Compliance is achievable and to be detailed as the design progresses.

8. Separation of rising and descending stair flights (D3D5)

If a stairway serving as an exit is required to be fire-isolated—



- (a) there must be no direct connection between—
 - (i) a flight rising from a storey below the lowest level of access to a road or open space; and
 - (ii) a flight descending from a storey above that level; and
- (b) any construction that separates or is common to the rising and descending flights must be—
 - (i) non-combustible; and
 - (ii) smoke proof in accordance with S11C2.

Compliance is achievable and to be detailed as the design progresses.

9. Installations in exits and paths of travel (D3D8)

Access to service shafts and services other than to fire-fighting or detection equipment as permitted in the Deemed-to-Satisfy Provisions of Section E, must not be provided from a fire-isolated stairway, fire-isolated passageway. Services or equipment in accordance with D3D8, may be installed in any corridor, hallway, lobby or the like leading to a required exit if the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure. *Compliance is achievable and to be detailed as the design progresses.*

10. Enclosure of space under stairs and ramps (D3D9)

Fire-isolated stairways and ramps — the space below a required fire-isolated stairway or fire-isolated ramp within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space. *Compliance is achievable and to be detailed as the design progresses.*

11. Barriers to Prevent Falls and Handrails

A continuous barrier must be provided along the side of a floor / mezzanine if the trafficable surface is 1m or more above the surface beneath. For floors more than 4 m above the surface beneath, the barrier must not feature any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing. Handrails to be located along the full length on at least one side of the flight of fire-isolated stairs with the top surface to be a minimum height of 865mm measured vertically above the nosings of the stair treads. *Architect to note. Compliance is achievable and to be detailed as the design progresses.*

12. Swinging Doors (D3D25)

A swinging door in a required exit or forming part of a required exit must swing in the direction of egress and must not otherwise impede the path or direction of egress. *Architect to note. Compliance is achievable and to be detailed as the design progresses.*

13. Re-entry from fire-isolated exits (D3D27)

Doors of a fire-isolated exit must not be locked from the inside as follows:

- (a) In a Class 9a health-care building.
- (b) In a Class 9b early childhood centre.
- (c) In a Class 9c building.
- (d) In a fire-isolated exit serving any storey above an effective height of 25 m, throughout the exit.

Compliance is achievable and to be detailed as the design progresses.

14. Protection of Openable Windows (D3D29)

A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in a bedroom in a Class 2 building. Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by must comply with the following:



The openable portion of the window must be protected with—

- a) a device capable of restricting the window opening to less than 125mm; or
- b) a screen with secure fittings.

Compliance is achievable and to be detailed as the design progresses.

15. Access for People with a Disability (D4) – refer to Access Consultants comments and report.

A swimming pool is noted on Level 4. It has a perimeter of 62m in which case an accessible entry / exit must be by means of—

- (a) a fixed or movable ramp and an aquatic wheelchair; or
- (b) a zero depth entry and an aquatic wheelchair; or
- (c) a platform swimming pool lift and an aquatic wheelchair; or
- (d) a sling-style swimming pool lift.

Compliance is achievable and to be detailed as the design progresses.

3.4 Part E – Services and Equipment

1. Fire Fighting Equipment (E1)

Fire Hydrants – The building must be served with fire hydrants complying with the requirements of BCA Clause E1D2 and AS 2419.1-2021. Fire hydrants are to be located inside the fire isolated stairs. *The pumproom is required to open directly to open space / road or an airlock that leads to a fire-isolated stair. Compliance is achievable and to be detailed as the design progresses.*

Fire Hose Reels – The basement levels, Lower & upper ground, Level 1 to 3 is to be served with fire hose reels complying with AS 2441-2005. They may serve only the storey at which they are located and not pass through doorways fitted with fire doors. Hose-reels are to be located within 4m of an exit or an internal fire hydrant, but not inside the fire isolated stair. *Compliance is achievable and to be detailed as the design progresses.*

Sprinklers – Must be provided in accordance with Specification 17 and AS2118.1-2017 throughout the building. *Compliance is achievable and to be detailed as the design progresses.*

Portable Fire Extinguishers – Must be provided to serve the building where one or more internal fire hydrants are installed. Portable fire extinguishers provided in a Class 2 building must be distributed outside a sole-occupancy unit to serve only the storey at which they are located; and so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m. *Compliance is achievable and to be detailed as the design progresses.*

Fire Control Centres - A fire control centre facility in accordance with Specification 19 must be provided for a building with an effective height of more than 25 m; and a Class 6, 7, 8 or 9 building with a total floor area of more than 18 000 m². *The location and size of the Fire Control Room complies – fitout compliance is achievable and to be detailed as the design progresses.*

2. Part E2 – Smoke Hazard Management

The building must comply with E2 as applicable to Class 2-9 buildings such that each separate part complies with the relevant provisions for the classification.

An automatic air pressurisation system for the fire-isolated exits in accordance with AS 1668.1 is required where it serves more than 2 below ground storeys, not counted in the rise in storeys in accordance with C2D3 and any building exceeding 25m in effective height. *This applies to the two basement level fire isolated stairs and the tower fire stairs.*

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.



In a Class 2 building or part of a building must be provided with an automatic smoke detection and alarm system complying with Specification 20.

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.

Compliance is achievable and to be detailed as the design progresses.

3. Part E3 – Lift Installations

An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24.

At least once emergency lift must be provided in a building which has an effective height of more than 25m.

A stretcher facility must be provided if passenger lifts are installed to serve any storey above an effective height of 12 m, in at least one of those lifts to serve each floor served by the lifts. 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. Access and egress to and from lift well landings must comply with Parts D2, D3 and D4. The passenger lift must have accessible features in accordance with E3D8 and not rely on constant pressure device for its operation. *Compliance is achievable and to be detailed as the design progresses.*

4. Part E4 – Emergency Lighting, Exit Signs and Warning Systems

Exit and Emergency Lighting

Must be provided throughout in accordance with AS2293.1-2018 and BCA E4. *Compliance is achievable and to be detailed as the design progresses.*

Emergency warning and intercom systems

Must be provided throughout in accordance with AS 1670.4-2018 and BCA E4 *Compliance is achievable and to be detailed as the design progresses.*

3.5 Part F – Health and Amenity

1. Surface Water Management, Rising Damp and External Waterproofing (Part F1)

Stormwater drainage is to comply with F1D3 and AS/NZS 3500.3. Waterproofing membranes for external above ground use must comply with F1D5, AS 4654.1 and AS 4654.2. Roof coverings must comply with F3D2. Sarking for weatherproofing of roofs and walls must comply with F3D3 and AS/NZS 4200 Parts 1 and 2. Sanitary compartments must be water resistant or waterproof in accordance with Specification 26 and comply with AS 3740. Damp-proofing of the flooring is to comply with F1D6 and F1D7. Glazed assemblies in an external wall must comply with F3D4 and AS 2047. *Compliance is achievable and to be detailed as the design progresses.*

2. Wet Area and Overflow Protection (F2)

In a Class 2 building, wet areas must be water resistant or waterproof in accordance with Specification 26; and comply with AS 3740.

Where a floor waste is installed—
the minimum continuous fall of a floor plane to the waste must be 1:80; and
the maximum continuous fall of a floor plane to the waste must be 1:50.



Compliance is achievable and to be detailed as the design progresses.

3. Roof and Wall Cladding (F3)

A roof must be covered with roof tiles complying with AS 2049, fixed in accordance with AS 2050, metal sheet roofing complying with AS 1562.1, an external waterproofing membrane complying with F1D5.

Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1 and AS 4200.2.

External wall cladding must comply with one or a combination of the following:

- a) Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700.
- b) Autoclaved aerated concrete: AS 5146.3.
- c) Metal wall cladding: AS 1562.1.

A weatherproofing performance solution will be required where the external wall cladding is not as per above. Compliance is achievable and to be detailed as the design progresses.

4. Facilities in Residential Building (F4)

Within each sole-occupancy unit the following facilities are required —

- 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
- d) a washbasin.

Complies as currently shown.

In each sole-occupancy unit the following laundry facilities are required —

- a) clothes washing facilities, comprising at least one washtub and a space for a washing machine; and
- b) clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line, or space for one heat operated drying cabinet or appliance in the same room as the clothes washing facilities.

Compliance is achievable and to be detailed as the design progresses.

5. Height of rooms and other spaces (F5)

The height of rooms and other spaces in a Class 2 must be not less than—

- a) for a kitchen, laundry, or the like — 2.1 m; and
- b) for a corridor, passageway or the like — 2.1 m; and
- c) for a habitable room excluding a kitchen — 2.4 m; and

The height of rooms and other spaces in a Class 5, 6, 7 or 8 building must be not less than

- (a) except as allowed in (b) - 2.4 m; and
- (b) for a corridor, passageway, or the like — 2.1 m.
- (c) for a bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and
- (d) For a commercial kitchen — 2.4 m
- (e) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads for the floor surface of the ramp, landing or the like;

Compliance is achievable and to be detailed as the design progresses.

6. Lighting & Ventilation (F6)

- i. Natural light must be provided in a Class 2 building - to all habitable rooms.



- ii. The artificial lighting system must comply with AS/NZS 1680.0.
- iii. Mechanical ventilation or air-conditioning system complying with AS1668.2 is required to all areas not provided with natural ventilation.

Compliance is achievable and to be detailed as the design progresses.

7. Sound Transmission and Insulation (Part F7)

Floors and walls and internal services to be sound insulated in accordance with Part F7. Pumps to be isolated in accordance with F7D8.

Compliance is achievable and to be detailed as the design progresses.

8. Condensation Management (Part F8)

An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate:

- a) 25 L/s for a bathroom or sanitary compartment; and
- b) 40 L/s for a kitchen or laundry.

Where space for clothes drying appliance is provided in accordance with F4D2(1)(b), space must also be provided for ducting from the clothes drying appliance to outdoor air, unless a condensing-type clothes drying appliance is installed.

An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with F6D7 must—

- a) be interlocked with the room's light switch; and
- b) include a run-on timer so that the exhaust system continues to operate for 10 minutes after the light switch is turned off.

Except for rooms that are ventilated in accordance with F6D7, a room with space for ducting a clothes drying appliance to outdoor air in accordance with (3) must be provided with make-up air in accordance with AS 1668.2.

Compliance is achievable and to be detailed as the design progresses.

9. Provision for Cleaning Windows (NSW G1D5) –

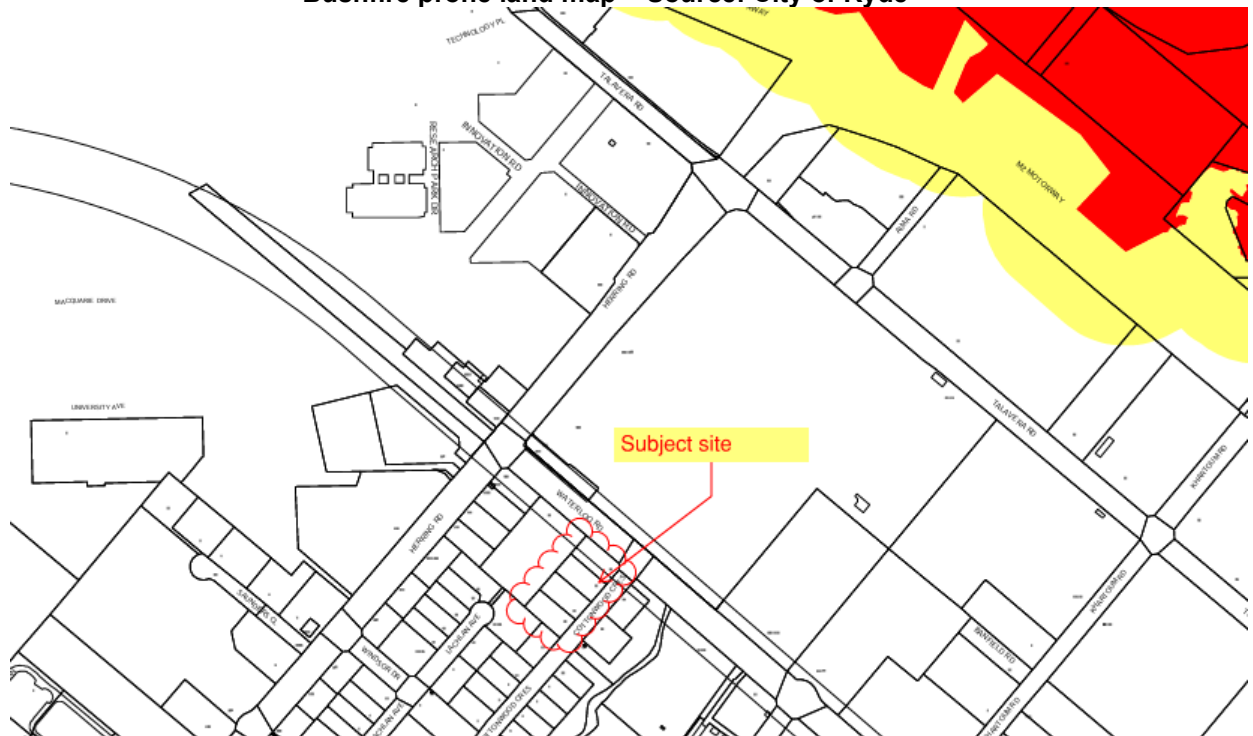
- i. A building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level.
- ii. A building satisfies the above where—
 - the windows can be cleaned wholly from within the building; or
 - provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.

Compliance is achievable and to be detailed as the design progresses.

10. Bushfire Zone (NSW G5) – applicable to Class 2 buildings, however the land in this case is not in a bushfire prone area (information from Ryde Council Bushfire Prone Land map) .



Bushfire prone land map – Source: City of Ryde



3.7 Part J – Energy Efficiency

The Deemed-to-Satisfy Provisions of this Part J3 apply to building elements forming the external building fabric of a sole-occupancy unit of a Class 2 building. Part J5 apply to elements forming the envelope of a Class 2 building.

NSW J4D3 applies to building elements forming the envelope of a sole-occupancy unit in a Class 2 building. This only applies to thermal insulation in a sole-occupancy unit in a Class 2 building and a Class 4 part of a building where a development consent specifies that the insulation is to be provided as part of the development.

For a Class 2 building, compliance with the BASIX certificate is required.

Specialist consultant advice will be required to ensure compliance with the relevant sections of the BCA.

Compliance is achievable and to be detailed as the design progresses.

4.0 Conclusion

We have assessed the proposed design to date and have reviewed the scheme with respect to the Building Code of Australia 2022 Amendment 2. The design is at a point where the inherent BCA philosophies have been assessed and the design is considered capable of meeting a combination of the DTS and Performance requirements of the Building Code of Australia.



5.0 Appendix A

Specification 5 Type A Construction

Building element	Class of building-FRL: (in minutes)			
	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is-				
For loadbearing parts				
Less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/60	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90
For non-loadbearing parts				
Less than 1.5m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3m	-/60/60	-/90/90	-/180/120	-/240/180
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire-source feature to which it is exposed is-				
Less than 3m	90/-/-	120/-/-	180/-/-	240/-/-
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
COMMON WALLS and FIRE WALLS-	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS				
Fire- resisting lift and stair shafts-				
Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120
Non-loadbearing	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion				
Loadbearing	90/90/90	120/90/90	180/120/120	240/120/120
Non-loadbearing	-/90/90	-/90/90	-/120/120	-/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS-				
FLOORS	90/90/90	120/120/120	180/180/180	240/240/240
ROOFS	90/60/30	120/60/30	180/60/30	240/90/60