

19 December 2019

Our Ref: 190483

Castle 240 Pty Ltd

Po Box 135
CROWS NEST NSW 1585

steven@novati.com.au

Dear Steven,

**BUILDING CODE OF AUSTRALIA ASSESSMENT
30 FAIRLIGHT STREET, FAIRLIGHT**

We have assessed the architectural plans for the construction of a new 5 storey residential building containing 4 residential levels comprising 7 residential units above a common carpark at the above-mentioned premises for compliance with the Building Code of Australia (BCA) 2019. The following BCA comments associated with the proposed building work have been provided.

1. INTRODUCTION

1.1. General

The premises subject to this report is located at 30 Fairlight Street, Fairlight. The proposal is for the construction of a residential building containing 7 residential units and common carpark.

The subject property is located within the local government area of the Northern Beaches Council.

1.2. Description

The building contains 5 storeys and consists of:

| | |
|-------------------|-------------|
| Basement Floor | Carpark |
| Ground to level 2 | Residential |

1.3. Purpose of the Report

This report has been prepared, on behalf of Castle 240 Pty Ltd, to establish compliance to the Building Code of Australia and relevant Acts and Regulations of the development application documentation for the proposed works

1.4. Report Basis

This report is based on:

- a. Architectural plans prepared by Bianchino Associates, as identified in the attached Appendix 1
- b. The Building Code of Australia 2019 inclusive of NSW variations (See Note 1).
- c. Environmental Planning and Assessment Act 1979.
- d. Environmental Planning and Assessment Regulation 2000.

Notes (1) Building Code of Australia (BCA) 2019 was adopted in NSW on 1 May 2019. The amendment of the BCA in force at the date of lodgement of the Construction Certificate application is the version called up by Clause 98 of the Environmental Planning & Assessment Regulation 2000 for the purpose of the building design. Therefore, comments may be subject to changes to comply with updated versions of the Building Code of Australia.

1.5. Exclusions

- This report: has been prepared by City Plan for Castle 240 Pty Ltd and may only be used and relied on by Castle 240 Pty Ltd for the purpose agreed between City Plan and Castle 240 Pty Ltd.
- City Plan otherwise disclaims responsibility to any person other than Castle 240 Pty Ltd arising in connection with this report. City Plan also excludes implied warranties and conditions, to the extent legally permissible.
- City Plan Services Pty Ltd undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document.
- The services undertaken by City Plan in connection with preparing this report are limited to those specifically detailed within the report and subject to scope limitations as set out in the report but specifically exclude;
 - Structural design in any form or content.
 - The Disability Discrimination Act 1992.
 - Disability (Access to Premises – Building) Standards 2010.
 - The operational capabilities or compliance of proposed services within the building.
 - Assessment of any proposed Performance Solutions.
- This report is not a Part 4A compliance certificate under the Environmental Planning & Assessment Act 1979 or Regulation 2000.
- The opinions, conclusions and any recommendations within this report are based on conditions encountered and information reviewed at the date of preparation of the report. City Plan has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.
- The methodologies adopted within this report specifically relate to the subject building and must not be used for any other purpose.
- City Plan has prepared this report on the basis of information provided by others. City Plan has not independently verified or checked beyond the agreed scope of work the validity of the documentation prepared and provided by others. City Plan accepts no liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions within the information relied upon.
- The documentation relied upon has been reviewed only to the degree reasonable as pertaining to City Plans scope, as defined within the contract and fee agreement. It is expressly not City Plans responsibility to,
 - Familiarise ourselves with all information and documentation relating to the project, or the potential BCA, Access or fire safety aspect derivatives thereof,
 - Conduct a “full BCA audit or compliance assessment” in any way defined, implied or assumed, for matters outside of City Plans scope.
 - Prepare a holistic BCA, Access or Fire Safety strategy for the building or carry out a full assessment of all information and documentation relating to the project, or the potential BCA, Access or Fire Safety aspect derivatives thereof.

2. BUILDING DESCRIPTION

- 2.1. The building classification relevant to the proposed use is Class 2 and 7a.
- 2.2. The building has an effective height of 11.88m.
- 2.3. The required type of construction under C1.1 of the BCA is Type A. This is the most resistant type of construction required by the BCA.
- 2.4. The building has a rise in storeys of 5.
- 2.5. The proposed fire safety schedule is provided in Appendix 2.

3. STRUCTURAL PROVISIONS

- 3.1. The structural elements and forms of construction are required to be designed in accordance with Section B of the BCA and the relevant standards.
- 3.2. A Structural Engineers Certificate will be required at Construction Certificate application stage certifying that the existing building can support the proposed loads.
- 3.3. Termite risk management is required in accordance Clause B1.4(i) and AS 3660.1-2014.
- 3.4. If the site is in a Flood Hazard Area, as defined by the BCA, the building must be designed in accordance with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.

4. FIRE RESISTANCE

- 4.1. The fire resistance of building elements is to be in accordance with BCA Specification C1.1 as relevant to Type A construction. The following Fire Resistant Levels are typically required:

Residential - 90 minute construction

Carpark - 120 minute construction

- 4.2. Internal loadbearing walls must be concrete or masonry.
- 4.3. Lightweight fire resisting construction is to comply with BCA C1.8.
- 4.4. The following building elements and their components are required to be non-combustible as required by C1.9 of the BCA:
 - a. External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.
 - b. The proposed metal cladding must be non-combustible when tested to AS1530.1-1994. Details demonstrating compliance are to be provided at the construction certificate stage of the development.

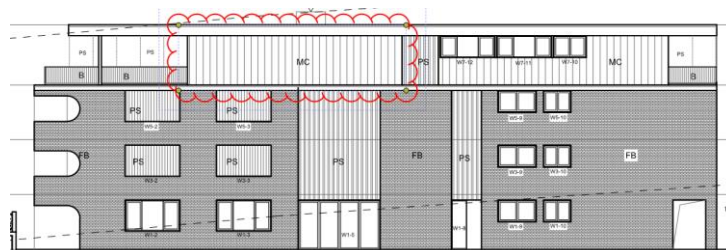


Figure 1 - Proposed Metal cladding

- c. The flooring and floor framing of lift pits.
 - d. Non-loadbearing internal walls where they are required to be fire-resisting.
- 4.5. Fire Hazard properties of internal linings, materials or assemblies used in the building are required to comply with C1.10 and Specification C1.10 of the BCA.
- 4.6. An ancillary element 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 except where permitted under C1.14 of the BCA. Construction plans are to demonstrate compliance.
- 4.7. Vertical separation of openings in the external wall are required to comply with C2.6 of the BCA. Spandrels are generally provided where required however the glazing of the Northern and Southern openings are located less than 450mm from the edge of the balcony providing the horizontal spandrel from the openings beneath (example shown in figure 2 below) and does not comply. The windows are required to be set back 450mm from the edge of the building or the balcony balustrades would need to form the vertical spandrel and achieve an FRL of 60/60/60.

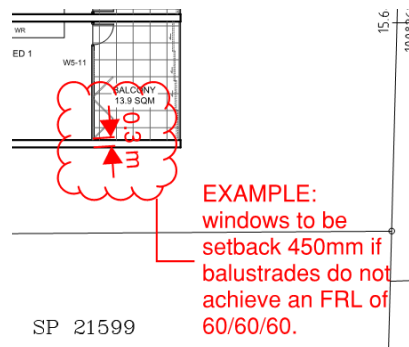


Figure 2 - Spandrel separation

- 4.8. The eastern wall of the basement carpark does not extend the full width of the basement and creates an opening at the driveway entry which requires protection under C3.2 of the BCA as its located less than 3m from the allotment boundary as indicated below. The opening is required to be protected in accordance with C3.4 of the BCA, the wall extended to provide compliant fire separation or the opening justified via a fire engineered **performance solution**.

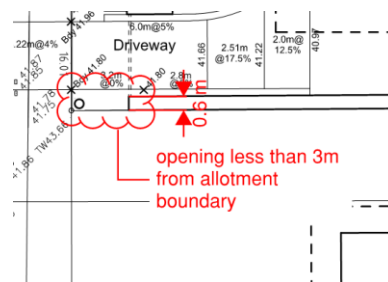


Figure 3 - Exposure to allotment boundary

- 4.9. The openings to the required fire isolated lift are required to be protected with -/60/- fire doors in accordance with C3.10 of the BCA.
- 4.10. Stairways and lifts are not permitted to be located within the same shaft under the requirements of C2.11. The lift is currently accessed and connected directly within the fire isolated stair/ shaft as the fire stair and the required fire isolated passageway required to connect the stairway passageway on the basement level outlined in figure 3 and does not comply. The design is required to be addressed via a fire engineered **performance solution**.

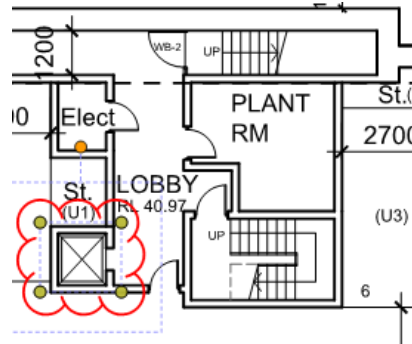


Figure 4 - Lift within fire stair

- 4.11. Doors to the central fire isolated stair are required to be self-closing -/60/30 fire doors as required by C3.8 of the BCA.
- 4.12. The plant room and electrical rooms on the basement are required to be separated from the fire stair / passageway with construction achieving an FRL of 90/90/90 with doorways protected with -/60/30 self-closing fire doors. Also refer to D1.7 below.

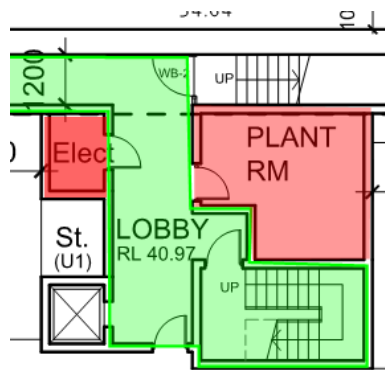


Figure 5

- 4.13. The required fire isolated passageway connecting the central fire stair and the street is only permitted to be penetrated by limited services under the requirements of C3.9 and D2.7 of the BCA. The passageway also has strict combustibility requirements for all floor, wall and ceiling linings and C1.10 of the BCA. The proposed entry to the residential building is doubling as the fire isolated passageway and will not achieve strict compliance, for example, the proposed chair lift is not a service permitted within the fire stair / passageway. The proposed configuration is required to be addressed via a fire engineered **performance solution**.

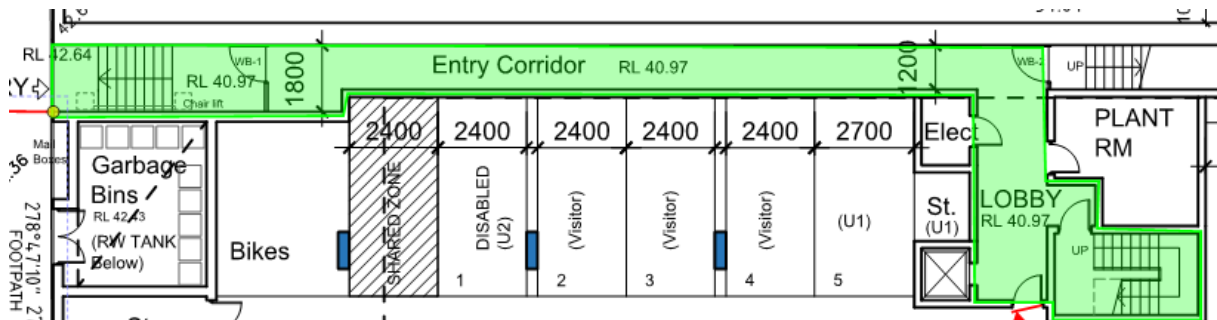


Figure 6

- 4.14. Entry doorways to the residential sole occupancy units are required to be protected with -/60/30 self-closing fire doors under the requirements of C3.11 of the BCA.
- 4.15. Openings for service penetrations in fire rated building elements are to be fire stopped/protected in accordance with BCA Clause C3.15.

5. ACCESS AND EGRESS

- 5.1. The number of exits provided complies.
- 5.2. The central stairway connects 5 storeys and is required to be fire-isolated under the requirement is D1.3 of the BCA. The stairway is capable of complying however the passageway connecting the stair contains a number of non-compliances which will require a performance solution (refer to above and below as applicable).
- 5.3. The discharge of alternative exits on the carpark discharge are located less than 9m apart and does not comply with D1.5 of the BCA as indicated below. Design modification is required or a fire engineered **performance solution** would be required.

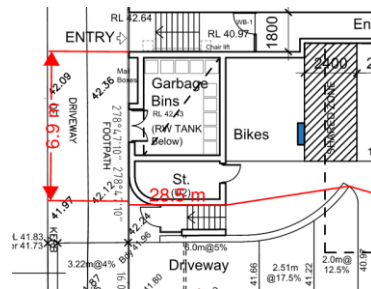


Figure 7

- 5.4. The dimensions of exits and paths of travel are capable of complying.
- 5.5. A room is not permitted to open directly into a fire isolated passageway unless via an airlock or the like under the requirements of D1.7 of the BCA. The plantroom and electrical room on the basement open directly into the fire isolated passageway and does not comply. Access is to be modified or the direct access is required to be justified via a fire engineered **performance solution**.
- 5.6. The discharge of fire isolated exits / passageways is required to discharge directly to open space or within an area that's located less than 6m from open space with a floor to ceiling height of not less than 3m and the area is open for not less than 1/3 of its perimeter under D1.7 of the BCA. The proposed fire stair / passageway discharges into the entry alcove which is not open for 1/3 of its perimeter and does not achieve a floor to ceiling height of 3m and is required to be justified by a fire engineered **performance solution**.

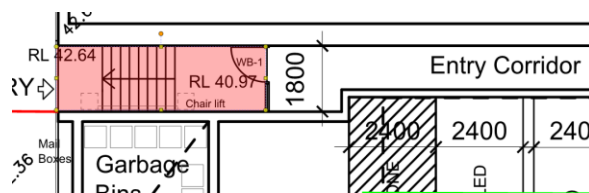


Figure 8 – Fire stair discharge

- 5.7. Access to an exit must have suitable barriers to prevent vehicles from blocking the exit to achieve compliance with D1.10 of the BCA. Access to the basement fire stair needs to be

protected with bollards or the like to achieve compliance with D1.10 as illustrated below in figure 9. Details are to be included within the Construction Certificate documentation.

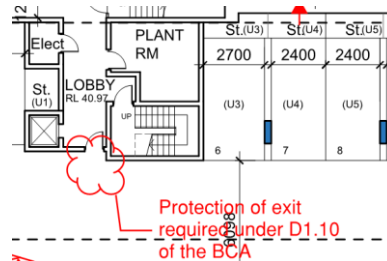


Figure 9

- 5.8. Installations in exits and paths of travel are to comply with BCA D2.7.
- 5.9. Goings and risers of stairways are required to be designed to comply with D2.13 of the BCA, including slip resistance requirements.
- 5.10. Landings of stairways and ramps must comply with BCA D2.14, including slip resistance requirements.
- 5.11. Thresholds at doorways are to comply with BCA D2.15.
- 5.12. Barriers to prevent falls are to be provided in accordance with BCA D2.16.
- 5.13. Handrails are to be provided to stairs and ramps in accordance with BCA D2.17. Handrails must comply with Clause 12 of AS1428.1-2009 Amdt 1. Handrails are not fully documented, and full details are to be included within the construction certificate documentation.
- 5.14. Door hardware is to comply with BCA D2.21.
- 5.15. Fall protection from openable windows is to be provided in accordance with BCA D2.24.
- 5.16. Access for people with disabilities is required in accordance with Part D3 & AS1428.1-2009 Amdt 1&2. Refer to separate access report.
- 5.17. Braille and tactile signage is to be provided to exit doors in accordance with D3.6.
- 5.18. Tactile indicators are required to the stairs (excluding fire isolated exits) in accordance with BCA D3.8 and sections 1 & 2 of AS/NZS 1428.4.1-2009 Amdt 1 & 2. Handrails are not fully documented and full details are to be included within the construction certificate documentation.

6. SERVICES AND EQUIPMENT

- 6.1. The building is required to be served by a hydrant system in accordance with BCA Clause E1.3 and AS2419.1-2005 Amdt 1. The architectural plans do not currently document the proposed location of the required hydrant booster. In addition, depending on the water pressures, a hydrant pump room may be required which will impact the design.
- 6.2. Fire hose reels are required to be provided within the carpark in accordance with BCA E1.4 & AS 2441-2005 Amdt 1. Hose reels are not currently documented and are to be incorporated into the construction documentation.
- 6.3. The building is required to be protected by a sprinkler system in accordance with BCA E1.5. As a residential building, the design is required to comply with Clause E1.5, Spec E1.5 & Spec E1.5a of the BCA and either AS 2118.4-2012 or FPAA101H-2018 or FPAA101D-2018.

Depending on the selected system, Specification E1.5a contains some building concessions that can be implemented to offset this new requirements. Sprinkler protection of residential buildings under an effective height of 25m was introduced into the BCA 2019.

- 6.4. Portable fire extinguishers must be provided in accordance with BCA clause E1.6 and AS2444-2001.
- 6.5. The following smoke hazard management systems are required:
 - e. Smoke detection and alarm system in accordance with BCA E2.2, Specification E2.2a and AS1670.1-2018 and AS3786-2014.
 - f. Building Occupant warning system in a accordance with BCA Spec E2.2a and AS1670.4-2018.
 - g. Monitoring of smoke the sprinkler system in accordance with AS1670.3-2018 is more than 100 sprinkler heads are proposed to be located within the building (unlikely).
- 6.6. Lifts are required to be designed in accordance with BCA Part E3, in particular:
 - a. Compliance with Specification E3.1
 - b. Stretcher facility accordance with BCA E3.2
 - c. Warning signs in accordance with BCA E3.3
 - d. Emergency lifts in accordance with BCA E3.4
 - e. Accessible lift types and features for people with disability requirements of BCA E3.6
 - f. Fire service controls in accordance with BCA E3.7, E3.9 & E3.10.
- 6.7. Emergency lighting and exit signs must be provided in accordance with BCA Part E4 & AS 2293.1-2018. As required by BCA G6.8, a reference to a storey or room in BCA Part E4 includes an occupiable outdoor area.

7. HEALTH & AMENITY

- 7.1. The external walls (except for wall to carpark) must prevent the penetration of water that could cause—
 - a. unhealthy or dangerous conditions, or loss of amenity for occupants; and
 - b. undue dampness or deterioration of building elements
- 7.2. Stormwater drainage must comply with AS/NZS 3500.3-2018.
- 7.3. Waterproofing membranes for external above ground use must comply with AS 4654.1-2012 & AS 4654.2 -2012.
- 7.4. Roof coverings must comply with BCA F1.7.
- 7.5. Sparking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200.1-1994 Amdt 1 & AS/NZS 4200.2-1994.
- 7.6. Waterproofing of wet areas must comply with BCA F1.7 & AS 3740-2010 Amdt 1.
- 7.7. Damp-proofing of walls is required to prevent rising damp in accordance with BCA clause F1.9.
- 7.8. Damp-proofing of floors on ground is required (except for carpark) to prevent moisture from the ground from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870-2011.

- 7.9. Floor wastes are required to all bathrooms and laundries as required by BCA F1.11.
- 7.10. Glazed assemblies are to comply with BCA F1.13 & AS 2047-2014 Amdt 1 &2 for the resistance of water penetration.
- 7.11. Where sanitary compartment doors swing into the sanitary compartment room and the hinge side of the door is less than 1.2 m from the WC pan, lift off hinges are required to the door (BCA F2.5(b)).

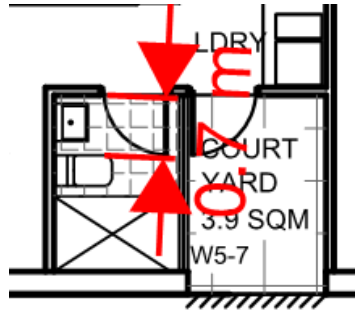


Figure 10 – Example of door swing located less than 1.2 from pan

- 7.12. The ceiling heights complies with BCA F3.1.
- 7.13. Natural light complies with BCA F4.
- 7.14. Artificial lighting is required to be provided in accordance with BCA Clause F4.4 and AS/NZS 1680.0- 2009.
- 7.15. Rooms not provided with natural ventilation in accordance with BCA Clause F4.6, are required to be ventilated in accordance with AS1668.2-2012 Amdt 1.
- 7.16. The carpark must be provided with AS 1668.2-2012 Amdt 1 & 2 mechanical ventilation or AS1668.4-2012 Section 4 natural ventilation.
- 7.17. Sound transmission and insulation provisions are required in accordance with BCA Part F5. Full construction details from a qualified acoustic engineer will be required at the construction certificate stage.

8. ANCILLARY PROVISIONS

- 8.1. The proposed spa the penthouse apartment is required to be installed in accordance with BCA G1.1, AS1926.1-2012 and the NSW Swimming Pools Act 1992 and Regulations 2018.

9. ENERGY EFFICIENCY

- 9.1. The Class 2 building must be designed in accordance with energy efficiency measures as outlined the NSW variation of the BCA Part J(A). The design is to be subject to a separate Section J energy report, however the building is required to comply with the following general provisions;
 - a. BASIX requirements
 - b. Building fabric including insulation (BCA Part J(A)1)
 - c. Building sealing (BCA Part J(A)2)
 - d. Air conditioning and ventilating systems (BCA Part J(A)3)
 - e. Heated water supply (BCA Part J(A)4)

- f. Facilities for energy monitoring (BCA Part J(A)5)

10. CONCLUSION

The design as proposed is capable of complying with the Building Code of Australia and will be subject to construction documentation that will provide appropriate details to demonstrate compliance. This report has identified areas of non-compliance with the deemed-to-satisfy provisions and indicates the design intent to modify the design or demonstrate compliance with the Performance Requirements of the BCA. Whilst the performance-based solutions are to be design developed, it is my view that the solutions will not impact on the current design.

Should you need to discuss any issues, please do not hesitate to contact the undersigned on 8270-3500.

Yours Faithfully / Sincerely,

A handwritten signature in black ink, appearing to read 'Adam DeLooze'.

Adam DeLooze
A1 Accredited Certifier – BPB 0085

APPENDIX 1

Assessed plans prepared by Bianchino Associates.

| Plan Title | Drawing No | Revision | Date |
|--|--------------|----------|----------|
| Existing Site Plan & Site Analysis Plan | 2019-01-DA01 | P8 | 12/11/19 |
| Demolition Plan | 2019-01-DA02 | P8 | 12/11/19 |
| Proposed Site Plan & Roof Plan | 2019-01-DA03 | P8 | 12/11/19 |
| Basement Floor Plan | 2019-01-DA04 | P8 | 19/11/19 |
| Ground Floor Plan | 2019-01-DA05 | P8 | 19/11/19 |
| Level 1 Floor Plan | 2019-01-DA06 | P8 | 12/11/19 |
| Level 2 Floor Plan | 2019-01-DA07 | P8 | 12/11/19 |
| Level 3 Floor Plan | 2019-01-DA08 | P8 | 12/11/19 |
| East & West Elevations | 2019-01-DA09 | P8 | 19/11/19 |
| South & North Elevations & Sections A-A | 2019-01-DA10 | P8 | 19/11/19 |
| Section B-B & Post Adapt Unit Layout (U1) | 2019-01-DA11 | P8 | 19/11/19 |
| Enlarged Driveway Plan & Driveway Sections | 2019-01-DA12 | P8 | 19/11/19 |
| Shadow Diagram – 21 st June – 9AM | 2019-01-DA13 | P1 | 25/10/19 |
| Shadow Diagram – 21 st June – 12 Noon | 2019-01-DA14 | P1 | 25/10/19 |
| Shadow Diagram – 21 st June – 3PM | 2019-01-DA15 | P1 | 25/10/19 |

APPENDIX 2

Fire Safety Schedule

The following table is a list of the required fire safety measures for this development. This list is to be treated as a guide as to what the buildings are considered to require

| NO | FIRE SAFETY MEASURES (AS SET OUT UNDER CLAUSE 166 OF EP&A ACT REGULATIONS) | STANDARD OF PERFORMANCE |
|-----|---|--|
| 1. | Access panels, doors & hoppers to fire resisting shaft | BCA 2019 C3.13 & AS 1905.1-2015 <small>Amdt 1</small> |
| 2. | Automatic fire detection and alarm system | BCA 2019 E2.2, Spec E2.2a Clause 3 (smoke alarm system) & AS 1670.1-2018 or AS 3786-2014 <small>Amdt 1 & 2</small> |
| 3. | Automatic fire suppression system (Residential) | BCA 2019 E1.5, Spec E1.5 & E1.5a or AS 2118.4-2012 or FPAA101H-2018 or FPAA101D-2018 |
| 4. | Building occupant warning system | BCA 2019 Spec E2.2a (Clause 7) & AS1670.1-2018 (Clause 3.22) |
| 5. | Emergency Lifts | BCA 2019 E3.4 |
| 6. | Emergency lighting | BCA 2019 Clause E4.2, E4.3, E4.4, E1.8, Spec E1.8 Clause 12 (Emergency lighting for fire control room) & AS 2293.1 – 2018 |
| 7. | Exit signs | BCA 2019 E4.5, E4.6, E4.8 Spec E4.8 & AS 2293.1- 2018 |
| 8. | Exit signs (non-illuminated) | BCA 2019 Clause E4.7 |
| 9. | Fire dampers | BCA 2019 C3.12, C3.15 & AS1668.1-2015 <small>Amdt 1</small> , AS 1668.2-2012 <small>Amdt 1 & 2</small> |
| 10. | Fire doors | C3.8 (openings in fire isolated exits), C3.11 (bounding construction) & AS 1905.1 – 2015 <small>Amdt 1</small> |
| 11. | Fire rated lift landing doors | BCA 2019 C3.10 & AS 1735.11-1986 |
| 12. | Fire Hose reel systems (carpark only) | BCA 2019 E1.4 & AS 2441-2005 <small>Amdt 1</small> |
| 13. | Fire hydrant systems | BCA 2019 E1.3 & AS 2419.1-2005 <small>Amdt 1</small> |
| 14. | Fire seals protecting openings in fire resisting components of the building | BCA 2019 C3.12, C3.15 & Spec C3.15, AS 4072.1-2005 <small>Amdt 1</small> , AS 1530.4.-2014 |
| 15. | Lightweight construction | BCA 2019 C1.8 & Spec C1.8 |
| 16. | Mechanical air handling system | Class 7a (carpark building mechanical ventilation systems) BCA 2019 E2.2, Table E2.2a and Clause 5.5 of AS 1668.1-2015 <small>Amdt 1</small> . |
| 17. | Portable fire extinguishers | BCA 2019 E1.6 & AS 2444-2001 |
| 18. | Smoke alarms & heat alarms | BCA 2019 E2.2, Spec E2.2a & AS 3786-2014 <small>Amdt 1 & 2</small> |
| 19. | Warning and operational signs | EPA Regulation 2000 (Clause 183), D2.23 (signs on exit doors) & E3.3 (lifts) |
| 20. | Fire Engineered | TBC |