



BCA



CREDWELL

BCA ASSESSMENT REPORT

ISSUED FOR DEVELOPMENT APPLICATION

Residential Flat Building

5 Adina Road, Curl Curl NSW 2096

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Document Control

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1 Introduction

1.1 Objectives

The purpose of this report is to provide an assessment against Volume One of the Building Code of Australia 2022 (BCA) addressing all relevant Deemed-to-Satisfy clauses therein.

The report will identify where the subject building achieves compliance and non-compliance with the BCA and provide instances where a Performance Solutions may be available. Any recommended Performance Solutions are required to be prepared under separate cover.

Part 3 'Assessment Summary' of this report outlines the identified compliance matters that require further information or consideration and/or assessment as a Performance Solution (to be prepared separately).

It is presumed the assumptions, content, and limitations of this report are reviewed, noted, and understood by the reader. Credwell Consulting are to be contacted to clarify any queries or assumptions made in relation to the contents of this report and further, Credwell Consulting take no responsibility for misinterpretation of any of the content herein.

1.2 Limitations

This report does not include, nor imply, any audit, assessment, or upgrading of:

1. The structural adequacy or design of the building;
2. The capacity or design of any electrical, fire, hydraulic or mechanical services;
3. The inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and
4. The Disability (Access to Premises – Building) Standards 2010 and the Disability Discrimination Act 1992 (Cth)

This report does not include, nor imply, any assessment of, or compliance with:

1. The National Construction Code – Plumbing Code of Australia Volume 3;
2. The Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to),
3. The provision of disabled access to the subject development, being any assessment of the Deemed-to-Satisfy provisions of Part D4, and Clauses E3D7, E3D8, F4D5, F4D6, F4D7, and F4D12, and Specifications 14, 15, 16, and 27;
4. Any Development Consent conditions;
5. The Liquor Act 2007;
6. The Work Health and Safety Act 2011;
7. The Swimming Pools Act 1992; and
8. Requirements of Authorities including, but not limited to, Fire and Rescue NSW, WorkCover, RMS, Council, Telecommunications Supply Authority, Electricity Supply Authority, Water Supply Authority, Gas Supply Authority and the like.
9. Requirements of BCA Section J.
10. The structural design of the building;
11. The design of any electrical, fire, hydraulic or mechanical services;
12. The inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to).

Interpretations

A number of matters within the BCA are known to be interpretive. Where these matters are encountered, interpretations have been used that are consistent with Credwell Consulting's understanding of standard industry practice.

Dimensions and Tolerances

In some instances, the BCA specifies minimum dimensions for construction. The assessment of plans and specifications includes a review of such minimum dimensions that are relevant to the project, but Credwell Consulting does not guarantee that all relevant minimum dimensions have been assessed where they are not clearly and explicitly denoted/marked on the architectural drawings.

The relevant designer(s) and builder(s) should confirm that all minimum dimensions are achievable on site prior to works and consideration/attention should be given to construction tolerances impacted by wall set outs, applied finishes, and skirtings to corridors and bathrooms. For example, tiling bed thickness on walls and floors can adversely impact critical minimum dimensions relating to access for people with disabilities, stair and corridor widths, and balustrade heights.

1.3 Reviewed documentation

This report is based on documentation referenced in Annexure A.

2 Proposed Development

2.1 Building location

The development, the subject of this report, is located at 5 Adina Road, Curl Curl NSW 2096.

The site adjoins a public road (Adina Road) to the north, and all other boundaries adjoin private properties. The site is understood to contain an existing dwelling building.

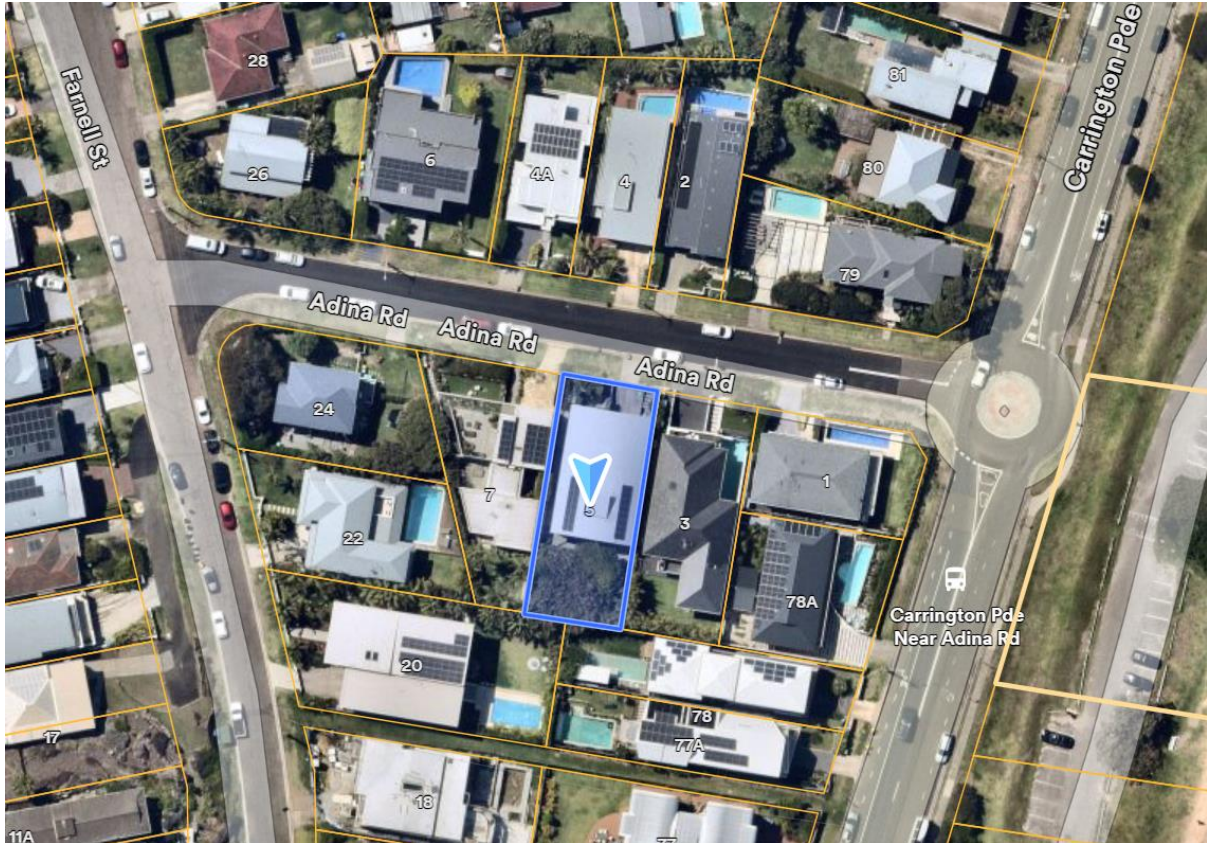


Figure 1 | Satellite image of the proposed site | Source: Nearmaps

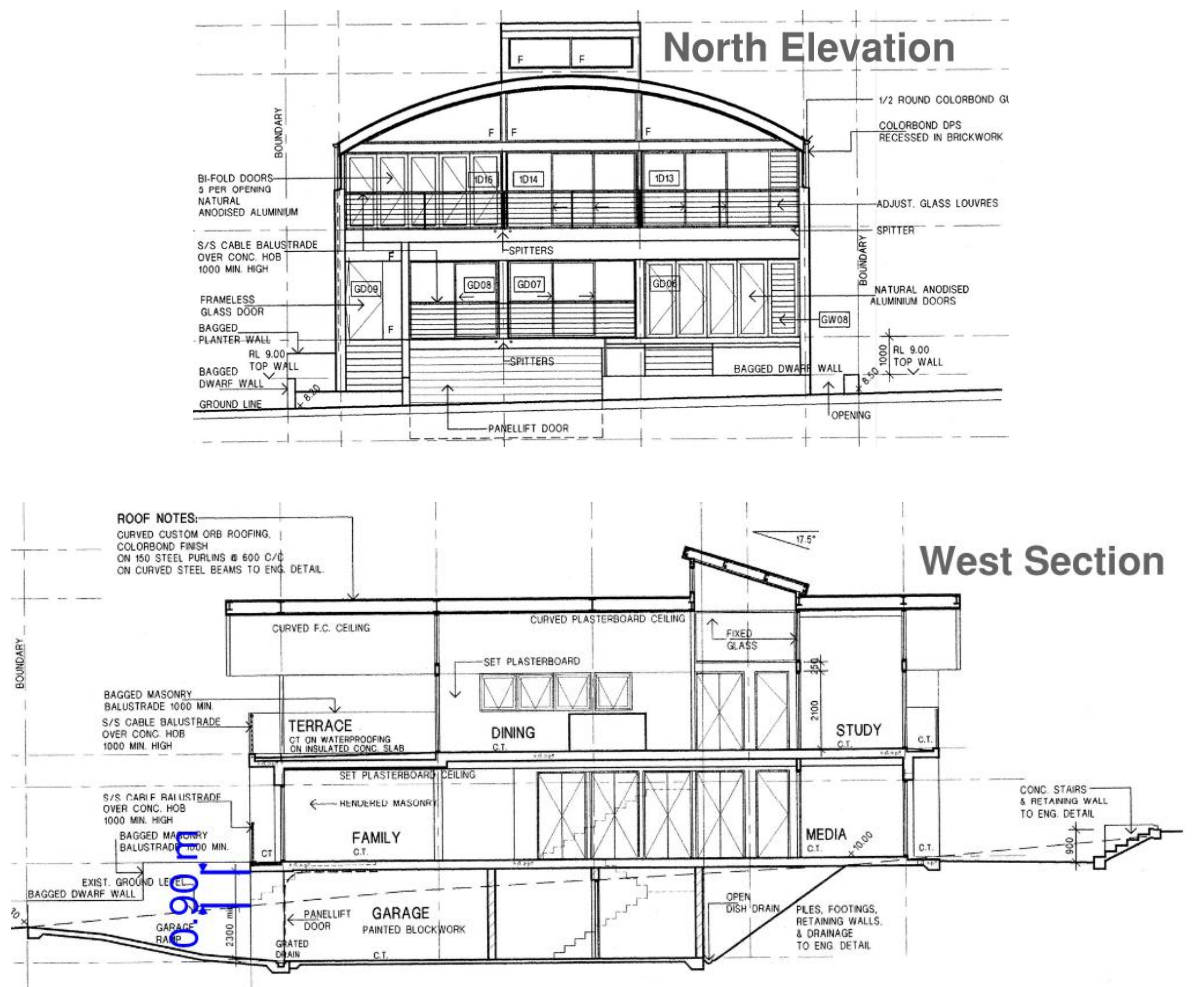
2.2 Proposal

The proposed development involves converting an existing 3-storey dwelling into a residential flat building containing two (2) residential units over a basement carpark. The scope of alterations includes internal fit-out works to make the layout suitable for its intended new uses. The proposed building will incorporate:

- 4 car spaces in the basement,
- 2 residential Sole Occupancy Units (SOU) on the ground floor and Level 1, and
- A new lift connecting the basement to Level 1.

It has been advised by the owner that no work is proposed to the existing facade.

The existing building consists of concrete slabs between each storey, masonry external and internal walls, internal steel columns on Level 1 supporting the roof structure, and a metal roof. Part of the external wall contains ancillary elements, and the attached aluminium or metal cladding does not appear to be made of composite material.



Figures 2 and 3 | North Elevation and Western Section of the proposed development |

Source: Garcia Negrette Architecture & Design

2.3 Building description

For the purposes of the BCA, the building is described as follows:

Building Classification	Class 2 – Residential	Levels Contained	Three (3)
As per Part A6 of the BCA	Class 7a – Carpark	Total number of floor levels in the building	
Rise in Storeys	Two (2)	Effective Building Height (m)	2.96 m (RL 12.955 – RL 10.000)
As per BCA Clauses C2D3 & C2D4		As per BCA definition	
Type of Construction	Type B	Climate Zone	Zone 5 – Warm Temperate
As per BCA Clause C2D2		As per BCA Map	Northern Beaches Council

2.4 Classification

Location	Class	Use	Floor Area	Occupants
Basement	7a	Carpark	Circa 215 m ²	6
Ground	2	Residential	Circa 230 m ²	-
Level 1	2	Residential	Circa 227 m ²	-

Note:

- In accordance with Clause A6G1 [2019: A6.0], Exemption 1 of the BCA, for the purposes of determining a building classification, where an ancillary use does not occupy more than 10% of the floor area of the storey which it is situated on, it may be absorbed into the dominate use for that level.
- Storage areas (Class 7b) includes general storage areas, cleaners' rooms, garbage rooms, bicycle parking areas and the like.
- Occupant numbers have been calculated in accordance with Clause D2D18 [2019:D1.13] of the BCA.
- The floor areas identified within the above table are in accordance with the BCA definition which may vary from the GFA as determined in accordance with NSW planning legislation.

2.5 Fire Compartmentation

A detailed FRL and fire compartmentation review has not been undertaken at this stage due to the level of documentation provided for DA. Pending further engagement this will be assessed upon receipt of Construction Documentation.

In accordance with the BCA, the floor area of a fire compartment includes all covered areas which contribute to fire load, and is measured to the inner face of fire rated walls (bounding walls) where applicable.

In accordance with clause C3D3 of the BCA, as the building is of Type Type B Construction, and based on the building classification, the size of any fire compartment must not exceed:

- Floor Area: 3,500 m²
- Volume: 21,000 m³

Note: Class 2 parts of the building are not subject to maximum compartment sizes.

The following fire compartments have been assumed:

1. Basement carpark
2. Unit 1, which occupies part of the ground floor level
3. Unit 2, which occupies part of the ground floor and the entire Level 1.

The fire compartments are within the limitations of clause C3D3.

2.6 Required Exits and Discharge from Exits

The following are considered the required exits for the purpose this assessment:

- Perimeter Doorways
 - A double swinging door serving the ground residential unit, leading to an open space to the north of the building, followed by an external stairway that towards to Adina Road.
 - A single swinging door on the ground level, providing egress from both the basement level and residential unit on Level 1, leading to an open space to the north of the building, followed by an external stairway towards Adina Road.

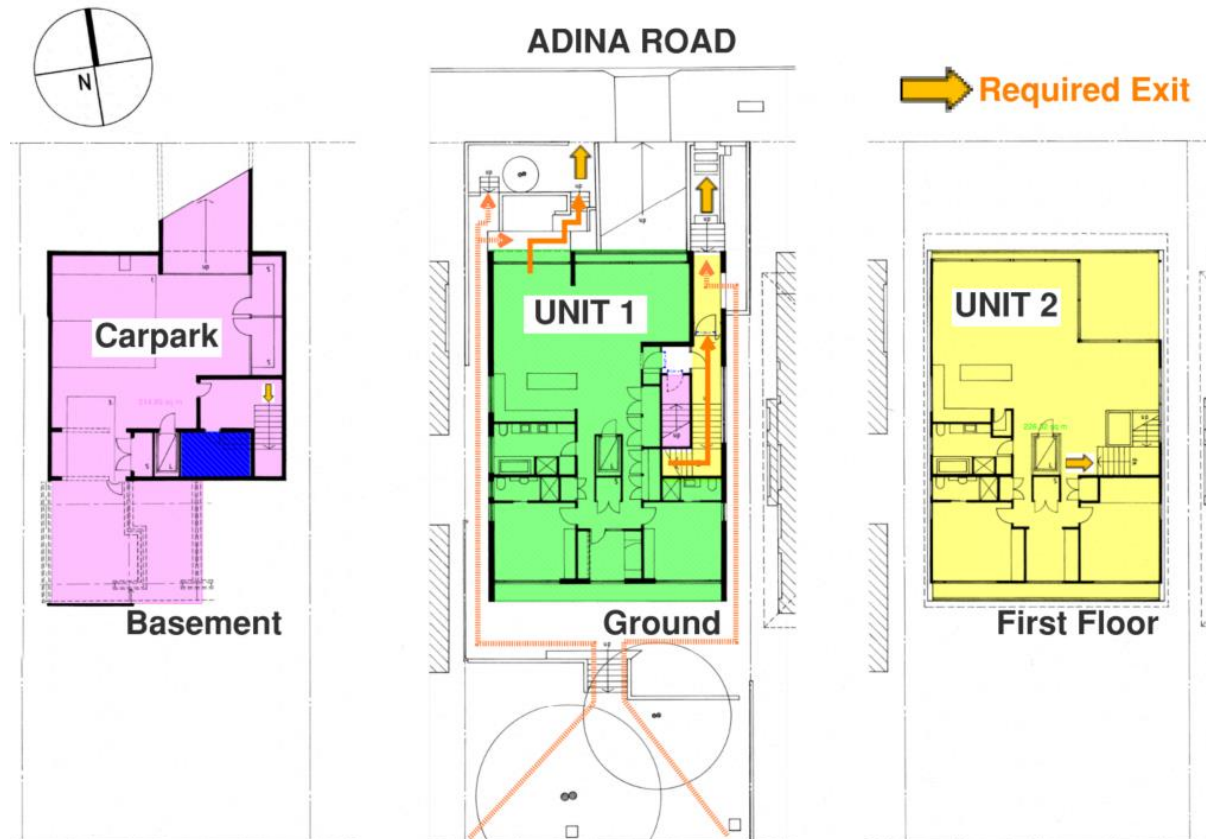


Figure 4 | Floor Plans of the proposed development | Source: Garcia Negrette Architecture & Design

3 Assessment Summary

3.1 Assessment

The reviewed documentation referenced in Annexure A of this report has been assessed against the Deemed-to-Satisfy (DtS) provisions of the BCA. This assessment has identified the following areas where compliance with the BCA will require further consideration.

3.2 Possible Performance Solutions (Fire Safety)

The following items relate to areas where a Performance Solution may be available to justify a deviation from the DtS requirements of the BCA. This report does not form a Performance Solution.

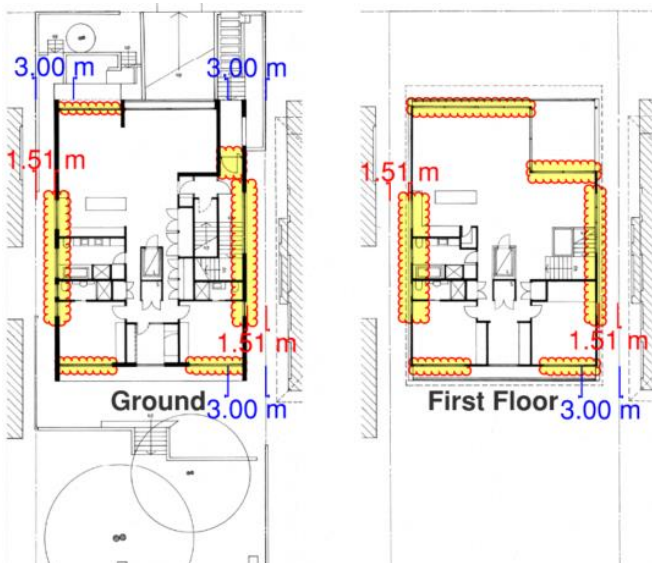
Clause A2G2 of the BCA specifies that where a performance solution is proposed, the first step is to prepare a *performance-based design brief* in consultation with relevant stakeholders. Where the performance solution relates to a fire safety requirement, Fire and Rescue NSW consider themselves as a relevant stakeholder and they must be consulted in the *performance-based design brief* process. Fire and Rescue NSW require the performance-based-design brief to be submitted using their FEBQ template and process. Further information about Fire and rescue NSWs opinion and FEBQ process can be found on their website.

Fire Engineered Performance Solutions must be prepared by a certifier – fire safety (C10).


As the development contains Class 2 part and is subject to the Design and Building Practitioners Act, the Fire Engineer must also be registered as an *accredited practitioner (fire safety)*.

Furthermore, as part of the construction certificate assessment, the registered certifier must refer Fire Engineered Performance Solutions to Fire Rescue NSW in accordance with *Part 3, Division 3 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021*. Referral under this legislation is required where the Fire Engineered Performance Solution relates to a fire safety requirement. This process is to be coordinated by the certifier as part of the Construction Certificate assessment.

Item	Possible Performance Solution	DtS Provision	Performance Requirements
1.	<p>Separation of classifications in different storeys</p> <p>Each storey must be separated from the storey below by construction having the FRL applicable to a floor for the classification in the lower storey.</p> <p>See notes in Clause C3D9, S5C9 concession applies to the subject building, and the carpark storey is regarded as Class 2 solely for determining the relevant fire-resisting requirements.</p> <p><u>Level 1 glazed floor</u> Being a Type B construction, the existing glazed floor on Level 1 should achieve an FRL of 30/30/30 as per S5C21, or comply with Clause C3D10 or be subject to a</p>	C3D10	C1P1

	<p>separate performance solution report prepared by a fire engineer.</p> <p>For separation of classification purposes, the subject building is not considered to contain multiple classification on different storeys and therefore this clause does not apply.</p> <p>A structural engineer is required to confirm the achievable FRL during the CC stage. Alternatively, a performance solution report prepared by a fire engineer may be required.</p>		
2.	<p>Protection of openings in external walls</p> <p>Openings within external walls that are required to have an FRL and are within the limitations of this provision must be protected in accordance with C4D5.</p> <p>Currently, the following openings in external walls of the building considered to be exposed to a fire source feature:</p> <ul style="list-style-type: none"> Ground floor – openings in the western and eastern external walls, located within 3m of the side boundaries. Level 1 – openings in the western and eastern external walls, located within 3m of the side boundaries. <p><u>Solution</u></p> <ul style="list-style-type: none"> Protect the marked windows and doorways in accordance with C4D5. If wall-wetting sprinkler are used, they must be located externally, or A fire engineering performance solution is required. This is a separate report that can be prepared at the CC stage. 	C4D3	C1P8

3.	<p>Bounding construction: Class 2 and 3 buildings and Class 4 parts</p> <p>The doorways to the units, and rooms off the public corridors, are to be self-closing, tight-fitting, solid core door and not less than 35mm thick.</p> <p>This includes:</p> <ul style="list-style-type: none"> ▪ Basement – the carpark doorways ▪ Ground and Level 1 – all SOU entry doorways and doorways off the common areas to public corridors. <p><u>Ground and Level 1</u></p> <p>As the lift on the residential levels opens directly into the SOUs, these SOUs are not protected from the lift with a self-closing, tight fitting solid core door. A performance solution can be prepared by a fire engineer to address this this.</p>	C4D12	C1P2
4.	<p>Fire resistance of building elements</p> <p>The building elements are to have FRLs as determined by this Clause. See Annexure C of the Report.</p> <p>It is noted that a number of building elements are required to be of non-combustible construction, including the external walls. It should be noted that where a building element is required to be non-combustible all materials forming that element are to be non-combustible.</p> <p><u>Class 2</u></p> <p>As the building contains a class 2 use, the floors separating storeys must be protected in accordance with one of the following options:</p> <ul style="list-style-type: none"> ▪ Ceiling having a resistance to the incipient spread of fire of not less than 60 minutes; or ▪ Floor having an FRL not less than 30/30/30; or ▪ Fire protective covering to the underside of the floor, including beams if the floor is combustible or of metal. <p>The existing building contains concrete slabs between each storey, which are likely capable of complying with this provision. A structural engineer is required to confirm the achievable FRL during the CC stage.</p> <p><u>Possible Performance Solution: Level 1 steel columns</u></p> <p>The existing steel columns on the upper floor do not appear to be fire rated and support the roof structure. A performance solution is required to justify the steel structure not meeting an FRL.</p>	S5C21	C1P2

	<p><u>Possible Performance Solution: Level 1 glazed floor</u> The existing horizontal glazed panel located in the living area adjacent to the stairway on Level 1 should achieve an FRL of 30/30/30 as per S5C21, or be subject to a separate performance solution report prepared by a fire engineer.</p> 		
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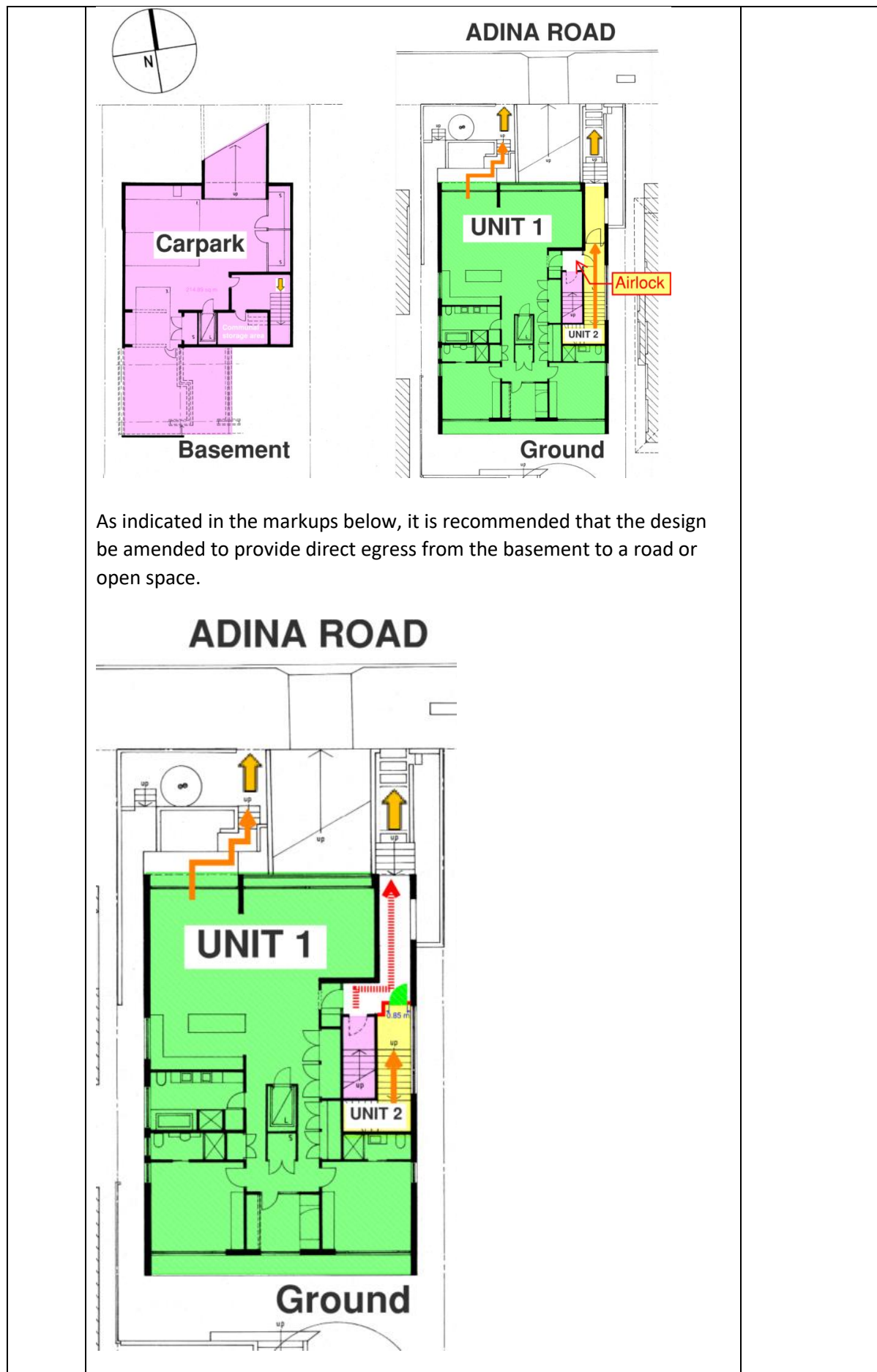
3.3 Possible Performance Solutions (Other)

There are no performance solutions (other) proposed at this time.

3.4 Design Considerations

The following items have been identified as departures from the BCA deemed-to-satisfy provisions, and Credwell recommend these items to be resolved with minor design amendments prior to the application for construction certificate:

Item	Design Considerations	DtS Provision
1.	<p>Number of exits required</p> <p><u>Basement Carpark</u> The basement level in the current design does not incorporate a discharge doorway that provides direct egress to a road or open space. Occupants traveling from the basement to the ground-level airlock must pass through Unit 1 or Unit 2 to egress the building, which does not comply with this provision.</p>	D2D3




2.	<p>Goings and risers</p> <p>Stair geometry and treads slip resistance must comply with this Clause.</p> <p>Based on an inspection of the existing building:</p> <p>1) The upper carpark stairways presents a variation in riser height of approximately 20mm between adjacent risers, which:</p> <ul style="list-style-type: none"> ✗ exceeds the 5mm maximum allowable variation between adjacent risers, and ✗ exceeds the 10mm maximum allowable variation between the largest and smallest riser within a flight.  <p>2) The external stairways for Level 1 entry presents:</p> <ul style="list-style-type: none"> ✗ The highest riser is approximately 210mm, exceeding the maximum allowable riser height of 190mm. ✗ a variation in riser height of approximately 35mm between adjacent risers, exceeding the 5mm maximum allowable variation, and a variation in riser height of approximately 45mm between the largest and smallest risers within a flight, exceeding the 10mm maximum allowable variation. 	D3D14
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- 3) The external stairways for Ground Level entry presents:
- ✘ The highest riser is approximately 245mm, exceeding the maximum allowable riser height of 190mm.
 - ✘ a variation in riser height of approximately 65mm between adjacent risers, which exceeds the 5mm maximum allowable variation, and
 - ✘ a variation in riser height of approximately 75mm between the largest and smallest risers within a flight, which exceeds the 10mm maximum allowable variation.



	<p>As noted in Section 5.2 of this report, given that full compliance with the current standards may not be practical for the existing internal and external stairways, the following rectifications are recommended:</p> <ul style="list-style-type: none"> • Non-slip luminous contrasting strips are to be installed on the nosings. • Any risers exceeding 190mm must be rectified to a maximum height of 190mm. <p>The proposed stair construction details and sections are to be provided as part of the Construction documentation to enable further review.</p>	
3.	<p>Openings in barriers</p> <p>The openings are to comply with the requirements of this clause.</p> <p><u>Existing balcony balustrade on Level 1</u> The existing balcony balustrade consists of horizontal wires with openings exceeding 125mm, which does not comply with this clause.</p> <p>Rectification of the existing balcony balustrade is required.</p>	D3D19
4.	<p>Wire barriers</p> <p>Wire barriers must be in accordance with this provision</p> <p><u>Existing balcony balustrade</u> The horizontal wires of the existing balcony balustrade do not comply with the spacing and wire span requirements under this clause. It is recommended to replace them with a glazed panel, solid/perforated panels, mesh panels, or the like.</p> 	D3D21

5.	Handrails Handrails are to comply with this Clause. <u>Existing stairways</u> The existing internal and external stairways, which currently do not have handrails, are to be fitted with compliant handrails. Handrail details and sections are to be provided as part of the Construction documentation to enable further review.	D3D22
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3.5 Further information required

For the purposes of this report, general arrangement floor plans, elevations and sections have been reviewed to determine whether the building is capable of complying with the BCA.

Construction Documentation is to be provided and reviewed by Credwell prior to the issuance of the BCA Report for the purposes of the Construction Certificate application. A detailed list of information required for review will be provided by Credwell upon engagement for the Construction Certificate stage assessment.

4 Statement of Compliance

The architectural design documentation prepared for submission for the Development Application (as referred to in Annexure A of this report) have been assessed against the relevant provisions of the BCA. This assessment was limited to an assessment of the BCA in order to identify any items that may necessitate a modified development consent or additional key items that must be included in the design. It is considered that the documentation complies or is capable of complying with the BCA subject to resolution of items identified in this Report.

As identified in the Clause by Clause assessment, sufficient construction documentation is required in order to undertake a full assessment prior to the application for Construction Certificate.

5 Legislative Requirements

The following legislation outline some of the pertinent requirements which must be reviewed and satisfied prior to the issue of a Development Application.

5.1 Clause 62 of the Environmental Planning & Assessment Regulation 2021

Clause 62 of the Environmental Planning and Assessment Regulations 2021 applies to existing buildings subject to a Development Application for the change of building use, where the proposal does not seek the rebuilding or alteration of the building.

This clause does not apply to the development as the proposal involves building alteration works.

5.2 Clause 64 of the Environmental Planning & Assessment Regulation 2021

Clause 64 of the Environmental Planning and Assessment Regulations 2021 applies to existing buildings subject to a Development Application for the rebuilding or alteration of the building where:

Clause 64 (1)

(a) the proposed building work and previous building work together represent more than half of the total volume of the building, or

(b) the measures contained in the building are inadequate—

(i) to protect persons using the building, if there is a fire, or

(ii) to facilitate the safe egress of persons using the building from the building, if there is a fire, or

(iii) to restrict the spread of fire from the building to other buildings nearby.

Where this clause applies to the development:

(2) The consent authority must consider whether it is appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.

This clause applies to the development as the total building work represents more than half of the building volume as per Clause 64(1)(a)

The local Consent Authority (Council) have at the Development Approval stage discretion on the level of fire safety upgrading deemed necessary, being either a total upgrade to satisfy the provisions of the BCA or partial upgrading depending on the design, construction extent of alterations and additions and circumstances of the particular building.

It should be noted that under Clauses 64 above, the primary concern with existing buildings is that of protecting persons using the building and to facilitate their egress from the building in the event of a fire or to restrict the spread of fire from the building to other buildings nearby.

Element	Credwell Assessment
<p><i>(1)(b)(i) to protect persons using the building, if there is a fire</i></p>	<p><u>Fire safety measures</u></p> <p>The fire safety measures within the existing building are to be upgraded to meet the Deemed-to-satisfy provisions of the current BCA. Refer to Annexure B for details of the required fire safety measures.</p> <p><u>New Lift</u></p> <p>A new lift is proposed to connect the basement carpark with the residential units on the ground floor and Level 1. To minimize the risk of fire spreading into the SOUs and safeguard residents, the following requirements must be met:</p> <ul style="list-style-type: none"> Fire Separation for the Lift Shaft: The lift shaft connecting more than 2 storeys, must be fire-separated from the remainder of the building and achieve an FRL of at least: <ul style="list-style-type: none"> 90/90/90 if loadbearing, or -/90/90 if non-loadbearing, and be non-combustible construction. (C2D10 & C3D11) Lift Landing Doors: The lift landing doors must have an FRL of not less than -/60/-, complying with AS1735.11, and set to remain closed except when discharging or receiving passengers or goods. (C4D11) Lift Doors Opening into SOUs (Ground and Level 1): On the residential levels, the lift doors open directly into the SOUs. As the SOUs are not fire-separated from the fire-rated lift shaft, this creates a non-compliant situation. A separate performance solution report prepared by a fire engineer is required to address this issue. (C4D12) <p><u>Level 1 steel columns</u></p> <p>The existing steel columns on the upper floor do not appear to be fire rated and support the roof structure. A performance solution is required to justify the steel structure not meeting an FRL.</p> <p><u>Glazed floor panel on Level 1</u></p> <p>The existing glazed floor located in the living area on Level 1, should be upgraded to achieve a minimum FRL of 30/30/30 per S5C21. Alternatively, a performance solution report prepared by a fire engineer may be provided to justify an alternative approach.</p> <p>This is to ensure the glazed panels meet the required loadbearing capacity and are adequately fire-rated so it will not fail prematurely during a fire.</p>

(1)(b)(ii) to facilitate the safe egress of persons using the building from the building, if there is a fire

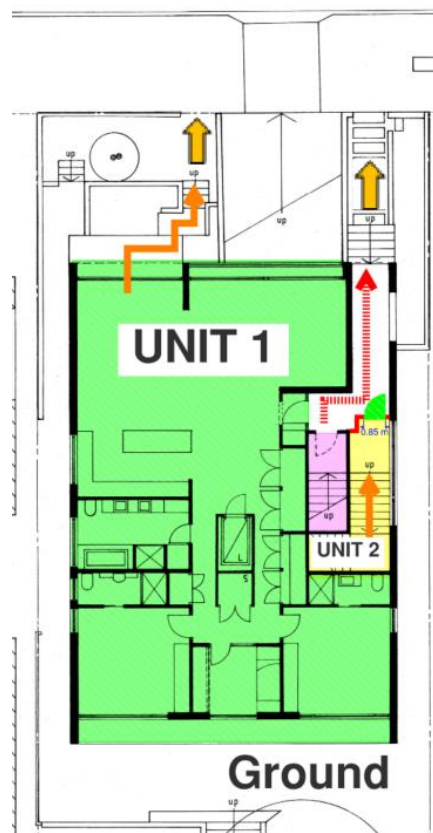
Basement Carpark

In the current design, occupants traveling from the basement to the ground-level airlock must pass through Unit 1 or Unit 2 to exit the building. This approach:

- Limits the immediate escape route available to occupants, potentially delaying evacuations,
- Increases the likelihood of exposure to smoke, heat, and other hazards, which could impede safe evacuation.

As shown in the markups below, it is recommended that the design be amended to provide an direct egress route from the basement to a road or open space.

ADINA ROAD



(1)(b)(iii) to restrict the spread of fire from the building to other buildings nearby

The existing building is exposed to fire source feature to its east and west from neighbouring properties.

Therefore, all existing openings within the external walls, located within 3m of the side boundaries, are required to be protected by:

Window

- external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
- /60/– fire windows that are automatic closing or permanently fixed in the closed position; or
- /60/– automatic closing fire shutters.

	<p><u>Door</u></p> <ul style="list-style-type: none"> i. 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. <p>Alternatively, a performance solution report prepared by a fire engineer may be provided to justify an alternative approach.</p>
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Given the proposed works we recommend the following upgrading works to the existing building, with it noted that the building is not proposed to be sprinkler protected and some discretion has been applied to the fire resistance levels recommended in the following upgrading strategy:

▪ **Structural adequacy**

A structural engineer is to be engaged to assess the structural strength and load-bearing capacity of the building to determine whether the structural capacity of the building will be appropriate to the building's proposed use, and if any upgrades are required.

▪ **Automatic warning for sleeping occupants**

Since the subject building provides sleeping accommodation on ground and Level 1, occupants must be provided with automatic warning on the detection of smoke so they warned of a fire and may evacuate in the event of a fire to a safe place. The following works are required:

- Provision of AS1670.1-2018 - Automatic fire detection and alarm system throughout the entire building to initiate a Building Occupation Warning system (BOW).
- Providing building of occupant warning system (BOW) throughout the building and ensuring that there is a minimum 75 DBA in all bedrooms.
- It is recommended that an interlinked smoke alarm system be installed in every room in the building. The smoke alarm installation is to comply with AS3786.

▪ **Exit and safe evacuation routes**

In the event of a fire, the building must be provided with safeguards so the occupants to have time to safely evacuate before the environment in any evacuation route becomes untenable from the effects of fire.

Currently, both Units 1 and 2 have direct egress to a road.

However, occupants traveling from the basement to the ground-level airlock must pass through Unit 1 or Unit 2 to exit the building. It is recommended that the design be amended to provide an direct egress route from the basement to a road or open space. See notes in Clause D2D3.

▪ **Floor separation between the carpark stairway and Level 1 SOU**

To limit fire spread between different fire compartments, the existing glazing floor on Level 1 should be upgraded to Clause C3D10 or be assessed on a performance basis.

- **Lift**

- The new lift connecting the basement carpark level and 2 residential storeys, must be enclosed in a 90 minute fire rated shaft per Clause C3D11. This includes the top of the construction.
- Openings for lift landing doors must be protected in accordance with Clause C4D12.
- On the residential levels, a performance solution report is required to address the issues that SOUs are not protected from the fire-rated lift shaft per C4D12, as the lift doors open directly into the SOUs. A performance solution can be prepared by a fire engineer to address this issue.

- **Protection of Openings in external walls**

Openings in the external walls, located within 3m of the side boundaries, must be protected in accordance with Clause C4D5 or addressed via a performance solution. This applies to the windows marked in Clause C4D3 and the SOU entry doorway for Level 1 unit that discharges on the ground floor.

- **Protection of Openings for service installations**

It was noted during the inspection that some of the services through the existing concrete slab did not have adequate fire protection per Clause C4D15. Details of fire seals to service penetrations must be provided as part of the Construction Documentation

- **Bounding construction**

The residential parts and carpark portion on the ground floor must be separated. As the carpark is considered as Class 2 under S5C9 concession, the airlock doorways are required to be self-closing, tight fitting, solid core doors, not less than 35 mm thick, in compliance with Clause C4D12.

- **Existing stairways**

- **Handrails:** None of the existing stairways currently have handrails. Compliant handrails should be installed to provide support and improve safety for individuals using the stairways.
- **Inconsistent risers height:** The riser height of the internal and external stairways are inconsistent and significant exceed the acceptable tolerance set by BCA. Of particular concern is the external stairway, where the riser heights vary by up to 75 mm between the largest and smallest risers within a single flight. This substantial inconsistency poses a trip and fall hazard, which may jeopardize the safe evacuation of occupants during emergencies.

Given that full compliance with the current standards may not be practical for the existing internal and external stairways, the following rectifications are recommended:

- ☐ Non-slip luminous contrasting strips are to be installed on the nosings to improve visibility and reduce the likelihood of slipping.
- ☐ Any risers exceeding 190mm must be rectified to a maximum height of 190mm. See Clause D3D14 of this report for further details.

- **Enclosure space under stairs** – The existing communal storage area on the basement level is located beneath a non-fire-isolated stairway. The walls and ceiling of this storage area must achieve a minimum FRL of 60/60/60, and a self-closing fire door with an FRL of -/60/30 is required.

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- **Balcony balustrade**
On Level 1 balconies, the existing balustrades consist of horizontal wires with openings exceeding 125 mm, which do not comply with the required spacing and wire span requirements. The balcony balustrades must be upgraded to comply with Clauses D3D18 to D3D21 of BCA 2022. It is recommended to replace them with glazed panels, solid or perforated panels, mesh panels, or similar alternatives. If glazed panels are proposed, their design must prevent a 125 mm sphere from passing through any openings, and the gap between the barrier and the floor surface must not exceed 40mm. Its structural adequacy is to be confirmed by a suitably qualified structural engineer.
 - **Special hazards: existing solar panels**
Where a building contains special hazards, additional smoke hazard management systems may be required. The project certifier is to comment as to whether they wish for this item to be assessed under the DtS provisions (Clauses E1D17 & E2D21), or a performance solution.
 - **Artificial lighting**
Artificial lighting to be provided to AS 1680.1. Compliance is to be confirmed by a suitably qualified electrical consultant.
 - **Ventilation system for the basement**
The basement carpark level must have a system of mechanical ventilation complying with AS1668.2-2012 or a system of natural ventilation complying with Section 4 of AS1668.4-2012. Suitable qualified mechanical consultant is to confirm compliance with Clause F6D11.

As a part of the new works we note that it is expected that the fire services, such as fire hydrant coverage, smoke detection and alarm systems, emergency lighting and exit signage systems will be modified to suit the new layout.

6 Clause by Clause Assessment

An assessment of the proposal has been undertaken against each clause of the BCA and the following abbreviations have been used.

PS	A Performance Solution is proposed to achieve compliance with this Clause.
CRA	<p>“Compliance Readily Achievable” – it is considered that whilst there is insufficient information currently provided to determine strict compliance with the DtS provisions of the BCA the proposed design is capable of comply subject to noting the requirements of the Clause.</p> <p>Additional information or documentation is necessary to confirm compliance. This may be in the form of additional drawing, a specification or design certification.</p>
Complies	The proposal shows compliance with the Deemed-to-Satisfy Clause.
DNC	The design does not comply with the Deemed-to-Satisfy Clause and design amendments are required
FI	Further information is required for assessment of the proposal relative to the DtS Clause
N/A	The DtS Clause is not applicable at this stage to this design.
Noted	The DtS Clause provides information not requiring specific assessment of the proposed design.
To be assessed at CC stage	An assessment against this provision is not included in a DA stage report due to the level of documentation provided. Pending further engagement, this will be assessed upon receipt of Construction Documentation.

SECTION B - STRUCTURE

Clause	[2019]	Description	Comments	Assessment
Part B1 – Structural Provisions				
An assessment against Section B has not been undertaken as part of this report and a suitably qualified Structural Engineer is to be engaged to confirm compliance with this part (where applicable).				

SECTION C – FIRE RESISTANCE

Clause	[2019]	Description	Comments	Assessment
Part C1 – Fire resistance				
This part details the objectives, functional statements, performance requirements and verification methods relevant to this Section.				
Part C2 – Fire resistance and stability				
C2D1	C1.0	DtS Provisions	Information only.	Noted
C2D2	C1.1	Type of construction required	The building is to be of Type B Construction.	Noted
C2D3	C1.2	Calculation of rise in storeys	The rise in storey of the building is Two (2). The rise in storey is the sum of storeys at any part of the external wall of the building and any storey within the roof space.	Noted
C2D4	C1.3	Buildings of multiple classifications	Where the building contains multiple classifications the type of construction is determined based on classification on the top level of the building subject to the highest FRL.	Noted
C2D5	C1.4	Mixed types of construction	The building will be a single Type of construction and therefore this clause does not apply	Noted
C2D6	C1.5	Two storey Class 2, 3 and 9c buildings	The building is a two (2) storey Class 2 building. The residential unit on Level 1 does not have access to at least two (2) exits, therefore, this clause does not apply.	N/A
C2D7	C1.6	Class 4 parts of buildings	The building does not contain a class 4 part and therefore this clause does not apply.	N/A
C2D8	C1.7	Open spectator stands and indoor sports stadiums	The building does not contain an open spectator stands or indoor sports stadiums and therefore this clause does not apply.	N/A
C2D9	C1.8	Lightweight construction	The given architectural plans does not include reference to lightweight systems. Where applicable, lightweight construction must comply with Specification 6.	To be assessed at CC stage
C2D10	C1.9	Non-combustible building elements	Elements of a Building of Type B Construction are required to be non-combustible as listed within this Clause. This Clause also provides a list of materials permitted to be used wherever non-combustible materials are required. <u>Existing Walls</u> Both the existing external and internal walls are made of masonry, a non-combustible material, and therefore comply with this provision. The upper floor includes lapped solid aluminium cladding which is non-combustible and therefore complies with this provision. <u>New cladding</u> For any proposed new cladding, details of materials are to be provided to enable assessment, including AS 1530 test reports for each product must be provided as part of the CC stage. <u>The new lift shaft, and flooring and floor framing of lift pits</u>	To be assessed at CC stage

Clause	[2019]	Description	Comments	Assessment
			Details of materials are to be provided to enable assessment, including AS 1530 test reports for each product must be provided as part of the CC stage.	
C2D11	C1.10	Fire hazard properties	<p>Fire hazard properties of all materials to comply with this Clause and Specification 7.</p> <p><u>Existing building elements</u> The finished of the subject building consist of concrete floors, plaster ceilings, masonry walls, and metal roof coverings. The existing floor, wall, and ceiling finishes are capable of complying with this clause.</p> <p><u>New building elements</u> All new building works, including floor linings and coverings, wall linings, ceiling linings, air-handling ductwork, lift cars, and attachments to the internal linings of external walls, must comply with this Clause.</p> <p>It should be noted that if a permanent polymer /PVC formwork for walls, such as Dincel, Rediwall, etc, is used where the BCA requires such as element to be non-combustible, this material will need to be the subject of a Performance Solution at the Construction Certificate stage.</p> <p>Details of proposed floor, wall and ceiling linings, air-handling ductwork, sarking and insulation type materials, including AS 1530.3 test reports are to be provided to enable a full assessment.</p>	To be assessed at CC stage
C2D12	C1.11	Performance of external walls in fire	<p>1-2 storey buildings that contain tilt-up / precast concrete panels that can collapse as completed panels must comply with specification 8.</p> <p>The existing building does not contain tilt-up or precast concrete panels, nor are they included in the proposed building works; therefore, this clause does not apply.</p>	N/A
C2D13	C1.13	Fire-protected timber: Concession	<p>Buildings with an effective height of no more than 25 m, provided with sprinkler protection in accordance with AS 2118.1 or AS 2118.4, are permitted to use fire-protected timber for elements required to be non-combustible.</p> <p>The proposed building does not have sprinkler protection; therefore, this concession is not applicable.</p>	N/A
C2D14	C1.14	Ancillary elements	In a Building of Type B Construction, ancillary elements other than those listed in this Clause are not to be fixed, installed or attached to internal parts or external face of an external wall that is required to be non-combustible.	To be assessed at CC stage
C2D15	-	Fixing of bonded laminated cladding panels	<p><u>New cladding</u> For any proposed new cladding, in a Building of Type B Construction, bonded laminated cladding must be in accordance with this provision and details are to be provided as part of the CC Stage.</p> <p>If no new cladding is proposed, this can be indicated on the CC drawings.</p>	To be assessed at CC stage
Part C3 – Compartmentation and separation				
C3D1	C2.0	DtS Provisions	Information only.	Noted
C3D2	C2.1	Application of Part	C3D3, C3D4, C3D5 do not apply to a carpark provided with an AS 2118 sprinkler system complying with Specification 17, an open deck carpark, or an open spectator stand.	Noted
C3D3	C2.2	General floor area and volume limitations	Refer to part 2.5 of this report for a review of Fire Compartmentation.	Noted


Clause	[2019]	Description	Comments	Assessment
C3D4	C2.3	Large isolated building	The building does not exceed the area and volume limitations of clause C3D3 and therefore this clause does not apply.	N/A
C3D5	C2.4	Requirements for open spaces and vehicular access	The building does not exceed the area and volume limitations of clause C3D3 and therefore this clause does not apply.	N/A
C3D6	C2.5	Class 9 buildings	The building does not contain a class 9 part and therefore this clause does not apply.	N/A
C3D7	C2.6	Vertical separation of openings in external walls	The building is not of Type A construction and therefore this clause does not apply.	N/A
C3D8	C2.7	Separation by fire walls	Where fire walls are utilised, they must comply with this Clause. No fire walls are proposed, and therefore this clause does not apply. See notes in Clause C3D9.	N/A
C3D9	C2.8	Separation of classifications in the same storey	<p>Each storey must be constructed to achieve the FRLs applicable to a higher class, or the different classifications must be separated from one another by fire walls.</p> <p>Clause S5C9 provides a concession for Class 2 buildings with no more than four (4) storeys, provided the basement level is a single storey used exclusively for Class 7 uses or other purposes ancillary to the Class 2 building.</p> <p>This concession applies to the subject building, and the carpark storey is regarded as Class 2 solely for determining the relevant fire-resisting requirements.</p> <p>For separation of classification purposes, the subject building is not considered to contain multiple classification on the same storey, and this clause does not apply.</p>	To be assessed at CC stage
C3D10	C2.9	Separation of classifications in different storeys	<p>Each storey must be separated from the storey below by construction having the FRL applicable to a floor for the classification in the lower storey.</p> <p>See notes in Clause C3D9, S5C9 concession applies to the subject building, and the carpark storey is regarded as Class 2 solely for determining the relevant fire-resisting requirements.</p> <p><u>Level 1 glazed floor</u> The existing glazed floor on Level 1 should achieve an FRL of 30/30/30 as per S5C21, or be subject to a separate performance solution report prepared by a fire engineer.</p> <p>For separation of classification purposes, the subject building is not considered to contain multiple classification on different storeys and therefore this clause does not apply.</p> <p>A structural engineer is required to confirm the achievable FRL during the CC stage. Alternatively, a performance solution report prepared by a fire engineer may be required.</p>	To be assessed at CC stage / PS
C3D11	C2.10	Separation of lift shafts	<p>Lift connecting more than 2 floors (or over 3 floors with sprinklers, excluding atrium-contained lifts), must be enclosed in a separate shaft. Type A construction requires shaft wall to have the relevant FRL pre-scribed in Specification 5.</p> <p>The new lift, serving 3 storeys, connecting the basement car park level and two residential levels, must be enclosed in a fire-rated shaft. If the lift shaft is load-bearing, it must</p>	To be assessed at CC stage

Clause	[2019]	Description	Comments	Assessment
			<p>achieve an FRL of at least 90/90/90. For a non-loadbearing lift shaft, it must be of non-combustible construction and achieve an FRL of at least -/90/90.</p> <p>Openings for lift landing doors must be protected in accordance with Clause C4D12.</p> <p>FRL plans are to be provided as part of the Construction Documentation to confirm compliance with this provision.</p>	
C3D12	C2.11	Stairways and lifts in one shaft	<p>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.</p> <p>The proposed new lift, which requires to be fire-rating shaft, will not be located in the same shaft as the existing stairway shaft, therefore complying with this clause.</p> <p>Also, refer to the notes in Clause C3D11 for the lift and Clause D2D4 for internal stairways.</p>	Complies
C3D13	C2.12	Separation of equipment	Equipment including lift motor rooms, emergency generators sustaining emergency equipment operating in emergency mode, central smoke control plan, boilers or battery areas with a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours, are to be fire separated from the remainder of the building in accordance with this clause.	N/A
C3D14	C2.13	Electricity supply system	Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault form the non-emergency equipment switchgear.	N/A
C3D15	C2.14	Public corridors in a Class 2 and 3 buildings	The public corridors are not greater than 40m in length and comply with this provision	Complies
Part C4 – Protection of openings				
C4D1	C3.0	DtS Provisions	Information only.	Noted
C4D2	C3.1	Application of Part	Information only.	Noted
C4D3	C3.2	Protection of openings in external walls	<p>Openings within external walls that are required to have an FRL and are within the limitations of this provision must be protected in accordance with C4D5.</p> <p>Currently, the following openings in external walls of the building considered to be exposed to a fire source feature:</p> <ul style="list-style-type: none"> Ground floor – openings in the external walls, located within 3m of the side boundaries. Level 1 – openings in the external walls, located within 3m of the side boundaries. <p><u>Solution</u></p> <ul style="list-style-type: none"> Protect the marked windows and doorways in accordance with C4D5. If wall-wetting sprinkler are used, they must be located externally, or A fire engineering performance solution is required. This is a separate report that can be prepared at the CC stage. 	CRA/PS

Clause	[2019]	Description	Comments	Assessment
C4D4	C3.3	Separation of external walls and associated openings in different fire compartments	The development does not contain different fire compartments separated by a fire wall and therefore this clause does not apply.	N/A
C4D5	C3.4	Acceptable methods of protection	Where protection is required, doorways, windows and other openings must be protected in accordance with provision	To be assessed at CC stage
C4D6	C3.5	Doorways in fire walls	The development does not incorporate any fire walls and therefore this clause does not apply.	N/A
C4D7	C3.6	Sliding fire doors	The development does not incorporate any sliding fire doors and therefore this clause does not apply.	N/A
C4D8	C3.7	Protection of doorways in horizontal exits	The development does not incorporate any horizontal exits and therefore this clause does not apply.	N/A
C4D9	C3.8	Openings in fire-isolated exits	The development does not incorporate any fire isolated exits and therefore this clause does not apply.	N/A
C4D10	C3.9	Service penetrations in fire-isolated exits	The development does not incorporate any fire isolated exits and therefore this clause does not apply.	N/A
C4D11	C3.10	Openings in fire-isolated lift shafts	Lift doors are to achieve an FRL of not less than -/60/- and be in accordance with this Clause. Lift indicator panels are also to comply with this Clause.	To be assessed at CC stage
C4D12	C3.11	Bounding construction: Class 2 and 3 buildings and Class 4 parts	<p>The doorways to the units, and rooms off the public corridors, are to be self-closing, tight-fitting, solid core door and not less than 35mm thick.</p> <p>This includes:</p> <ul style="list-style-type: none"> Basement – the carpark doorways Ground and Level 1 – all SOU entry doorways and doorways off the common areas to public corridors. <p><u>Ground and Level 1</u> As the lift on the residential levels opens directly into the SOUs, these SOUs are not protected from the lift with a self-closing, tight fitting solid core door. A performance solution can be prepared by a fire engineer to address this issue.</p> <p><u>Basement carpark</u> The carpark doorways leading to the internal stairways are capable of complying with this provision.</p>	<p>PS</p> <p>CRA</p>

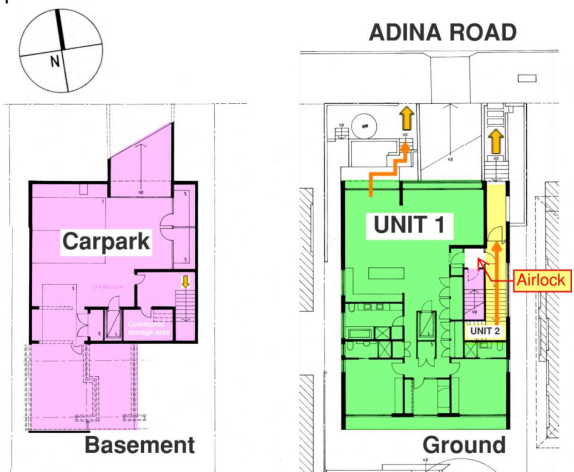
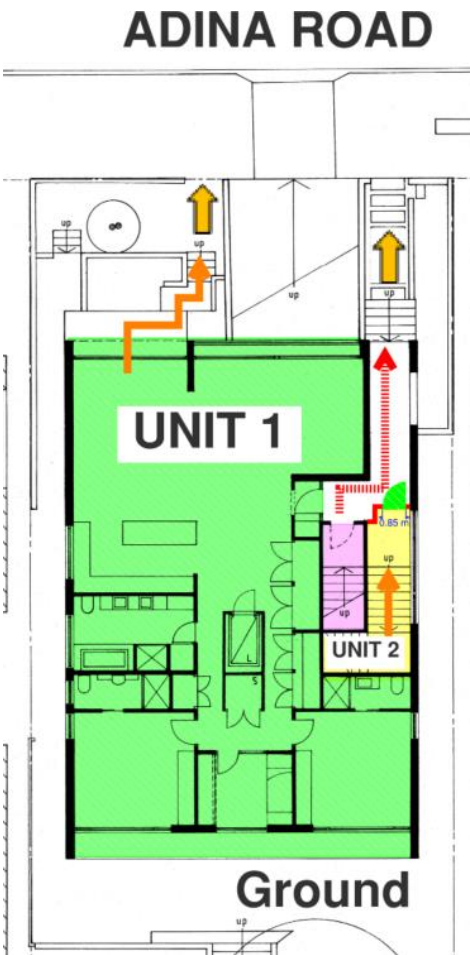
Clause	[2019]	Description	Comments	Assessment
C4D13	C3.12	Openings in floors and ceilings for services	All service shafts are to have FRLs as set by Tables S5C11a-S5C11g of Specification 5	To be assessed at CC stage
C4D14	C3.13	Openings in shafts	The development is not of Type A Construction and therefore this clause does not apply.	N/A
C4D15	C3.15	Openings for service installations	Service penetrations through fire rated building elements are to be sealed in accordance with a tested system and manufacturer specifications in accordance with this Clause. It was noted during the inspection that some of the services through the existing concrete slab did not have adequate fire protection. Details of fire seals to service penetrations must be provided as part of the Construction Documentation.	To be assessed at CC stage
C4D16	C3.16	Construction joints	Construction joints in fire rated building elements are to be appropriately treated to maintain the integrity and insulation of the element in which they are located.	To be assessed at CC stage
C4D17	C3.17	Columns protected with lightweight construction to achieve an FRL	Any columns protected with lightweight fire rated materials to achieve a required FRL are to comply with this Clause.	To be assessed at CC stage
Specification 5 – Fire-resisting construction [2019: Spec C1.1]				
S5C1	1	Scope	This Specification contains the requirements for fire resisting construction of building elements.	Noted
S5C2	2.1	Exposure to FSF	Fire-source feature means – (a) The far boundary of a road, river, lake or the like adjoining the allotment, or (b) A side or ear boundary of the allotment, or (c) An external walls of another building on the allotment on the allotment which is not a Class 10 building. The building is exposed to FSF to the east and west from neighbouring properties.	Noted
S5C3	2.2	Fire protection for support of another part	Where a part of a building required to have a FRL depends on direct vertical or lateral support from another part to maintain its FRL that supporting part must have a FRL not less than that required by other provisions as set out in this Clause. A detailed assessment of FRL has not been made as part of this assessment.	Noted
S5C4	2.3	Lintels	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and it otherwise complies with this Clause.	Noted
S5C5	2.4	Method of attachment reduce the fire-resistance of building element	The fire-resistance of a building element is not to be impacted by the method of attaching or installing a finish, lining, ancillary element or a service installation in accordance with this Clause	Noted
S5C6	2.5	General concessions	A non-combustible structure on the roof, such as lift motor equipment, ventilation motors, or other service units need not comply with Specification 5. Balconies and verandahs — A balcony, verandah or the like and any incorporated supporting part, which is attached to or from parts of a building, need not comply with Table	CRA

Clause	[2019]	Description	Comments	Assessment
			S5C11c, S5C11g, S5C21c, S5C21g, S5C24b or S5C24e if it does not form part of the only path of travel to a required exit from the building.	
S5C7	2.6	Mezzanine floors: Concession	The building does not contain a mezzanine and therefore this clause does not apply.	N/A
S5C8	2.7	Enclosure of Shafts	Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building.	To be assessed at CC stage
S5C9	2.8	Carparks in Class 2 and 3 buildings	The carpark storey can be regarded as class 2 where the building meets the provision of this clause for the purposes of determining the relevant FRL.	Noted
S5C10	2.9	Residential aged care building: Concession	The building does not contain a Class 3 residential aged care building and therefore this clause does not apply.	N/A
	4	Type B Construction		
S5C21	4.1	Fire resistance of building elements	<p>The building elements are to have FRLs as determined by this Clause. See Annexure C of the Report.</p> <p>It is noted that a number of building elements are required to be of non-combustible construction, including the external walls. It should be noted that where a building element is required to be non-combustible all materials forming that element are to be non-combustible.</p> <p><u>Class 2</u></p> <p>As the building contains a class 2 use, the floors separating storeys must be protected in accordance with one of the following options:</p> <ul style="list-style-type: none"> ▪ Ceiling having a resistance to the incipient spread of fire of not less than 60 minutes; or ▪ Floor having an FRL not less than 30/30/30; or ▪ Fire protective covering to the underside of the floor, including beams if the floor is combustible or of metal. <p>The existing building contains concrete slabs between each storey, which are likely capable of complying with this provision.</p> <p>The existing steel columns on the upper floor do not appear to be fire rated and support the roof structure. A performance solution is required to justify the steel structure not meeting an FRL.</p> <p><u>Possible Performance Solution: Level 1 steel columns</u></p> <p>The existing steel columns on the upper floor do not appear to be fire rated and support the roof structure. A performance solution is required to justify the steel structure not meeting an FRL.</p> <p><u>Possible Performance Solution: Level 1 glazed floor</u></p> <p>The existing horizontal glazed panel located in the living area adjacent to the stairway on Level 1 should achieve an FRL of 30/30/30 as per S5C21, or be subject to a separate performance solution report prepared by a fire engineer.</p>	To be assessed at CC stage / PS

Clause	[2019]	Description	Comments	Assessment
				
S5C22	4.2	Carparks	This concession is not being sought.	N/A
S5C23	4.3	Class 2 and 3 buildings: Concession	This concession may be applied where applicable	To be assessed at CC stage
Specification 6 – Structural tests for lightweight construction [2019: Spec C1.8]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 7 – Fire hazard properties [2019: Spec C1.10]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, this will be assessed upon receipt of Construction Documentation.				
Specification 8 – Performance of external walls in fire [2019: Spec C1.11]				
This specification does not apply by Clause C2D12 [2019: C1.11].				
Specification 9 – Cavity barriers for fire-protected timber [2019: Spec C1.13]				
This specification does not apply by Clause C2D13 [2019: C1.13].				
Specification 10 – Fire-protected timber [2019: Spec C1.13a]				
This specification does not apply by Clause C2D13 [2019: C1.13].				
Specification 11 – Smoke-proof walls in health-care and residential care buildings [2019: Spec C2.5]				
This specification does not apply by Clause C3D6 [2019: C2.5].				
Specification 12 – Fire doors, smoke doors, fire windows and shutters [2019: Spec C3.4]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 13 – Fire doors, smoke doors, fire windows and shutters [2019: Spec C3.15]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				

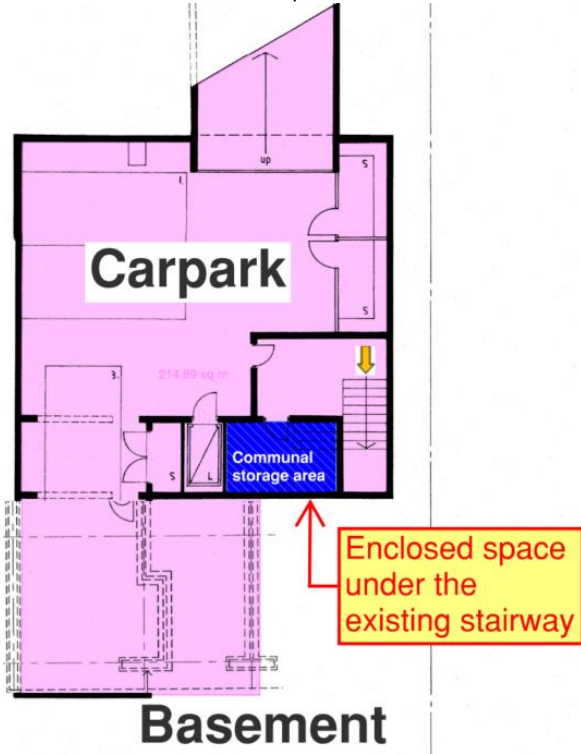
SECTION D – ACCESS AND EGRESS

Clause	[2019]	Description	Comments	Assessment
Part D1 – Access and egress				
This part details the objectives, functional statements, performance requirements and verification methods relevant to this Section.				
Part D2 – Provision for escape				
D2D1	D1.0	DtS Provisions	Information only.	Noted
D2D2	D1.1	Application of Part	Information only.	Noted
D2D3	D1.2	Number of exits required	<p>The building must be provided with at least 1 exit from each storey.</p> <p><u>Basement Carpark</u> The basement level in the current design does not include a discharge doorway providing direct egress to a road or open space. Occupants traveling from the basement to the ground-level airlock must pass through Unit 1 or Unit 2 to</p>	DNC


Clause	[2019]	Description	Comments	Assessment
			<p>exit the building, which does not comply with this provision.</p>  <p>As indicated in the markups below, it is recommended that the design is to be amended so a direct egress is provided from the basement to a road or open space.</p> 	
D2D4	D1.3	When fire-isolated stairways and ramps are required	The internal stairways do not connect more than 3 consecutive storeys, and therefore they are required to be fire-isolated under this provision.	N/A
D2D5	D1.4	Exit travel distances	A summary of the maximum travel distances applicable to this building is as follows:	Complies


Clause	[2019]	Description	Comments	Assessment
			<ul style="list-style-type: none"> Class 2 – 6m from SOU entrance doorway to exit or point of choice, or 20m from a SOU entrance doorway to a single exit serving the storey at the ground or lower ground. Class 2 common areas – 20 m to an exit or point of choice. Class 7a – 20 m to a single exit or a point of choice where two exits are available, in which case the maximum distance to one of those exits must not exceed 40 m. <p>The exit travel distances are within the limitations of this clause.</p>	
D2D6	D1.5	Distance between alternative exits	The building does not contain alternative exits and therefore this clause does not apply.	N/A
D2D7	D1.6(a)	Height of exits, paths of travel to exits and doorways	The required exit or path of travel to an exit must be not less than 2m in height. The reduction in height to 1980mm is permitted at any doorway.	CRA
D2D8	D1.6(b), (c), (d) and (e)	Width of exits and paths of travel to exits	A minimum clear width of 1m is required for each exit and path of travel to exits. The 1m is to be clear of all obstructions such as handrails, PFE, hydrants etc.	CRA
D2D9	D1.6(f)	Width of doorways in exits or paths of travel to exits	The minimum width of 750mm through a doorway is required unless otherwise specified in this clause. Given that the access requirements in D4 require a minimum 850mm clearance in accessible areas, we recommend providing clear width of 850mm throughout the development.	CRA
D2D10	D1.6(g)	Exit width not to diminish in direction of travel	The unobstructed width of a required exit must not diminish in the direction of travel.	CRA
D2D11	D1.6(h) & (i)	Determination and measurement of exits and paths of travel to exits	The required stairway and/or ramp must have an unobstructed width (measured clear of handrails) of no less than 1,000mm.	CRA
D2D12	D1.7	Travel via fire-isolated exits	The building does not contain fire isolated exits and therefore this clause does not apply.	N/A
D2D13	D1.8	External stairways or ramps in lieu of fire-isolated exits	The building does not contain external stairways in lieu of fire-isolated stairways and therefore this clause does not apply.	N/A
D2D14	D1.9	Travel by non-fire-isolated stairways or ramps	The travel distance via the non-fire-isolated exits are within the limitations of the DtS provisions.	Complies
D2D15	D1.10	Discharge from exits	The discharge of alternative exits must be located as far apart as practical, and where they discharge to open space, a path of travel to the public road must be in accordance with this provision.	CRA
D2D16	D1.11	Horizontal exits	The development does not contain any horizontal exits and therefore this clause does not apply.	N/A
D2D17	D1.12	Non-required stairways, ramps or escalators	The development does not contain any escalator, moving walkway or non-required non fire-isolated stairway or pedestrian ramp and therefore this clause does not apply.	N/A
D2D18	D1.13	Number of persons accommodated	Occupant calculations have been provided in part 2.4 of this report.	Noted

Clause	[2019]	Description	Comments	Assessment
D2D19	D1.14	Measurement of distances	Information only.	Noted
D2D20	D1.15	Method of measurement	Information only.	Noted
D2D21	D1.16	Plant rooms, lift machine rooms, electricity network substations: Concession	No ladder is proposed in lieu of a stairway to provide egress from the plant room in the current design, therefore this clause does not apply.	N/A
D2D22	D1.17	Access to lift pits	If the building incorporates a lift pit, access to it must comply with this clause.	To be assessed at CC stage
D2D23	D1.18	Egress from primary schools	The building does not incorporate a Class 9b primary school and therefore this clause does not apply	N/A
Part D3 – Construction of Exits				
D3D1	D2.0	DtS Provisions	Information only.	Noted
D3D2	D2.1	Application of Part	Except for— D3D14, D3D15(a), D3D17, D3D18, D3D19, D3D20, D3D21, D3D22(5), D3D22(6), D3D23 and D3D29, the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a sole-occupancy unit in a Class 2 building part of a building.	Noted
D3D3	D2.2	Fire-isolated stairways and ramps	Where required, fire isolated stairs are required to be non-combustible and not cause structural damage to the shaft if there is local failure. As noted in D2D4, the building does not contain a fire-stair and therefore this clause does not apply.	N/A
D3D4	D2.3	Non-fire-isolated stairways and ramps	The construction of the non-fire-isolated exit stairway(s) must be in accordance with this provision. The internal stairway within the SOUs are exempted by Clause D3D2. This clause only applies to the existing internal stairway leading to the basement carpark level which is capable of complying with this provision.	CRA
D3D5	D2.4	Separation of rising and descending stair flights	Rising and descending stair flights must be separated with non-combustible and smoke-proof construction. As noted in Clause D2D4, none of the existing stairways is required to be fire-isolated, and therefore this clause does not apply.	N/A
D3D6	D2.5	Open access ramps and balconies	The building is not proposed to be provided with open access ramp or balconies to meet the smoke hazard management requirements of E2D4-E2D13 and therefore this clause does not apply.	N/A
D3D7	D2.6	Smoke lobbies	The building is not required to be provided with a smoke lobby required by D2D12 and therefore this clause does not apply.	N/A
D3D8	D2.7	Installations in exits and paths of travel	Electrical meters, distribution boards or ducts, central telecommunication distribution boards or equipment, or electrical motors may be installed in the corridor leading to the exit, if the services enclosure is of non-combustible construction and smoke sealed. The floor plans including openings of service locations, are to be included as part of the Construction Documentations Services designers to confirm compliance at CC stage.	To be assessed at CC stage

Clause	[2019]	Description	Comments	Assessment
D3D9	D2.8	Enclosure of space under stairs and ramps	<p>The cupboard under the non-fire-isolated stair is to be fire rated in accordance with this provision.</p>  <p>FRL plans and door schedules are to be provided as part of the Construction Documentation to confirm compliance with this provision.</p>	To be assessed at CC stage
D3D10	D2.9	Width of required stairways and ramps	The plans do not include a required stairway or ramp with a width over 2m.	N/A
D3D11	D2.10	Pedestrian ramps	There are no ramps within the existing building serving as a required exit.	N/A
D3D12	D2.11	Fire-isolated passageways	The development does not contain any fire-isolated passageways therefore this clause does not apply.	N/A
D3D13	D2.12	Roof as open space	The development does not contain any roof that has been assessed as open space and therefore this clause does not apply.	N/A
D3D14	D2.13	Goings and risers	<p>Stair geometry and treads slip resistance must comply with this Clause.</p> <p>Based on an inspection of the existing building:</p> <p>4) The upper carpark stairways presents a variation in riser height of approximately 20mm between adjacent risers, which:</p> <ul style="list-style-type: none"> ✗ exceeds the 5mm maximum allowable variation between adjacent risers, and ✗ exceeds the 10mm maximum allowable variation between the largest and smallest riser within a flight. 	DNC

Clause	[2019]	Description	Comments	Assessment
			 <p>Approx. 168 mm Approx. 169 mm Approx. 168 mm Approx. 173 mm Approx. 153 mm</p> <p>5) The external stairways for Level 1 entry presents:</p> <ul style="list-style-type: none"> ✗ The highest riser is approximately 210mm, exceeding the maximum allowable riser height of 190mm. ✗ a variation in riser height of approximately 35mm between adjacent risers, exceeding the 5mm maximum allowable variation, and ✗ a variation in riser height of approximately 45mm between the largest and smallest risers within a flight, exceeding the 10mm maximum allowable variation.  <p>Approx. 175 mm Approx. 170 mm Approx. 165 mm Approx. 175 mm Approx. 210 mm</p>	

Clause	[2019]	Description	Comments	Assessment
			<p>6) The external stairways for Ground Level entry presents:</p> <ul style="list-style-type: none"> ✖ The highest riser is approximately 245mm, exceeding the maximum allowable riser height of 190mm. ✖ a variation in riser height of approximately 65mm between adjacent risers, which exceeds the 5mm maximum allowable variation, and ✖ a variation in riser height of approximately 75mm between the largest and smallest risers within a flight, which exceeds the 10mm maximum allowable variation.  <p>As noted in Section 5.2 of this report, given that full compliance with the current standards may not be practical for the existing internal and external stairways, the following rectifications are recommended:</p> <ul style="list-style-type: none"> • Non-slip luminous contrasting strips are to be installed on the nosings to improve visibility and reduce the likelihood of slipping. • Any risers exceeding 190mm must be rectified to a maximum height of 190mm. <p>The proposed stair construction details and sections are to be provided as part of the Construction documentation to enable further review.</p>	
D3D15	D2.14	Landings	<p>Landings for flights of stairs are to be at least 750mm long, have a maximum gradient of 1:50 and have a slip resistance in accordance with this Clause.</p> <p>Stair construction details are to be provided as part of the Construction documentation to enable further review.</p>	To be assessed at CC stage
D3D16	D2.15	Thresholds	<p>The Level 1 SOU entry doorway, discharging to the ground level, opens onto an external stair landing. The door sill is no more than 190mm above the finished surface to which the doorway opens.</p> <p>The thresholds throughout the building comply with the requirements of this clause.</p>	Complies
D3D17	D2.16(a), (b) and (c)	Barriers to prevent falls	Trafficable surfaces 1 m or more above the surface beneath are to be provided with a barrier in accordance with D3D18-D2D21.	To be assessed at CC stage

Clause	[2019]	Description	Comments	Assessment
			See notes in Clause D3D19 and D3D21.	
D3D18	Table D2.16a	Height of barriers	Generally, the minimum barrier height required is 1m in height. However, on stairways and ramps the minimum barrier height required is 865mm. The existing balcony balustrade measures more than 1000mm in height.	Complies
D3D19		Openings in barriers	The openings are to comply with the requirements of this clause. <u>Existing balcony balustrade</u> The existing balcony balustrade consists of horizontal wires with openings exceeding 125mm, which does not comply with this clause. Rectification of the existing balcony balustrade is required.	DNC
D3D20		Barrier climbability	Barriers required on a floor more than 4m above the surface beneath must not incorporate climbable elements between 150mm to 760mm. Since the subject building does not contain a floor more than 4m above the surface beneath, barriers are not required as per clause D3D17. Therefore this clause does not apply.	N/A
D3D21		Wire barriers	Wire barriers must be in accordance with this provision <u>Existing balcony balustrade</u> The horizontal wires of the existing balcony balustrade do not comply with the spacing and wire span requirements under this clause. It is recommended to replace them with a glazed panel, solid/perforated panels, mesh panels, or the like. 	DNC

Clause	[2019]	Description	Comments	Assessment
D3D22	D2.17	Handrails	Handrails are to comply with this Clause. <u>Existing stairways</u> The existing internal and external stairways, which currently do not have handrails, are to be fitted with compliant handrails. Handrail details and sections are to be provided as part of the Construction documentation to enable further review.	DNC
D3D23	D2.18	Fixed platforms, walkways, stairways and ladders	Where used must comply with AS1657, not proposed in the development.	N/A
D3D24	D2.19	Doorways and doors	The doorways and doors throughout the building comply.	Complies
D3D25	D2.20	Swinging doors	Doors must swing in the direction of egress The swinging exit doors throughout the building comply. <u>Note for Level 1 SOU entry door on the ground level</u> The existing SOU doorway swings outwards, but is shown as swinging inwards on the proposed drawings. It should be updated to reflect the correct swing direction.	Complies
D3D26	D2.21	Operation of latch	All doorways must be provided with latches compliant with the requirements of this clause.	To be assessed at CC stage
D3D27	D2.22	Re-entry from fire-isolated exits	Re-entry is not required from the fire-isolated stairs.	N/A
D3D28	D2.23	Signs on doors	Signage is to be located on all fire and smoke doors in accordance with this Clause. For self-closing doors the sign is to stay "FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN" and for the door discharging from a fire-isolated exit "FIRE SAFETY DOOR – DO NOT OBSTRUCT". The text is to be a minimum of 20mm in height and a colour contrasting to the background of the sign.	To be assessed at CC stage
D3D29	D2.24	Protection of openable windows	Windows to the bedrooms of the Class 2 part are to be provided with window locks in accordance with this Clause.	To be assessed at CC stage
D3D30	D2.25	Timber stairway: Concession	No fire-isolated stairways provided on the current plans therefore this concession is not available.	N/A

SECTION E – SERVICES AND EQUIPMENT

Clause	[2019]	Description	Comments	Assessment
Part E1 – Fire fighting equipment				
E1D1	E1.0	DtS Provisions	Information only.	Noted
E1D2	E1.3	Fire hydrants	The building is required to be provided with a Hydrant System in accordance with this provision and AS 2419.1. Suitable coverage may be provided from the street hydrant. Details of a proposed hydrant system is to be provided by a suitably qualified hydraulic consultant as part of the Construction Documentation. Any proposed deviations from DtS within the hydrant system design are to be raised by the hydraulic consultant for discussion with relevant stakeholders to determine whether a performance solution can be supported.	To be assessed at CC stage
E1D3	E1.4	Fire hose reels	<u>Class 2</u> This clause does not apply to Class 2 part.	N/A

Clause	[2019]	Description	Comments	Assessment
			<u>Class 7a</u> As no internal hydrant is expected, and the carpark does not have a fire compartment greater than 500 m ² , this clause does not apply. Therefore, the building is not required to be provided with a Fire Hose Reel System in accordance with this provision and AS 2441.	
NSW E1D4 - E1D13	E1.5	Sprinklers	The building is not required to be provided with a sprinkler system to meet the requirements of clauses E1D5-E1D13.	N/A
E1D5	Table E1.5	Where sprinklers are required: all classifications	The building does not have an effective height of more than 25m and therefore this clause does not apply.	N/A
E1D6	Table E1.5	Where sprinklers are required: Class 2 and 3 buildings other than residential care buildings	The building contains less than 4 storeys and therefore this clause does not apply.	N/A
E1D7	Table E1.5	Where sprinklers are required: Class 3 building used as a residential care building	The building does not contain any class 3 residential care areas and therefore this clause does not apply.	N/A
E1D8	Table E1.5	Where sprinklers are required: Class 6 building	The building does not contain class 6 areas and therefore this clause does not apply.	N/A
E1D9	Table E1.5	Where sprinklers are required: Class 7a building, other than an open-deck carpark	The building does not contain class 7a carpark with a fire compartment that accommodates more than 40 vehicles and therefore this clause does not apply.	N/A
E1D10	Table E1.5	Where sprinklers are required: Class 9a health-care building used as a residential care building, Class 9c buildings	The building does not contain class 9a or 9c use and therefore this clause does not apply.	N/A
E1D11	Table E1.5	Where sprinklers are required: Class 9b buildings	The building does not contain class 9b use and therefore this clause does not apply.	N/A
E1D12	Table E1.5	Where sprinklers are required: additional requirements	The building does not contain an atrium and has not been assessed as a large isolated building and therefore this clause does not apply.	N/A
E1D13	Table E1.5 (note 4)	Where sprinklers are required: occupancies of excessive hazard	The building does not contain excessive hazards and therefore this clause does not apply.	N/A
E1D14	E1.6	Portable fire extinguishers	<u>Class 2</u> As no internal hydrant is expected and the Class 2 portions do not contain any fire compartment exceeding 500 m ² , this clause does not apply. <u>Class 7</u> The carpark level, with a floor area of less than 500 m ² and not protected by fire hose reels, is not considered a	N/A


Clause	[2019]	Description	Comments	Assessment
			<p>normally occupied fire compartment. Therefore, this clause does not apply.</p> <p>Therefore, the building will not be required to be provided with portable fire extinguishers in accordance with this provision and AS 2444.</p>	
E1D15	E1.8	Fire control centres	The building has an effective height of less than 25m and does not contain class 6, 7, 8, or 9 uses with a floor area or more than 18,000m ² . Therefore, the building is not required to be provided with a fire control centre and this clause does not apply.	N/A
E1D16	E1.9	Fire precautions during construction	In a building under construction not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.	Noted
E1D17	E1.10	Provisions for special hazards	<p>Where a building contains special hazards, additional smoke hazard management systems may be required.</p> <p>The following special hazards have been identified:</p> <ul style="list-style-type: none"> Existing solar panels Potential EV chargers <p>The project certifier is to comment as to whether they wish for this item to be assessed under the DtS provisions, or a performance solution.</p>	To be assessed at CC stage
Part E2 – Smoke hazard management				
E2D1	E2.0	DtS Provisions	Information only.	Noted
E2D2	E2.1	Application of Part	Information only.	Noted
E2D3	E2.2	General requirements	<p>Where an air-handling system recycles air between fire compartments, it must:</p> <ul style="list-style-type: none"> Operate as a smoke control system in accordance with AS 1668,1; or Incorporate smoke dampers where the air-handling ducts penetrate fire rated elements separating the fire compartments. Furthermore a smoke detection system must be provided to clause 7.5 of AS 1670.1 to trigger auto shutdown of the system, and smoke damper activation. <p>For the purposes of this clause, SOUs in the Class 2 parts are considered separate fire compartments.</p>	To be assessed at CC stage
E2D4	Table E2.2a	Fire-isolated exits	The development does not contain fire-isolated exits and therefore this clause is not applicable to this assessment.	N/A
E2D5	Table E2.2a	Buildings more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building	The development has an effective height of 2.96 m (not more than 25 m) and therefore this clause is not applicable to this assessment.	N/A
E2D6	Table E2.2a	Buildings more than 25 m in effective height: Class 5, 6, 7b, 8 or 9b buildings	The development does not contain a Class 5, 6, 7b, 8 or 9b part and therefore this clause is not applicable to this assessment.	N/A
E2D7	Table E2.2a	Buildings more than 25 m in effective height: Class 9a buildings	The development does not contain a Class 9a part and therefore this clause is not applicable to this assessment.	N/A
E2D8	Table E2.2a	Buildings not more than 25 m in effective height:	The building contains a Class 2 part and has an effective height of 2.96 m (not more than 25 m) and therefore must	To be assessed at CC stage

Clause	[2019]	Description	Comments	Assessment
		Class 2 and 3 buildings and Class 4 part of a building	be provided with an automatic smoke detection and alarm system complying with Specification 20.	
E2D9	Table E2.2a	Buildings not more than 25 m in effective height: Class 5, 6, 7b, 8 and 9b buildings	The development does not contain a Class 5, 6, 7b, 8, or 9b part and therefore this clause is not applicable to this assessment.	N/A
NSW E2D10	NSW Table E2.2a	Buildings not more than 25 m in effective height: large isolated buildings subject to C3D4	This clause does not apply to this development as it is not a large-isolated buildings subject to C3D4	N/A
E2D11	Table E2.2a	Buildings not more than 25 m in effective height: Class 9a and 9c buildings	The development does not contain a Class 9a or 9c part and therefore this clause is not applicable to this assessment.	N/A
E2D12	Table E2.2a	Class 7a buildings	Where the class 7a carpark areas are proposed to be provided with a mechanical ventilation system in accordance with AS 1668.2 (in lieu of natural ventilation), the system must comply with clause 5.5 of AS 1668.1.	To be assessed at CC stage
E2D13	Table E2.2a	Basements (other than Class 7a buildings)	The development does not contain a basement (other than a class 7a) that is not included in the rise in storeys and therefore this clause does not apply.	N/A
E2D14	Table E2.2b	Class 6 buildings – in fire compartments more than 2000 m ² : Class 6 building (not containing an enclosed common walkway or mall serving more than one Class 6 sole-occupancy unit)	The development does not contain any Class 6 parts and therefore this clause is not applicable to this assessment.	N/A
E2D15	Table E2.2b	Class 6 buildings – in fire compartments more than 2000 m ² : Class 6 building (containing an enclosed common walkway or mall)	The development does not contain any Class 6 parts and therefore this clause is not applicable to this assessment.	N/A
NSW E2D16	NSW Table E2.2b	Class 9b – assembly buildings: all	The development does not contain any Class 9b assembly buildings and therefore this clause is not applicable to this assessment.	N/A
NSW E2D17	NSW Table E2.2b	Class 9b – assembly buildings: night clubs, discotheques and the like	The development does not contain any class 9b night clubs, discotheques or the like and therefore this clause does not apply.	N/A
NSW E2D18	NSW Table E2.2b	Class 9b – assembly buildings: exhibition halls, museums and art galleries	The development does not contain any Class 9b exhibition hall, museum or art galleries and therefore this clause does not apply.	N/A

Clause	[2019]	Description	Comments	Assessment
NSW E2D19	NSW Table E2.2b	Class 9b – assembly buildings: other assembly buildings (not listed in NSW E2D16-E2D18)	This clause does not apply to this development as it does not contain Class 9b uses other assembly buildings (not listed in NSW E2D16-E2D18)	N/A
NSW E2D20	Table E2.2b	Class 9b assembly buildings: other assembly buildings (not listed in E2D16 to E2D19)	Clause E2D20 has not been adopted for NSW	N/A
E2D21	E2.3	Provision for special hazards	<p>Where a building contains special hazards, additional smoke hazard management systems may be required.</p> <p>The following special hazards have been identified:</p> <ul style="list-style-type: none"> Existing solar panels Potential EV chargers <p>The project certifier is to comment as to whether they wish for this item to be assessed under the DtS provisions, or a performance solution.</p>	To be assessed at CC stage
Part E3 – Lift installations				
E3D1	E3.0	DtS Provisions	Information only.	Noted
E3D2	E3.1	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24. The lift manufacture is to ensure compliance with this clause is achieved as part of the CC stage.	To be assessed at CC stage
E3D3	E3.2	Stretcher facility in lifts	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
E3D4	E3.3	Warning against use of lifts in fire	Warning signage stating DO NOT USE LIFTS IF THERE IS A FIRE is to be provided in accordance with this Clause. The lift manufacture is to ensure compliance with this clause is achieved as part of the CC stage.	To be assessed at CC stage
E3D5	E3.4	Emergency lifts	The development has an effective height of 2.96 m (not more than 25m), it does not contain any Class 9a patient care areas and therefore is not required to be provided with any emergency lifts.	N/A
E3D6	E3.5	Landings	Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2, D3 and D4.	To be assessed at CC stage
E3D7	E3.6, table E3.6a, Table E3.6b	Passenger lifts and their limitations	<p>If the lift(s) provided are use of electric passenger lifts, electrohydraulic passenger lifts or inclined lifts they have no limitations. Details are to be provided at CC Stage.</p> <p>An assessment of this clause does not form part of the scope of this Report. Rather, it is to be covered by an Access assessment prepared by a third-party consultant.</p>	N/A
E3D8	Table E3.6a, Table E3.6b	Accessible features required for passenger lifts	<p>In an accessible building, every passenger lift must have the following features in the lift to provide for accessibility to the requirements of this clause.</p> <p>An assessment of this clause does not form part of the scope of this Report. Rather, it is to be covered by an Access assessment prepared by a third-party consultant.</p>	N/A
E3D9	E3.7	Fire service controls	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
E3D10	E3.8	Residential care buildings	This clause does not apply to this development as it does not contain residential care as defined by the BCA.	N/A
E3D11	E3.9	Fire service recall control switch	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A

Clause	[2019]	Description	Comments	Assessment
E3D12	E3.10	Lift car fire service drive control switch	The building has an effective height of less than 12m and therefore this clause does not apply.	N/A
Part E4 – Visibility in an emergency, exit signs and warning systems				
E4D1	E4.0	DtS Provisions	Information only.	Noted
E4D2	E4.2	Emergency lighting requirements	The development is required to be provided with emergency lighting in accordance with this clause and AS 2293.1.	To be assessed at CC stage
E4D3	E4.3	Measurement of distance	Information only.	Noted
E4D4	E4.4	Design and operation of emergency lighting	Services designer to confirm the emergency lighting complies with the BCA and AS 2293.1-2018 as part of the CC stage.	To be assessed at CC stage
E4D5	E4.5	Exit signs	Services designer to confirm the exit signage complies with the BCA and AS 2293.1-2018 as part of the CC stage.	To be assessed at CC stage
E4D6	E4.6	Direction signs	Services designer to confirm the exit signage complies with the BCA and AS 2293.1-2018 as part of the CC stage.	To be assessed at CC stage
E4D7	E4.7	Class 2 and 3 buildings and Class 4 parts: Exemptions	The requirements of clause E4D5 do not apply to— (a) a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the exit or balcony— (i) with the word “EXIT” in capital letters 25 mm high in a colour contrasting with that of the background; or (ii) by some other suitable method; and (b) an entrance door of a sole-occupancy unit in a Class 2 building.	To be assessed at CC stage
E4D8	E4.8	Design and operation of exit signs	Services designer to confirm the exit signage complies with the BCA and AS 2293.1-2018 as part of the CC stage.	To be assessed at CC stage
E4D9	E4.9	Emergency warning and intercom systems	The development has an effective height of 2.96 m (not more than 25m), and does not contain any Class 3, 9a or 9b parts and therefore is not required to be provided with an EWIS system.	N/A
Specification 17 – Fire sprinkler systems [2019: Spec E1.5]				
This specification does not apply by Clauses NSW E1D4 – E1D13.				
Specification 18 – Class 2 and 3 buildings not more than 25 m in effective height [2019: Spec E1.5a]				
This specification does not apply by Clauses NSW E1D4 – E1D13.				
Specification 19 – Fire control centres [2019: Spec E1.8]				
This specification does not apply to the development as it is not required to have a fire control centre by clause E1D15.				
Specification 20 – Smoke detection and alarm systems [2019: Spec E2.2a]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Please refer to the proposed Fire Safety Schedule for details of the required Fire Safety Systems.				
Specification 21 – Smoke exhaust systems [2019: Spec E2.2b]				
The development does not require a smoke exhaust system, therefore this specification does not apply.				
Specification 22 – Smoke and heat vents [2019: Spec E2.2c]				
The development does not require a smoke and heat vent system, therefore this specification does not apply.				
Specification 23 – Residential fire safety systems [2019: Spec E2.2d]				
This specification does not apply, as the development does not contain a Class 3 residential care building, and the Class 2 part is not required to have sprinkler protection under Clauses NSW E1D4 – E1D13.				
Specification 24 – Lift installations [2019: Spec E3.1]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 25 – Photoluminescent exit signs [2019: Spec E4.8]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				

SECTION F – HEALTH AND AMENITY				
Clause	[2019]	Description	Comments	Assessment
Part F1 – Surface water management, rising damp and external waterproofing				
An assessment against Part F1, which relates to stormwater drainage, and damp-proofing has not been undertaken and is to be confirmed by a suitably qualified consultant as part of the Construction Certificate Documentation.				
Part F2 – Wet areas and overflow protection				
F2D1	New	DtS Provisions	Information only.	Noted
F2D2	F1.7(a)(b)	Wet Area Construction	Wet areas to be waterproofed to comply with Specification 26 and AS 3740 This applies to new sanitary facilities if proposed.	To be assessed at CC stage
F2D3	F1.7(c)-(e)	Rooms containing Urinals	The rooms containing urinals must be graded to a floor waste and waterproofing in accordance with this provision. The subject building contains no urinals.	N/A
F2D4	F1.11	Floor Wastes	The floor graded to floor wastes must be between 1:80- 1:50. This applies to new building works where applicable.	To be assessed at CC stage
Part F3 – Roof and wall cladding				
F3D1	New	DtS Provisions	Information only.	Noted
F3D2	F1.5	Roof Coverings	Metal roof sheeting must be to AS 1526.1 No upgrades are expected for the existing roof.	N/A
F3D3	F1.6	Sarking	Sarking must comply with AS 4200.1 & AS 4200.2. No upgrades are expected for the existing roofs and walls.	N/A
F3D4	F1.13	Glazed assemblies	Glazing within the external wall must comply with AS 2047 and this provision	To be assessed at CC stage
F3D5	New	Wall Cladding	The external wall cladding must be: <ul style="list-style-type: none"> ▪ Masonry to AS 3700; or ▪ Autoclaved aerated concrete to AS 5146.3; or ▪ Metal wall cladding to AS 1562.1. No upgrades are expected for the existing masonry wall, which is partially clad with aluminium/metal panels affixed to the external walls. Where proposed new cladding does not meet this provision, it must be assessed on a performance basis.	CRA
Part F4 – Sanitary and other facilities				
F4D1	F2.0	DtS Provisions	Information only.	Noted
F4D2	F2.1	Facilities in residential buildings	Each class 2 SOU must be provided with a kitchen sink, facilities for the preparation and cooking of food, a bath or shower, a toilet pan, a basin, laundry facilities for washing and drying clothes, including a laundry sink. A laundry sink must not double as a kitchen sink or basin.	To be assessed at CC stage
F4D3	F2.2	Calculation of number of occupants and facilities	Occupant numbers have been provided under part 2.4 of this report. An equal number of males and females has been assumed.	Noted
F4D4	F2.3	Facilities in Class 3 to 9 buildings	Sanitary facilities will be provided in the building in accordance with this clause. The number of sanitary facilities required is calculated under this section. Facilities must be provided separately for males and females. <u>Class 2 – Residential part</u> This clause does not apply to Class 2 part. <u>Class 7a – Carpark</u> No common toilet is proposed for the basement level, therefore this clause does not apply.	N/A

Clause	[2019]	Description	Comments	Assessment
F4D5	F2.4	Accessible sanitary facilities	An access assessment of the development is not part of this report.	N/A
F4D6	Table F2.4a	Accessible unisex sanitary compartments	An access assessment of the development is not part of this report.	N/A
F4D7	Table F2.4B	Accessible unisex showers	An access assessment of the development is not part of this report.	N/A
F4D8	F2.5	Construction of sanitary compartments	The sanitary compartments are capable of complying with this provision	CRA
F4D9	F2.6	Interpretation: Urinals and washbasins	Information only.	N/A
F4D10	F2.7	Microbial (legionella) control	This Clause is deleted from the BCA in NSW, as the installation of hot water, warm water and cooling water systems is regulated in the Public Health Regulation 2012.	Noted
F4D11	F2.8	Waste management	The development does not contain any class 9a parts and therefore this clause does not apply.	N/A
F4D12	F2.9	Accessible adult change facilities	The development does not contain any class 6 or 9b parts and therefore this clause does not apply. An access assessment of the development is not part of this report.	N/A
Part F5 – Room heights				
F5D1	F3.0	DtS Provisions	Information only.	Noted
F5D2	F3.1	Height of rooms and other spaces	<p>The development is capable of complying with this provision, except at the southern edge of the existing basement level, where the ceiling has an existing height of 1.95 m.</p>  <p>Reflective Ceiling plans and sections for each level in each Buildings are to be included as part of the Construction Documentations.</p>	To be assessed at CC stage

Clause	[2019]	Description	Comments	Assessment
Part F6 – Light and ventilation				
F6D1	F4.0	DtS Provisions	Information only.	Noted
F6D2	F4.1	Provisions of natural light	<u>Class 2 – residential part</u> Provision for natural light has been provided in accordance with this provision.	CRA
F6D3	F4.2	Methods and extent of natural light	The development is capable of complying with this provision.	CRA
F6D4	F4.3	Natural light borrowed from adjoining room	Where required, natural light can only be borrowed from adjoining rooms.	Noted
F6D5	F4.4	Artificial lighting	Artificial lighting to be provided to AS 1680.1. Compliance is to be confirmed by a suitably qualified electrical consultant.	To be assessed at CC stage
F6D6	F4.5	Ventilation of rooms	Natural or mechanical ventilation to be provided to all areas of the building.	CRA
F6D7	F4.6	Natural ventilation	Natural ventilation to habitable rooms and shops requires a ventilating area of no less than 5% of the floor area of the room.	CRA
F6D8	F4.7	Ventilation borrowed from adjoining room	Natural ventilation can only be borrowed from adjoining rooms.	CRA
F6D9	F4.8	Restriction on location of sanitary compartments	A sanitary compartment, that is prohibited under F4D9 from opening directly to another room, can meet requirements with the provision of mechanical exhaust ventilation to the sanitary compartment and privacy to the requirements of this clause. <u>Class 2 – residential part</u> The development is capable of complying with this provision.	CRA
F6D10	F4.9	Airlocks	This clause does not apply as no airlocks is required by Clause F6D9.	N/A
F6D11	F4.11	Carparks	Every storey of a carpark, except an open-deck carpark, must have a system of mechanical ventilation complying with AS1668.2-2012 or a system of natural ventilation complying with Section 4 of AS1668.4-2012. Suitable qualified mechanical consultant is to confirm compliance with this provision.	To be assessed at CC stage
F6D12	F4.12	Kitchen local exhaust ventilation	The building does not contain a commercial kitchen and therefore this clause does not apply.	N/A
Part F7 – Sound transmission and insulation				
An assessment against Part F7 is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Note: This part relates to measures required to reduce noise transmission between adjoining parts of the building. This part applies to class 2, 3 and 9c buildings only.				
Specification 26 – Waterproofing and water-resistance requirements for building elements in wet area [2019: Table F1.7]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 27 – Accessible adult change facilities [2019: Spec F2.9]				
The building is not required to be provided with an accessible adult change facility and therefore is not required to be assessed against this specification.				
Specification 28 – Sound insulation for building elements [2019: Spec F5.2]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				
Specification 29 – Impact sound – test of equivalence [2019: Spec F5.5]				
An assessment against this specification is not included in a DA stage report due to the level of documentation provided. Pending further engagement, where applicable, this will be assessed upon receipt of Construction Documentation.				

SECTION G – ANCILLARY PROVISIONS				
Clause	[2019]	Description	Comments	Assessment
Part G1 – Minor structures and components				
G1D1	G1.0	DtS Provisions	Information only.	Noted
G1D2	G1.1	Swimming pools	The building does not contain a swimming pool and therefore this clause does not apply.	N/A
G1D3	G1.2	Refrigerated chambers, strong-rooms and vaults	Refrigerated chambers, strong-rooms and vaults that are of a sufficient size for a person to enter are to have facilities meeting the requirements of this Clause. In the current design, the Building does not contain any refrigerated chambers, strong-rooms or and therefore this clause does not apply.	N/A
G1D4	G1.3	Outdoor play spaces	Outdoor play spaces in a Class 9b early childhood centre are to be provided with a barrier complying with this Clause. The Building does not contain a Class 9b early childhood centre and therefore this clause does not apply.	N/A
NSW G1D5	NSW G1.101	Provision for cleaning windows	A building must be provided with a safe manner of cleaning any windows located 3 or more storeys above the ground level via either windows that can be cleaned wholly from within the building or provision for the cleaning of the windows by a method complying with the WH&S Act 2001 and regulations made under that Act.	To be assessed at CC stage
Part G2 – Boilers, pressure vessels, heating appliances, fireplaces, chimneys and flues				
The building does not contain any boilers, pressure vessels, heating appliances, fireplaces, chimney or flues and therefore an assessment against this part has not been undertaken.				
Part G3 – Atrium construction				
The building does not contain an atrium that connects more than 2 storeys, or more than 3 storeys (if each storey is provided with a sprinkler system and one of those storeys is located at a level with direct egress to a road or open space). Therefore, an assessment against this part has not been undertaken and the remaining clauses have been removed from this report.				
Part G4 – Construction in alpine areas				
The building is not within an alpine area and therefore an assessment against this part has not been undertaken.				
Part G5 – Construction in bushfire prone areas				
The parcel of land selected is not identified as bush fire prone however you could still be affected by a bush fire.				
Part G6 – Occupiable outdoor areas				
This Part applies to “occupiable outdoor areas”.				
Occupiable outdoor area, is a space on a roof, balcony or similar part of a building—				
<ol style="list-style-type: none"> 1. that is open to the sky; and 2. to which access is provided, other than access only for maintenance; and 3. that is not open space or directly connected with open space. 				
The subject property does not contain an occupiable outdoor area. The backyard on the ground floor is assessed as an open space that directly connects to a road and is therefore not considered an occupiable outdoor area.				
Part G7 – Livable housing design				
Part G7 does not apply in NSW and therefore this part has been removed from this report.				
Specification 30 – Installation of boilers and pressure vessels [2019: Spec G2.2]				
This specification does not apply by Part G2.				
Specification 31 – Fire and smoke control systems in buildings containing atriums [2019: Spec G3.8]				
This specification does not apply by Part G3.				
Specification 43 – Bushfire protection for certain Class 9 buildings				
This Specification sets out bushfire protection measures for buildings described in G5D4. The subject development is not in a bushfire prone area hence this specification does not apply.				

SECTION I – SPECIAL USE BUILDINGS

The proposed development does not incorporate any uses subject to the provisions of Section I and therefore this section has been removed from the report.

SECTION J – ENERGY EFFICIENCY

An assessment against Section J has not been undertaken as part of this report.

Where applicable, a suitably qualified consultant is to be engaged to confirm compliance with this part. Credwell Energy is a specialised team and can offer this service.

If you require assistance, please contact Credwell Energy on 02 9281 8555 or info@credwell.com.au for further information.

Annexure A – Reviewed Documentation

This report has been based on the documentation listed below:

Architectural Details prepared by Garcia Negrette Architecture & Design Pty Ltd Project reference 0059			
Drawing Number	Revision	Title	Date
CC01	C	Existing Garage Plan, Ground Floor Plan and First Floor Plan	25/06/2002
CC02	B	Elevations Sections	25/06/2002
-	-	Proposed Basement Floor Plan, Ground Floor Plan and First Floor Plan	June 2024

Annexure B – Fire Safety Measures

Given the assessment in this report, the following fire safety measures are required to be installed in the building. This list is subject to change if Performance Solutions are proposed, or other options are taken during the Construction Certificate (CC) and/or construction stages.

Item No.	Fire Safety Measure	Minimum Standard of Performance
1.	Automatic fire detection and alarm systems	BCA 2022 Part E2 and Specification 20 AS 3786-2014 (amendment 1 & 2) AS1670.1-2018 (amendment 1)
2.	Building occupant warning system	BCA 2022 Part E2 and Specification 20
3.	Emergency lighting	BCA 2022 Clauses E4D2 and E4D4 AS/NZS 2293.1-2018 (amendment 1)
4.	Exit signs	BCA 2022 Clauses E4D5, NSW E4D6 and E4D8 AS/NZS 2293.1-2018 (amendment 1)
5.	Fire doors	BCA 2022 Clauses C4D9, C4D12 and Specification 12 AS 1905.1-2015
6.	Fire hydrant systems	BCA 2022 Clause E1D2 AS 2419.1-2021
7.	Fire seals protecting openings in fire-resisting components of the building	BCA 2022 Clause C4D15 AS 1530.4-2014 Manufacturer's Specification
8.	Fire shutters (option for providing protection of openings)	BCA 2022 Clauses C4D3, C4D4, C4D5 and Specification 12 Manufacturer's Specification
9.	Fire windows (option for providing protection of openings)	BCA 2022 Clauses C4D3, C4D4, C4D5 and Specification 12 Manufacturer's Specification
10.	Smoke alarms and heat alarms (internal alarms in residential units)	BCA 2022 Part E2 and Specification 20
11.	Solid core doors	BCA 2022 Clause C4D12
12.	Warning and operational signs	BCA 2022 Clauses D3D28 & E3D4 Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 Clause 108
13.	Performance Solutions	<i>This will be completed upon receipt of the final Fire Engineering Report at the CC stage</i>

Annexure C – Fire Resistance Levels

The following fire resistance levels (FRLs) are required for the various elements of the building. Where the table below refers to a fire source feature (FSF), this is as defined in the BCA as the far boundary of a road, river, lake or the like adjoining the allotment, or a side or rear boundary of the allotment, or an external wall of another building on the allotment which is not a Class 10 building.

Building Element – Type B Construction	Class 2	Class 7a	Credwell Comments
Loadbearing External Walls <ul style="list-style-type: none"> Less than 1.5m from a FSF 1.5 - 3m from a FSF 3 - 9m from a FSF 9 - 18m from a FSF 18m or more from a FSF 	90/90/90 90/60/30 90/30/30 90/30/- -/-/-	120/120/120 120/90/60 120/30/30 120/30/- -/-/-	<p>The existing building contains external walls within 1.5m of its western and eastern side boundaries (FSF).</p> <p>S5C9 concession applies to the subject building, and the carpark storey is regarded as Class 2 solely for determining the relevant fire-resisting requirements.</p>
Non-Loadbearing External Walls <ul style="list-style-type: none"> Less than 1.5m from a FSF 1.5 - 3m from a FSF 3m or more from a FSF 	-/90/90 -/60/60 -/-/-	-/120/120 -/90/60 -/-/-	<p>The external walls appear to be loadbearing, which must achieve a minimum FRL of 90/90/90.</p> <p>FRL plans are to be provided at the CC stage to confirm compliance.</p>
External Columns (not incorporated into an external wall) <ul style="list-style-type: none"> Loadbearing less than 18m from a FSF Loadbearing more than 18m from a FSF Non-loadbearing 	90/-/- -/-/- -/-/-	120/-/- -/-/- -/-/-	N/A – The existing building does not include external columns that are not incorporated into the external walls.
Common Walls and Fire Walls	90/90/90	120/120/120	N/A – The development does not contain any fire walls and therefore this clause is not applicable to the assessment. (Clause C3D8)
Internal Walls - Fire resisting lift and stair shafts – <ul style="list-style-type: none"> Loadbearing Non-loadbearing 	90/90/90 -/90/90	120/120/120 -/120/120	<ul style="list-style-type: none"> Lift – The new lift serves 3 storeys. It connects a single basement carpark level with 2 residential levels, and should achieve an FRL of no less than: <ul style="list-style-type: none"> 90/90/90 if loadbearing, or -/90/90 if non-loadbearing, and be non-combustible construction. (C3D11) Stair shafts – The internal stairways do not connect more than 3 consecutive storeys and therefore are required to be fire-isolated under this provision. (D2D4)
Internal Walls – Bounding public corridors, public lobbies and the like – <ul style="list-style-type: none"> Loadbearing Non-loadbearing 	60/60/60 -/60/60	120/-/- -/-/-	<p><u>SOU</u></p> <ul style="list-style-type: none"> If internal walls are loadbearing, they should achieve an FRL of no less than 60/60/60. If internal walls are non-loadbearing, they should achieve an of no less than -/60/60.
Internal Walls – Between or bounding sole-occupancy units – <ul style="list-style-type: none"> Loadbearing Non-loadbearing 	60/60/60 -/60/60	120/-/- -/-/-	<ul style="list-style-type: none"> Architect to confirm whether internal walls are loadbearing, along with the proposed FRL, as part of the FRL plans at the CC stage. (C3D9 & C4D12)

Building Element – Type B Construction	Class 2	Class 7a	Credwell Comments
Other loadbearing internal walls and columns	60/-/-	120/-/-	<p><u>Level 1</u> The steel column on Level 1 supporting the roof structure, must achieve a minimum FRL of 60/-/-.</p> <p>The existing steel columns on the upper floor do not appear to be fire rated and support the roof structure. A performance solution is required to justify the steel structure not meeting an FRL. (S5C21)</p> <p>FRL plans are to be provided at the CC stage</p>

FRL assessment notes:

To be assessed at CC stage

Details of the proposed FRL of building elements has not been provided to enable assessment at this stage. Upon receipt of Fire Compartmentation plans (to be provided by the architect at CC stage), and subject to further engagement, a mark-up of the plans will be undertaken and provided for reference. Any non-compliances with the DtS provisions will be raised for review.

Loadbearing elements that require an FRL:

Where required to achieve an FRL in accordance with Specification 5, the FRL of loadbearing elements are to be confirmed by a suitably qualified structural engineer and provided as part of the Construction Documentation.

Tested Systems:

Where the FRL of an element system is subject to an AS 1530.4 test report, the design and installation of the element must be strictly in accordance with the manufactures specification, test reports and/or fire assessment reports. Construction details must consider junctions between the tested system and other building elements such as the junctions listed below:

- Fire rated wall to slab
- Fire rated wall to the slab/roof above
- Fire rated wall systems connecting to other wall types / wall systems.

Credwell have not been engaged to review the junctions between systems, and it is noted that where a junction detail is proposed that is not within a manufacturers spec or test report, the detail is not deemed compliant with the DtS provisions of the BCA.

If a review of these junctions is requested, Credwell can undertake this service under additional engagement.