

A background graphic consisting of a dark blue diagonal band across the page. To the right of this band is a grayscale image of a city skyline with several skyscrapers. Overlaid on the entire background is a pattern of white, isometric 3D rectangular blocks of varying sizes, some solid and some outlined.

Building Code of Australia

Assessment Report

**Project Address: Telopea Stage 1A (Option B), Lot 5-7
Sturt Street, Telopea**



Client: Frasers Property Telopea Developer Pty Ltd (Frasers)

Report Number: 200054

Revision: R02

14 JULY 2021

REPORT REVISION HISTORY

Revision	Date Issued	Revision Description	
01	12/07/2021	DA Report – Stage 1A (Option B)	
		Prepared by Tariq Sheikh <i>Building Surveyor</i>	Verified by Chris Michaels <i>Director</i>
02	14/07/2021	Final DA Report – Stage 1A (Option B)	
		 Tariq Sheikh <i>Building Surveyor</i>	 Chris Michaels <i>Director</i>

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TABLE OF CONTENTS

1. Executive Summary	3
2. Introduction	5
2.1. General	5
2.2. Purpose of Report	6
2.3. Report Basis	6
2.4. Exclusions and Limitations	6
3. Building Code of Australia Assessment	8
3.1. Classification (Part A6)	8
3.2. Effective Height (Schedule 3)	8
3.3. Rise in Storeys (C1.2)	9
3.4. Type of Construction (C1.1)	9
3.5. Climate Zone (A1.1)	9
3.6. Floor Area and Volume Limitations (Table C2.2)	9
4. Building Code of Australia Assessment	10
4.1. Structure (BCA Section B)	10
4.2. Fire Resistance (BCA Section C)	11
4.3. Fire-Resisting Construction (Specification C1.1)	20
4.4. Access and Egress (BCA Section D)	21
4.5. Services and Equipment (BCA Section E)	35
4.6. Health and Amenity (BCA Section F)	40
4.7. Ancillary Provisions (BCA Section G)	43
4.8. Energy Efficiency (BCA Section J – Class 2 and 4 Buildings)	43
4.8.1. Building Fabric (NSW Part J(A)1)	43
4.8.2. Building Sealing (NSW Part J(A)2)	44
4.8.3. Air-Conditioning and Ventilating System (NSW Part J(A)3)	44
4.8.4. Heated Water Supply (NSW Part J(A)4)	46
4.8.5. Facilities for Energy Monitoring (NSW Part J(A)5)	46
5. Fire Safety Schedule	47
6. Summary of Non-Compliance Issues	49
7. Conclusion	59
Attachment 1	60

1. EXECUTIVE SUMMARY

The development, the subject of this report, is for the proposed construction of residential flat buildings which forms part of 'Stage 1a' works.

This report has been prepared by City Plan Services on behalf of Frasers Property Telopea Developer Pty Ltd (Frasers) and accompanies a State Significant Development Application (SSDA) submitted to the NSW Department of Planning, Industry and Environment (DPIE). The SSDA seeks Concept Approval, in accordance with Division 4.4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), for the staged redevelopment of the Telopea 'Concept Plan Area' (CPA), as well as a detailed proposal for the first stage of development, known as 'Stage 1A'.

The purpose of this report is to provide a high-level assessment for compliance with the Building Code of Australia in respect to proposed residential development, located at Sturt Street, Telopea, within the local government area of Parramatta Council. The proposed development involves the demolition of existing buildings and construction of residential apartments as part of 'Stage 1A' works.

Based on the assessment, the following summary of non-compliance's with the deemed-to-satisfy (DtS) provisions of the BCA, in relation to the proposed residential building work, have been identified and are proposed to be justified against the performance requirements of the BCA in accordance with BCA Clause A2.2. For the complete detailed summary of matters please refer to Part 6 of this report.

Clause	Performance justification
C2.14 Smoke separation in Public corridors in Class 2	Permit smoke separation to corridors - Performance Solution to address DtS non-compliance.
Spec C1.1 – 3.6 Roof lights	Permit roof light location - Performance Solution to address DtS non-compliance.
D1.2 Number of exits	Permit omission of second exit - Performance Solution to address DtS non-compliance.
D1.4 Exit travel distance	Permit extended travel distance in carpark and residential areas - Performance Solution to address DtS non-compliance.
D1.5 Distance between alternate exits	Permit distance between alternate exits - Performance Solution to address DtS non-compliance.
D1.7 Travel via fire isolated exits	D1.7(a) – Permit room to open directly to fire stair- Performance Solution to address DtS non-compliance.
	D1.7(b) - Permit discharge into covered area - Performance Solution to address DtS non-compliance.
	D1.7(c) – Permit discharge passed external walls and unprotected openings within 6m - Performance Solution to address DtS non-compliance.

D1.10	Permit discharge point of alternate exits to discharge not as far as practical - Performance Solution to address DtS non-compliance.
E1.3 Fire hydrants	Permit location of fire hydrant booster - Performance Solution to address DtS non-compliance.
E1.5 Sprinklers	Permit location of sprinkler valve room -Performance Solution to address DtS non-compliance.
E1.8 Fire control centres	Permit location of fire control room - Performance Solution to address DtS non-compliance.

2. INTRODUCTION

2.1. General

This report has been prepared by City Plan Services on behalf of Frasers Property Telopea Developer Pty Ltd (Frasers) and accompanies a State Significant Development application (SSDA) submitted to the NSW Department of Planning, Industry and Environment (DPIE). The SSDA seeks Concept approval, in accordance with Division 4.4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), for the staged redevelopment of the Telopea 'Concept Plan Area' (CPA), as well as a detailed proposal for the first stage of development, known as 'Stage 1A'.



Figure 1- Telopea Estate Concept Plan

Source: Bates Smart and Hassell

The purpose of this report is to provide a high-level assessment for compliance with the Building Code of Australia in respect to proposed development (Stage 1A), located at Sturt Street, Telopea, within the local government area of Parramatta Council. The proposed development involves the demolition of existing buildings and construction of residential apartments as part of 'Stage 1A' works:

Stage 1a: Residential Towers A, B, C, D & E
 Basement carparking
 Private Park

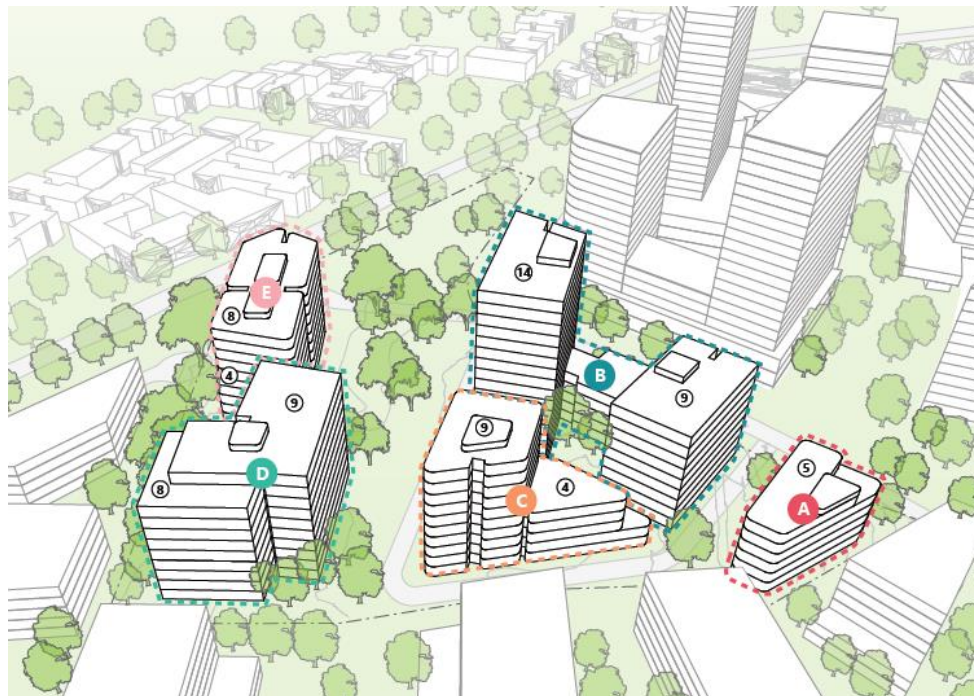


Figure 2 - Stage 1a - Proposed development

Source: Plus Architects

2.2. Purpose of Report

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

2.3. Report Basis

The following information has been directly referenced or relied upon in the preparation of this report:

- Architectural plans prepared by Plus Architects, as identified in the attached Appendix 1.
- The Building Code of Australia 2019 Amendment 1, inclusive of NSW variations (See Note 1).
- Environmental Planning and Assessment Act 1979.
- Environmental Planning and Assessment Regulation 2000.

Note1: Building Code of Australia (BCA) 2019 Amendment 1 was adopted in NSW on 1 July 2020. The amendment of the BCA in force at the date of lodgement of a Construction Certificate is the version called up by Clause 98 of the Environmental Planning & Assessment Regulation 2000 for the purpose of the building design. Therefore, comments may be subject to changes to comply with updated versions of the Building Code of Australia.

2.4. Exclusions and Limitations

1. This report has been prepared by City Plan for Frasers Property Telopea Developer Pty Ltd (Frasers) and may only be used and relied on by Frasers for the purpose agreed between City Plan and Frasers, as set out in section 2.1 and 2.2 of this report.
2. City Plan otherwise disclaims responsibility to any person other than Frasers arising in connection with this report. City Plan also excludes implied warranties and conditions, to the extent legally permissible.
3. City Plan Services Pty Ltd undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document.

4. The services undertaken by City Plan in connection with preparing this report are limited to those specifically detailed within the report and subject to scope limitations as set out in the report but specifically exclude:
 - Structural design in any form or content.
 - The Disability Discrimination Act 1992.
 - Disability (Access to Premises – Building) Standards 2010.
 - The existing level of Building Code of Australia compliance unless specifically identified in Section 2.3 within this report.
 - The operational capabilities or compliance of any existing services installed within the building.
 - Assessment of any existing Performance Solutions, including Fire Safety, addressing compliance with the Performance Requirements of the BCA.
5. This report is not a Part 4A compliance certificate under the Environmental Planning & Assessment Act 1979 or Regulation 2000.
6. The opinions, conclusions and any recommendations within this report are based on conditions encountered and information reviewed at the date of preparation of the report. City Plan has no responsibility or obligation to update this report to account for events or changes occurring after the date that the report was prepared.
7. The methodologies adopted within this report specifically relate to the subject building and must not be used for any other purpose.
8. City Plan has prepared this report based on information provided by others, including but not limited to Architectural Plans and Annual Fire Safety Statements. City Plan has not independently verified or checked beyond the agreed scope of work the validity of the documentation prepared and provided by others. City Plan accepts no liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions within the information relied upon.
9. The documentation relied upon has been reviewed only to the degree reasonable as pertaining to City Plan's scope, as defined within the contract and fee agreement. It is expressly not City Plan's responsibility to:
 - Familiarise ourselves with all information and documentation relating to the project, or the potential BCA, Access, or fire safety aspect derivatives thereof,
 - Conduct a "full BCA audit or compliance assessment" in any way defined, implied, or assumed, for matters outside of City Plans scope.
 - Prepare a holistic BCA, Access or Fire Safety strategy for the building or carry out a full assessment of all information and documentation relating to the project, or the potential BCA, Access, or Fire Safety aspect derivatives thereof.
10. Where the report relied on a site inspection, the inspection was based on a visual, non-invasive check of representative samples of the building to which the report and scope applied, and to which safe and reasonable access was available/permitted on the date and time of the inspection. The inspection should not be considered as a testing, commissioning or maintenance procedure nor act as a guarantee or warranty of any kind.

3. BUILDING CODE OF AUSTRALIA ASSESSMENT

3.1. Classification (Part A6)

The proposed building consists of:

Building	Class	Use	Area
Building C9 (Residential Towers A, B, C, D & E)	7a	Carparking including (ancillary storage & plant)	Basement levels 02,01 & Part Lower Ground floor
	7b	Loading dock & garbage holding	Part Lower Ground floor and Part Upper ground floor
	2	Residential	Part Basement 02, Part Basement 01, Part Lower Ground (LG), Upper ground (UG) and above

Note: The carpark is shared by the five towers and therefore the building has been deemed a united building for the purpose of the BCA.

3.2. Effective Height (Schedule 3)

The proposed united building will have an effective height of greater than 50m (50.60m).

RL 100.30 (Level 13) - RL 49.70 (Basement 02) = 50.60m

Note: Tower A shares a common basement carpark. Unit A.B201 of Tower A on the eastern end of the basement 02 storey protrudes more than 1 m above the average finished level of the ground at the external wall and is therefore counted as a storey in the rise in storeys and the effective height is measured by a vertical distance between the floor of the lowest storey and the topmost storey.



3.3. Rise in Storeys (C1.2)

The proposed united building will consist of a rise in storeys of Seventeen (17).

3.4. Type of Construction (C1.1)

Type A construction in accordance with Specification C1.1 of the BCA, is the applicable type of construction.

3.5. Climate Zone (A1.1)

The building is located within Climate Zone 6 within the local government area of Parramatta Council.

3.6. Floor Area and Volume Limitations (Table C2.2)

The building is compliant with maximum floor area and volume limits of:

Class 7a - The carpark is to be sprinkler protected and as such there are no maximum floor area or volume limitations for this area.

Class 7b - The loading dock and garbage holding room

Maximum Floor Area 5,000m²

Maximum Volume 30,000m³

Class 2 - The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specification C1.1 and Clause C3.11 of the NCC regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications.

4. BUILDING CODE OF AUSTRALIA ASSESSMENT

4.1. Structure (BCA Section B)



BCA Clause	Title	Assessment and Comment	Status
B1.1	Resistance to actions	The resistance of the building must be greater than the most critical action effects resulting from different combinations of actions in accordance with this clause. The structural design is to be completed by a Structural Engineer to meet the requirements of this provision.	Capable of Complying
B1.2	Determination of individual actions	The magnitude of individual actions must be determined in accordance with this clause. The structural design is to be completed by a Structural Engineer to meet the requirements of this provision.	Capable of Complying
B1.4	Determination of structural resistance of materials & forms of construction	<p>The structural resistance of the following materials and forms of construction for the following elements are to be in accordance with the standards nominated in this clause;</p> <ul style="list-style-type: none"> (a) Masonry (b) Concrete (c) Steel construction (d) Composite steel and concrete (e) Aluminium construction (f) Timber construction (g) Piling (h) Glazing assemblies (i) Termite risk management (j) Roof construction (k) Particleboard structural flooring (l) Lift shafts <p>The structural design is to be completed by a Structural Engineer to meet the requirements of this provision.</p>	Capable of Complying
B1.5	Structural Software	Structural software used in computer aided design is to comply with the requirements of this provision.	Capable of Complying
B1.6	Construction of buildings in flood hazard areas	The building is not located within a flood hazard area.	N/A


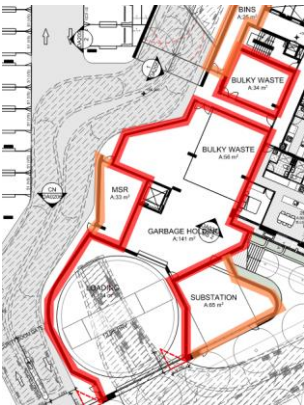
4.2. Fire Resistance (BCA Section C)

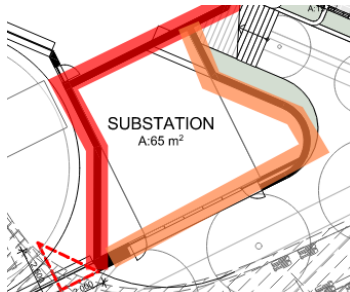
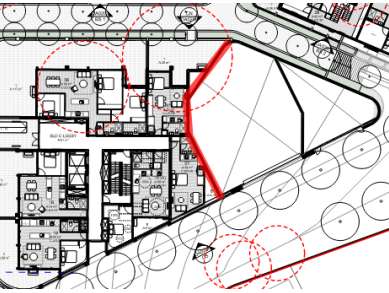
BCA Clause	Title	Assessment and Comment	Status
C1.1	Type of construction required	The type of fire resisting construction applicable is Type A construction.	Capable of Complying
C1.2	Calculation in rise in storeys	The building contains a RIS of seventeen (17).	Capable of Complying
C1.8	Lightweight construction	Any proposed fire resisting lightweight walls or fire resisting lightweight protection to steel columns is to comply with Specification C1.8.	Capable of Complying
C1.9	Non-combustible building elements	<ol style="list-style-type: none"> In a building required to be Type A construction, the following building elements and their components must be non-combustible: <ol style="list-style-type: none"> External walls and common walls, including all components incorporated in them including the façade covering, framing and insulation. The flooring and floor framing of lift pits. Non-loadbearing internal walls where they are required to be fire-resisting. A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in – <ol style="list-style-type: none"> A building required to be Type A construction; A loadbearing internal wall and loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1. The requirements of (1) and (2) do not apply to gaskets, caulking, sealants, termite management systems, glass, thermal breaks associated with glazing systems & dampproof courses. The following materials may be used wherever a non-combustible material is required: <ol style="list-style-type: none"> Plasterboard. Perforated gypsum lath with a normal paper finish. Fibrous-plaster sheet. Fire-reinforced cement sheeting. Pre-finished metal sheeting having a combustible surface finish not 	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
		<p>exceeding 1mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.</p> <p>(f) Sarking that does not exceed 1 mm thickness and have a flammability index of not greater than 5.</p> <p>(g) Bonded lamination materials where –</p> <p>(i) Each lamina, including any core, is non-combustible; and</p> <p>(ii) Each adhesive layer does not exceed 1mm in thickness and the total thickness of the adhesive layers does not exceed 2mm; and</p> <p>(iii) The Spread of Flame Index and the Smoke-Developed Index of the bonded laminated materials as a whole do not exceed 0 and 3 respectively.</p>	
C1.10	Fire hazard properties	Proposed internal linings, materials and assemblies are to be selected to comply with the required fire hazard properties of Specification C1.10.	Capable of Complying
C1.13	Fire protected timber: Concession	This concession is not available.	N/A
C1.14	Ancillary Elements	<p>An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following:</p> <ol style="list-style-type: none"> 1. An ancillary element that is non-combustible. 2. A gutter, downpipe or other plumbing fixture or fitting. 3. A flashing. 4. A grate or grille not more than 2m² in area associated with a building service. 5. An electrical switch, socket-outlet, cover plate or the like. 6. A light fitting. 7. A required sign. 8. A sign other than one provided under (1) or (7) that- <ol style="list-style-type: none"> (a) Achieves a ground number of 1 or 2; and (b) Does not extend beyond one storey; and (c) Does not extend beyond one fire compartment; and 	Capable of Complying


BCA Clause	Title	Assessment and Comment	Status
		<p>(d) Is separated vertically from other signs permitted under (8) by at least 2 storeys.</p> <p>9. An awning, sunshade, canopy, blind or shading hood other than one provided under (1) that –</p> <p>(a) Meets the requirements of Table 4 of Specification C1.10 as for an internal element; and</p> <p>(b) Serves a storey –</p> <p>(i) At ground level; or</p> <p>(ii) Immediately above a storey at ground level; and</p> <p>(iii) Does not serve an exit, where it would render the exit unusable in a fire.</p> <p>10. A part of a security, intercom or announcement system.</p> <p>11. Wiring.</p> <p>12. A paint, lacquer or a similar finish.</p> <p>13. A gasket, caulking, sealant or adhesive directly associated with (1) to (11).</p>	
C2.2	General floor area and volume limitations	<p>The fire compartment sizes meet the requirements of this Clause</p> <p>Class 7a - The carpark is to be sprinkler protected and as such there are no maximum floor area or volume limitations for this area.</p> <p>Class 7b - The loading dock and garbage holding room</p> <p>Maximum Floor Area 5,000m²</p> <p>Maximum Volume 30,000m³</p> <p>Class 2 - The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specification C1.1 and Clause C3.11 of the NCC regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications.</p>	Capable of Complying
C2.6	Vertical separation of openings in external walls	The building is required to be protected with sprinklers throughout and therefore vertical separation is not required.	N/A
C2.7	Separation by fire walls	<p>Fire walls are required to be designed to comply with the clause.</p> <p>The following fire walls are proposed:</p>	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
		<p>Fire walls are to be provided in the following locations;</p> <p>Basement 02</p> <ul style="list-style-type: none"> Between the Eastern Carpark and the Residential unit (highlighted purple)  <p>Basement 01</p> <ul style="list-style-type: none"> Between the fire pump room and the Residential units (highlighted purple)  <p>Lower Ground floor</p> <ul style="list-style-type: none"> Between the Eastern/western Carpark and the Residential corridor (highlighted purple) 	

BCA Clause	Title	Assessment and Comment	Status
		 <ul style="list-style-type: none"> Between the loading dock/garbage holding room (Class 7b) and eastern carpark (highlighted red)  <ul style="list-style-type: none"> Between Substation and the loading dock/garbage holding (Highlight orange) 	

BCA Clause	Title	Assessment and Comment	Status
		 <p>Upper Ground floor</p> <ul style="list-style-type: none"> Between residential units in BLD C and Substation/loading dock (Highlighted red) 	
C2.8	Separation of classifications in the same storey	<p>If a building has parts of different classifications located alongside one another in the same storey,</p> <ul style="list-style-type: none"> each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or the parts must be separated in that storey by a fire wall. <p>The proposed fire walls are identified in C2.7 above.</p>	Capable of Complying
C2.9	Separation of classifications in different stories	<p>The floors between parts of different classifications must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey.</p>	Capable of Complying
C2.10	Separation of lift shafts	<p>The lift shafts are required to be fire separated from the rest of the building in accordance with this clause.</p>	Capable of Complying
C2.11	Stairways and lifts in one shaft	<p>The stairs and lift shaft are located in different shafts.</p>	Capable of Complying
C2.12	Separation of equipment	<p>The following equipment are required to be fire separated from the remainder of the building by 120/120/120 FRL construction:</p>	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
		<ul style="list-style-type: none"> ▪ Lift motor rooms and lift control panels. ▪ Emergency Generators. ▪ Central smoke control plant. ▪ Boilers. ▪ Battery systems. 	
C2.13	Electricity supply system	<p>The electricity substation is required to be fire separated from the remainder of the building. The BCA requires 2 hr separation however the electricity authority generally requires 3 hr separation.</p> <p>The substation is located adjacent the loading dock at lower ground and upper ground adjacent tower C.</p> <p>Any main switchboard located in the building which sustains emergency equipment operating in emergency mode, is required to be fire separated from the remainder of the building by 2 hr fire resisting construction.</p> <p>Construction should achieve an FRL of 120/120/120, doorways are required achieve an FRL of -/120/30 and to be self-closing and all penetrations in enclosures are to be appropriately fire stopped.</p> <p>All switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment switchgear to the emergency equipment switchgear.</p> <p>Electrical conductors and switchboards are required to comply with this clause.</p>	Capable of Complying
C2.14	Public corridors in Class 2 & 3 buildings	<p>Public corridors within the residential portion of the building are generally separated by smoke proof walls at 40m intervals however the following areas exceed 40m and are proposed to be addressed via a fire engineered performance solution;</p> <p>Tower B</p> <ul style="list-style-type: none"> ▪ Upper ground floor Approx. 54m. <p>Tower D</p> <ul style="list-style-type: none"> ▪ Upper ground floor Approx. 46m. <p>Tower E</p> <ul style="list-style-type: none"> ▪ Upper ground floor Approx. 55m. 	Performance Solution

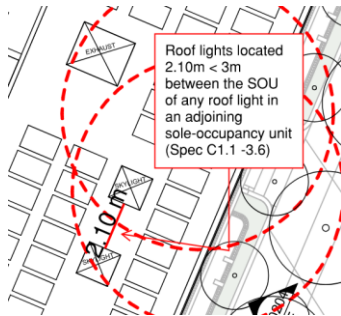
BCA Clause	Title	Assessment and Comment	Status
		 <p>Example of public corridor exceeding 40m</p>	
C3.2	Protection of openings in external walls	Openings are located more than 3m from the allotment boundary.	Capable of Complying
C3.3	Separation of external walls and associated openings in different fire compartments	External walls and associated openings in different fire compartments are greater than 6m apart.	N/A
C3.4	Acceptable method of protection	<p>Windows requiring protection must be protected by one of the means:</p> <ul style="list-style-type: none"> ▪ External wall-wetting sprinklers with windows that are automatically or permanently fixed in the closed position. ▪ -/60/- fire windows (Automatic or permanently fixed in the closed position) ▪ -/60/- automatic fire shutters ▪ Doorways which require protection can be protected externally with wall wetting sprinklers with doors that are self-closing or automatic closing, or ▪ -/60/30 fire doors which are self-closing or automatic closing. <p>Fire doors, fire windows and fire shutters are required to comply with Specification C3.4.</p>	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
C3.5	Doorways in fire walls	Doors in fire walls are to have the FRL's and features required by this clause.	Capable of Complying
C3.6	Sliding fire doors	No sliding fire doors proposed.	N/A
C3.7	Protection of doorways in horizontal exits	The horizontal exits are required to be protected in accordance with this Clause.	Capable of Complying
C3.8	Openings in fire isolated exits	The fire-isolated exits are required to be protected by -/60/30 self-closing fire doors.	Capable of Complying
C3.9	Service penetrations in fire isolated exits	Service are not to penetrate through fire isolated exits unless permitted by this clause.	Capable of Complying
C3.10	Fire isolated lift shafts	The lift doors are required to be -/60/- fire doors and comply with this provision. A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift shaft must be backed by construction having an FRL of not less than -/60/60 if it exceeds 35 000 mm ² in area.	Capable of Complying
NSW C3.11	Bounding construction	Doors from sole occupancy units opening into enclosed public corridors are required to be protected by -/60/30 self-closing fire doors. A doorway from any other room not within a SOU, must be protected by -/60/30 self-closing fire doors if it opens to a public corridor, public lobby or the like within the residential portion of the building.	Capable of Complying
C3.12	Openings in floors and ceilings for services.	Fire separation between floors is required to be maintained where services penetrate through floors unless the services are located in fire rated shafts.	Capable of Complying
C3.15	Openings for service installations	Services that penetrate a building element that is required to have an FRL must be protected utilising one of the options listed under this clause. Test certificates describing each individual service penetration and configuration will be required at the construction certificate stage.	Capable of Complying
C3.16	Construction joints	Construction joints in building elements required to be fire resistant are required to be protected in accordance with this clause.	Capable of Complying
C3.17	Columns protected with	Any columns protected with fire resisting lightweight construction to achieve an FRL	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
	lightweight construction to achieve an FRL	must be installed in a manner that's identical to the tested prototype.	

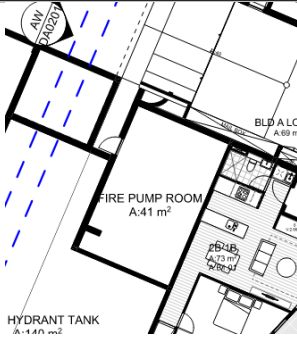


4.3. Fire-Resisting Construction (Specification C1.1)

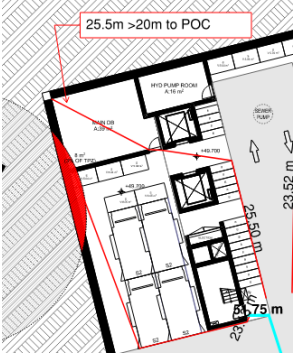

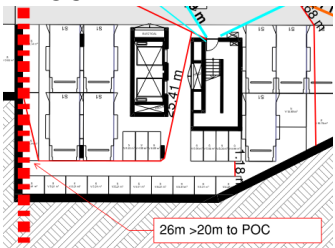
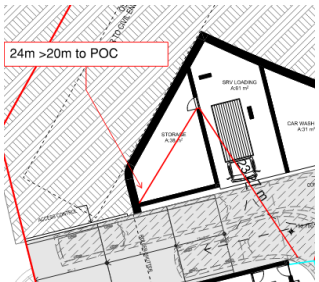
BCA Clause	Title	Assessment and Comment	Status
2.1	Exposure to fire source features	Exposure to fire source features is to be determined in accordance with this clause.	Note
2.2	Fire protection for support of another part	When determining FRL's applicable to a particular building element, the requirements of this clause are required to be complied with.	Capable of Complying
2.3	Lintels	Lintels are to be protected as required by the requirements of this clause.	Capable of Complying
2.4	Method of attachment not to reduce the fire resistance of building elements	The method of attaching or installing a finish, lining, ancillary element or service installation to the building element must not reduce the fire-resistance of that element to below that required.	Capable of Complying
2.5	General concessions	Roof top plant rooms need not have an FRL if they are non-combustible and they only contain equipment specified in this clause.	Capable of Complying
2.6	Mezzanine floors: concession	The building does not contain mezzanines that are subject to this provision.	N/A
2.7	Enclosure of shafts	Fire rated shafts are to be enclosed at the top and bottom in accordance with the requirements of this clause. Bin rooms located in the basement carpark forming part of the garbage shafts are required to be fire separated to ensure compliance with this clause.	Capable of Complying
3.1	Fire resistance of building elements	Generally building elements are required to achieve the following FRL's; Loading dock & garbage holding: 4 hrs Carpark & ancillary storage: 2 hrs Residential: 1½ hrs A loadbearing internal wall and a loadbearing fire wall must be of concrete or masonry.	Capable of Complying
3.5	Roof: Concession	The roof is not required to achieve an FRL as the building:	Capable of Complying

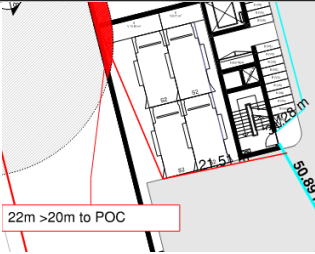

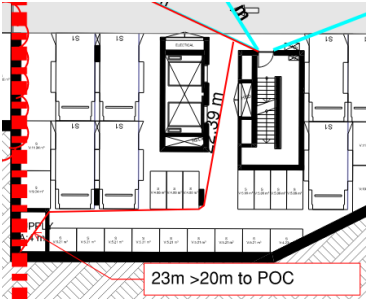

BCA Clause	Title	Assessment and Comment	Status
		<ul style="list-style-type: none"> has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or has a rise in storeys of 3 or less; or is of Class 2; 	
3.6	Roof lights	<p>Roof lights are not permitted to be located less than 3 m from another roof light in the adjoining SOU.</p> <p>Tower B</p> <ul style="list-style-type: none"> Distance between Roof lights are measured 2.10m being less than 3m. This is proposed to be Performance Justified. 	Performance Solution
3.7	Internal wall and column: concession	Concession is not available due to the effective height of the building.	N/A

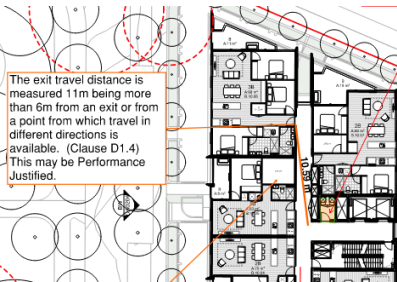
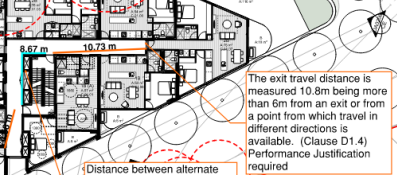
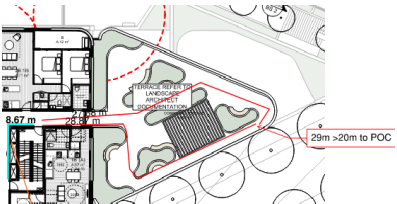

4.4. Access and Egress (BCA Section D)

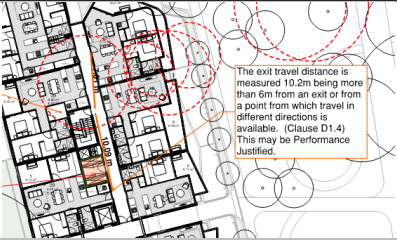
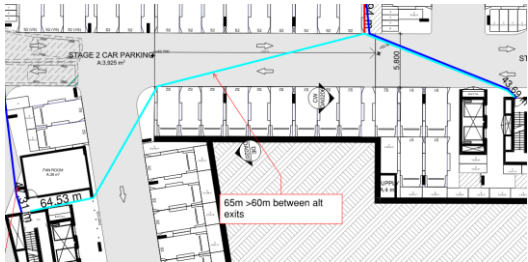
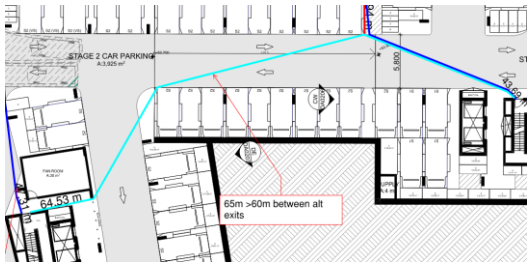
BCA Clause	Title	Assessment and Comment	Status
D1.2	Number of exits required	<p>The proposed development is generally provided with two exits to all areas with the exception of the following areas which is proposed to be performance justified:</p> <p>Basement 01</p> <ul style="list-style-type: none"> Fire Pump Room (B01) 	Performance Solution

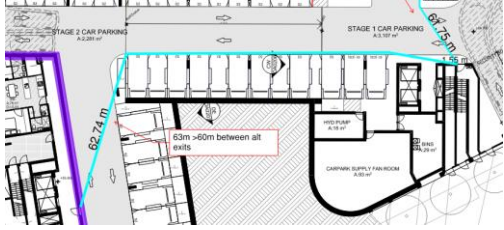
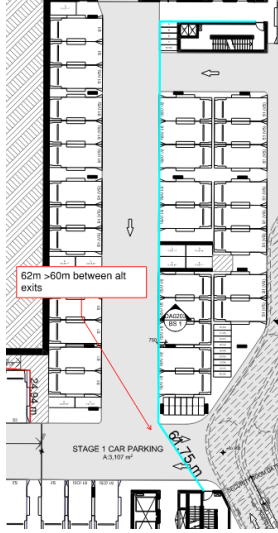

BCA Clause	Title	Assessment and Comment	Status
		 <p>Tower A</p> <ul style="list-style-type: none"> The lobby areas (LG -L2)  <p>Tower E</p> <ul style="list-style-type: none"> Unit E.LG.01 (LG) 	
D1.3	When fire isolated exits are required	Stairways that service the basement levels and the upper residential levels are all fire-isolated stairways.	Capable of Complying
D1.4	Exit travel distances	<p>The Deemed to Satisfy (DtS) provisions of the BCA require exit travel distances in the carpark areas to be no more than 20m to a point of choice (POC) and no more than 40m to the nearest exit.</p> <p>The following areas within the basement design have extended travel distances that exceed DtS limits and will be principally justified by Performance Justification.</p> <p>Basement 02</p>	Performance Solution

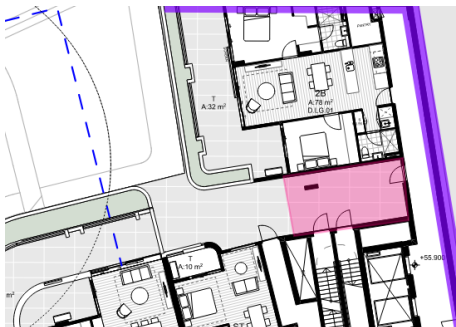
BCA Clause	Title	Assessment and Comment	Status
		<ul style="list-style-type: none"> Main DB – Approx. 25.5m to POC  <ul style="list-style-type: none"> Access ramp between the east & west carpark – Approx. 47.5 m to Exit  <ul style="list-style-type: none"> Storage cage - Approx. 26m to POC  <p>Basement 01</p> <ul style="list-style-type: none"> Storage room – Approx. 24m to POC  <ul style="list-style-type: none"> Storage cage – Approx. 22 m to POC 	

BCA Clause	Title	Assessment and Comment	Status
		 <ul style="list-style-type: none"> Access ramp between the east & west carpark – Approx. 47.5 m to Exit  <ul style="list-style-type: none"> Supply air room - Approx. 23m to POC 	
		<p>The DtS provisions of the BCA require exit travel distances in the residential areas to be no greater than 6m from a unit to a POC or a single exit and area not within SOU are required to be no more than 20m to an exit or POC.</p> <p>The following areas below exceed the DtS limits and will be principally justified by performance justification:</p> <p>Tower A</p> <ul style="list-style-type: none"> B02 - Approx. 6.4m to POC LG – L2 Approx. 8.3m to Exit  <p>Tower B</p>	<p>Performance Solution</p>



BCA Clause	Title	Assessment and Comment	Status
		<ul style="list-style-type: none"> ▪ LG Approx. 9.1m to POC ▪ UG Approx. 11.6m to POC ▪ L1- L2 Approx. 11.2m to POC ▪ L3- L13 Approx. 11m to POC  <p>Tower C</p> <ul style="list-style-type: none"> ▪ L1- L3 Approx. 10.8m to POC ▪ L4 (Communal) Approx. 29m to POC   <p>Tower D</p> <ul style="list-style-type: none"> ▪ LG Approx. 8.3m to POC ▪ UG Approx. 11m to POC ▪ L1- L8 Approx. 10.8m to POC  <p>Tower E</p> <ul style="list-style-type: none"> ▪ L1- L7 Approx. 10.2m to POC 	



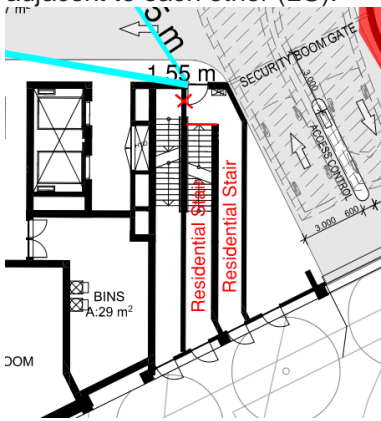
BCA Clause	Title	Assessment and Comment	Status
			
D1.5	Distance between alternative exits	<p>Exits that are required to serve as alternative means of egress must not be more than 45m apart in a residential building and not more than 60m in all other parts.</p> <p>The distance between alternative exits generally comply with the maximum DtS distances above with the exception of the following areas that are proposed to be Performance Justified:</p> <p>Basement 02</p> <ul style="list-style-type: none"> Access ramp between the east & west carpark – Approx. 65 m between alternate exits  <p>Basement 01</p> <ul style="list-style-type: none"> Access ramp between the east & west carpark – Approx. 65 m between alternate exits  <p>Lower Ground</p> <ul style="list-style-type: none"> Access ramp between the east & west carpark – Approx. 63 m between alternate exits 	Performance Solution

BCA Clause	Title	Assessment and Comment	Status
		 <ul style="list-style-type: none"> Fire stairs between the North & South of the carpark – Approx. 62 m between alternate exits  <p>Exits required as alternative means of egress must be located not less than 9m apart and located so that the alternative paths of travel do not converge such that they become less than 6m apart.</p> <p>The following distances between exits are proposed to be addressed via a fire engineered performance solution:</p> <p>Tower C</p> <ul style="list-style-type: none"> The fire isolated exits serving tower C – Approx. 8.7m in lieu of 9m. 	

BCA Clause	Title	Assessment and Comment	Status
NSW D1.6	Dimensions of exits and paths of travel to exits	A required exit or path of travel to an exit are required to be a minimum unobstructed height of not less than 2m and minimum width of 1m.	Capable of Complying
D1.7	Travel via fire isolated exits	<p>A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from:</p> <ul style="list-style-type: none"> a public corridor, public lobby or the like; or a sole-occupancy unit occupying all of a storey; or a sanitary compartment, airlock or the like. 	Capable of Complying
		<p>The DtS provisions of the BCA requires a fire-isolated stairway (FIS) or fire-isolated ramp to provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway to a road or open space or into a covered area that is open for at least 1/3 of its perimeter and has an unobstructed height of not less than 3m and provides an unimpeded path of travel to a road or open space of not more than 6m. The following areas requires a design change or Performance Solution to permit FIS discharge into covered area that is not open to 1/3 of its perimeter:</p> <p>Tower D</p> <ul style="list-style-type: none"> FIS discharge in covered area approx. 3.21m open in lieu of 5.13m (LG)  <p>Tower E</p> <ul style="list-style-type: none"> FIS discharge in covered area approx. 2.10m open in lieu of 2.52m (LG) 	Performance Solution

Page | 29

BCA Clause	Title	Assessment and Comment	Status
		<ul style="list-style-type: none"> 3 x FS exits with discharge at LG Approx. 2.34-4.2m  <p>Tower E</p> <ul style="list-style-type: none"> 2 x FS exits with discharge at LG Approx. 1.10m 	
D1.8	External Stairs or ramps in lieu of Fire-isolated exits	External stairs are not provided in lieu of fire isolated exits.	N/A
D1.9	Travel via non-fire-isolated stairways or ramps	A non-fire-isolated stair serving as a required exit must provide a continuous means of travel by its own flights and landings to a level at which egress to a road or open space is available.	N/A
D1.10	Discharge from exits	The discharge point of the fire isolated exits is required to be connected to the road by a path that is not less than the exit width or a minimum 1m to which the external path serves. Where there is a change of level, the path must contain a complying stair or ramp.	Capable of Complying
		<p>Discharge point of alternative exits must be located as far apart as practical. The following exits are not located as far apart as practical. Performance justification is required.</p> <p>Tower B</p> <ul style="list-style-type: none"> The two residential stairs (western) are located adjacent to each other (UG). 	Performance Solution

BCA Clause	Title	Assessment and Comment	Status
		 <ul style="list-style-type: none"> The two residential stairs (eastern) are located adjacent to each other (UG).  <p>Tower C</p> <ul style="list-style-type: none"> The two residential stairs are located adjacent to each other (LG). 	
D1.11	Horizontal exits	Horizontal exits are proposed between the carpark and residential lobbies on Basement 02 and Lower Ground. These horizontal exits are required to be provided with protection to these exits in accordance with this Clause.	Capable of Complying
D1.12	Non-required stairways, ramps or escalators	Non-required stairways, ramps or travelators are not proposed.	N/A

BCA Clause	Title	Assessment and Comment	Status
D1.13	Number of persons accommodated	The united building are residential apartments towers with associated carparking. It is reasonable that less than 100 people per stair core will be accommodated in each tower.	Capable of Complying
D1.16	Plant rooms and lift rooms: concession	<p>A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area less than 100m² or plant or lift machine rooms with a floor area of less than 200 m², for all but one point of egress.</p> <p>Ladders are required to comply with AS1657 and the requirement of this clause.</p>	Note
D1.17	Access to lift pits	Access to lift pits is to be in accordance with this clause.	Capable of Complying
D2.2	Fire-isolated stairways and ramps	A stairway or ramp (including any landings) that is required to be within a fire-resisting shaft must be constructed of non-combustible materials and so that if there is local failure it will not cause structural damage to or impair the fire-resistance of the shaft.	Capable of Complying
D2.3	Non-fire isolated stairs and ramps	It is assumed that any non-fire-isolated stairway will be concrete.	Capable of Complying
D2.4	Separation of rising and descending stair flights	<p>Rising and descending fire-isolated stairs are required to be separated with non-combustible construction and smoke proof construction in accordance with Clause 2 of Specification C2.5.</p> <p>The proposal provides rising and descending stairs that are connected. The proposed design indicates separation at the descending (residential stairs) with smoke proof construction.</p> <p>Separation is to also be applied at the basement stairs (rising stairs).</p>	Capable of Complying
D2.7	Installation in exits and paths of travel	<p>Access to service shafts and services other than to firefighting or detection equipment as permitted in the Deemed-to-Satisfy provisions of Section E, must not be provided from a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp.</p> <p>Gas or other fuel services must not be installed in a required exit.</p> <p>Electrical or telecommunications cupboards opening onto a corridor or the like must be of non-combustible construction and smoke sealed</p>	Capable of Complying

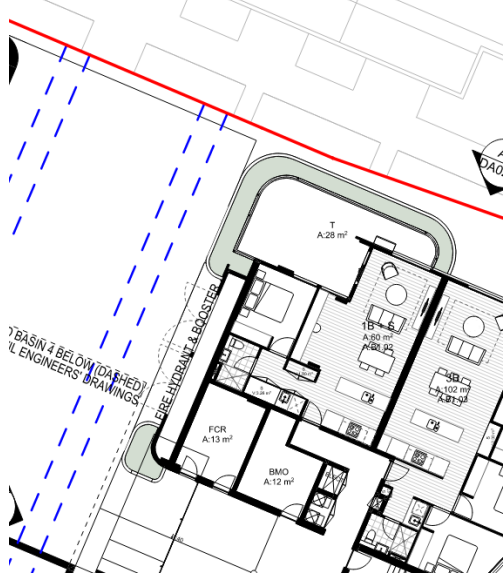
BCA Clause	Title	Assessment and Comment	Status
		<p>from the corridor (including metal lining to inside face of door and smoke seals to door).</p> <p>Only electrical wiring associated with services specified in the clause, are permitted to be installed in a fire isolated exit.</p>	
D2.8	Enclosure of space under stairs and ramps	No enclosure of space under stairs proposed.	N/A
D2.9	Width of stairways	A required stairway or ramp that exceeds 2m in width is counted as having a width of only 2m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2m	Capable of Complying
D2.10	Pedestrian ramps	<p>A ramp must:</p> <ol style="list-style-type: none"> 1. where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS1428.1; or 2. in any other case, have a gradient not steeper than 1:8. <p>The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586.</p>	Capable of Complying
D2.11	Fire-isolated passageways	The fire rating of fire-isolated passageways is required to be achieved from the outside.	Capable of Complying
D2.12	Roof as open space	<p>The roof over the basement carpark is deemed to be roof as open space. Exits are provided that discharges to the roof.</p> <p>The roof is required to have an FRL of not less than 120/120/120; and not have any roof lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space.</p>	Capable of Complying
NSW D2.13	Goings & risers	<p>Goings and risers are to be designed to comply with this clause including:</p> <ul style="list-style-type: none"> ▪ going and riser dimensions; and ▪ slip resistance. 	Capable of Complying
D2.14	Landings	Landings are to be designed in accordance with this clause.	Capable of Complying
NSW D2.15	Thresholds	Thresholds are to comply with this clause.	Capable of Complying
NSW D2.16	Barriers to prevent falls	Balustrades are to be designed to comply with this clause.	Capable of Complying

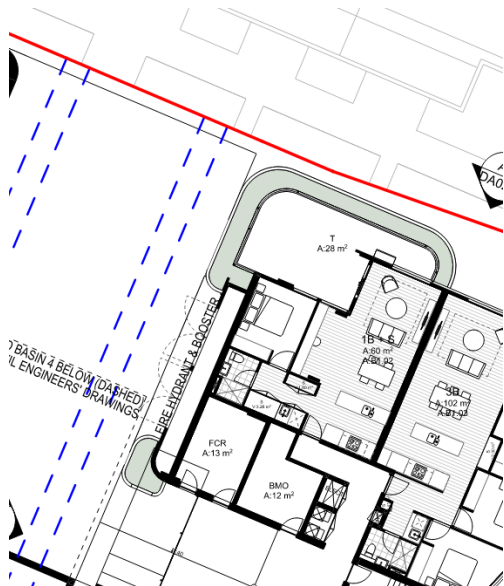
BCA Clause	Title	Assessment and Comment	Status
D2.17	Handrails	Handrails are required along at least one side of all stairways or ramps, or on both sides of stairs or ramps with a total width of more than 2m. Handrails are required to be installed in accordance with AS1428.1-2009 except for fire-isolated stairs.	Capable of Complying
D2.18	Fixed platforms, walkways, stairways & ladders	Fixed platforms, walkways, stairways & ladders are to be designed in accordance with this clause.	Note
NSW D2.19	Doorways and doors	The doors to the designated exits are swinging doors. The power operated door at the lobbies of the towers are required to be designed to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm.	Capable of Complying
D2.20	Swinging doors	Exit doors are required to swing in the direction of egress and are to be addressed during the detailed design phase and/or prior to the issue of a construction certificate.	Capable of Complying
NSW D2.21	Operation of latch	Doors in required exits or forming part of a required exits must be readily openable without a key from the egress side, by a single hand downward action on a single device which is located between 900mm and 1.1m from the floor and comply with the requirements of this clause.	Capable of Complying
D2.22	Re-entry from fire-isolated exits	Doors of a fire-isolated exit must not be locked from the inside a fire-isolated exit serving any storey above an effective height of 25m, throughout the exit. This requirement does not apply to a door fitted with a fail-safe device that automatically unlocks the door upon the activation of a fire alarm and: <ul style="list-style-type: none"> on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation. 	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
D2.23	Signs on doors	A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to exit door and smoke doors, in accordance with this clause.	Capable of Complying
D2.24	Protection of openable windows	<p>A window opening must be provided with protection, in accordance with this clause, if the floor below the window is 2 m or more above the surface beneath in a bedroom in a Class 2.</p> <p>A barrier with a height not less than 865mm above the floor is required to an openable window when a child resistant release mechanism is provided and for openable windows 4m or more above the surface beneath. The barrier must not have any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing.</p>	Capable of Complying
Part D3 – Access for People with a Disability			
D3.1	General building access requirements	In accordance with Table D3.1, access is required to be provided to and within the building.	Refer to separate Access Report.

4.5. Services and Equipment (BCA Section E)

BCA Clause	Title	Assessment & Comment	Status
E1.3	Fire hydrants	<p>A fire hydrant system must be provided in accordance with this clause to serve the whole building and must also be installed in accordance with AS 2419.1. Where internal hydrants are provided, they must only serve the storey in which they are located.</p> <p>There are currently a few fire hydrant pump rooms located in different locations across Basement 02 and Basement 01. Further design development is required at Construction Certificate stage.</p> <p>The fire hydrant booster is located adjacent the entry to Tower A and is not located within sight of the main entrance into the building and not facing the street, noting that there are multiple pedestrian entries. A Performance Solution is required to justify this technical non-compliance.</p>	Capable of Complying /Performance Solution

BCA Clause	Title	Assessment & Comment	Status
		 <p>Please note on floor fire hydrants are required in the carpark in order to achieve coverage.</p> <p>For the purpose of this assessment, we have determined the fire hydrant pump room located next to the fire hydrant booster of tower A as the only pump room and not considered the hydrant pump rooms in the basement area for compliance.</p>	
E1.4	Fire hose reels	A hose reel system must be provided to serve the whole building. The hose reel system must be installed in accordance with this clause and AS 2441.	Capable of Complying
E1.5	Sprinklers	<p>A sprinkler system must be installed throughout the whole building and must comply with Specification E1.5.</p> <p>Where a combined hydrant and sprinkler system is to be proposed the combined system shall incorporate a ring main for each pressure zone in accordance with AS 2118.6-2012. Pressure reducing valves will be required for towers exceeding 35m in effective heights. Further details are to be provided at Construction Certificate stage.</p>	Capable of Complying
E1.6	Portable fire extinguishers	Portable fire extinguishers are to comply with this provision and sections 1, 2, 3 and 4 of AS 2444.	Capable of Complying
E1.8	Fire control centres	The effective height of the united building is over 50m. A fire control room is required in accordance with Specification E1.8.	Performance Solution

BCA Clause	Title	Assessment & Comment	Status
		<p>There is a technical non-compliance as the fire control room is in Tower A and is not located from the front entrance of the building given there are multiple entries. Performance justification will need to address this.</p> 	
E1.9	Fire precautions during construction	<p>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.</p> <p>After the building has reached an effective height of 12 m the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storey's and any required booster connections must be installed.</p>	Capable of Complying
E1.10	Provision for special hazards	No special hazards have been identified.	Note
E2.2	General requirements	<p>A smoke hazard management system is to be provided in accordance with Table E2.2a</p> <p>The following stairs are required to have stair pressurization installed in accordance with AS/ANZ 1668.1:</p> <ul style="list-style-type: none"> All fire isolated stairs serving residential areas have been assessed as serving storeys above 25m effective height. 	Capable of Complying

BCA Clause	Title	Assessment & Comment	Status
		<p>The proposed basement storeys do not exceed more than 2 below ground storeys, with Basement 02 storey been assessed as being counted in the rise in storeys. Based on this assessment, the current design of the fire stairs serving the basement storeys, do not connect more than 2 basement storey and in cases where they are provide independent discharge, these basement stairs are not required to be pressurised.</p> <p>Please note, where a basement fire stair is proposed to share a fire isolated passageway for discharge with descending residential fire stairs. These fire stairs are to be assessed as one stair system and therefore are required to be pressurized. Compliance is likely to require performance justification, subject to detailed mechanical engineer input at the design development stage.</p> <p>Car parking Areas</p> <ul style="list-style-type: none"> The carparking levels are to be provided with a mechanical ventilation system in accordance with AS1668.2. It is assumed throughout the building, a fire sprinkler systems will be utilised in the places required by this Clause. <p>Residential Areas</p> <ul style="list-style-type: none"> A smoke detection and alarm system complying with NCC2019 specification E2.2a must be installed throughout the residential areas. An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must: <ul style="list-style-type: none"> be designed and installed to operate as a smoke control system in accordance with AS 1668.1; or incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and be arranged such that the air-handling system is shut down and the smoke dampers are 	

BCA Clause	Title	Assessment & Comment	Status
		<p>activated to close automatically by smoke detectors complying with Clause 7.5 of AS 1670.1; and for the purposes of this provision, each SOU in the Class 2 part is treated as a separate fire compartment.</p> <ul style="list-style-type: none"> Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a car park ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. 	
E3.1	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1.	Capable of Complying
E3.2	Stretcher facility in lifts	The lift/s specified in this clause, must be above to accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.	Capable of Complying
E3.3	Warning against use of lifts in fire	Warning signs must be displayed near every lift call button in accordance with this clause.	Capable of Complying
E3.4	Emergency lifts	Emergency lift/s complying with this clause and Spec E3.1 must be installed within the building.	Capable of Complying
E3.5	Landings	Access and egress to and from lift well landings must comply with the DTS provision of Section D	Capable of Complying
E3.6	Passenger lifts	The lifts are required to be of a type and have features for people with disabilities as required by this clause.	Capable of Complying
E3.7	Fire service controls	Fire service controls are required to every lift serving any storey above an effective height of 12m. Fire service controls are required to comply with the requirements of this provision.	Capable of Complying
E3.9	Fire service recall operation switch	Each group of lifts must be provided with one fire service recall control switch where fire service controls are required by E3.7. Fire recall operation switches are to comply with the requirements of this provision.	Capable of Complying

BCA Clause	Title	Assessment & Comment	Status
E3.10	Lift car fire service drive control switch	Lift car fire service drive control switch required by E3.7 must be activated from within the car and the switch must comply with the requirements of this clause.	Capable of Complying
E4.2 to E4.4	Emergency lighting requirements	Emergency lighting must be provided in accordance with these clauses. Emergency lighting is required to comply with AS2293.1-2005.	Capable of Complying
E4.5 to E4.8	Exit signs	Exit signage must be provided in accordance with this clause. Exit signage is required to comply with AS2293.1-2005 and be clearly visible at all times.	Capable of Complying
E4.9	Emergency warning and intercom systems	EWIS is required in accordance with AS1670.4.	Capable of Complying

4.6. Health and Amenity (BCA Section F)

BCA Clause	Title	Assessment and Comment	Status
F1.0	Deem to satisfy provisions	Performance requirement FP1.4, for the prevention of the penetration of water through external walls, is required to be complied with.	Capable of Complying
F1.1	Stormwater drainage	Stormwater drainage is required to be designed to comply with AS/NZS 3500.3-2015.	Capable of Complying
F1.4	External above ground membranes	Waterproofing membranes for external above ground use must comply with AS 4654.1-2012 & AS 4654.2-2012	Capable of Complying
F1.5	Roof coverings	Lightweight metal roof sheeting is to comply with AS1562.1.	Capable of Complying
F1.6	Sarking	Sarking-type materials used for weatherproofing of roofs and walls are required to comply with AS/NZS 4200 Parts 1 and 2.	Capable of Complying
F1.7	Waterproofing of wet areas in buildings	Waterproofing of wet areas are required to comply with this clause 76 AS 3740.	Capable of Complying
F1.9	Damp-proofing	Damp proofing is required to be provided in accordance with this clause.	Capable of Complying
F1.10	Damp-proofing of floor on ground	Damp proofing is required to be provided in accordance with this clause.	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
F1.11	Provision of floor wastes	The floor of each bathroom and laundry in the residential sole occupancy units are to be provided with a floor waste.	Capable of Complying
F1.12	Sub-floor ventilation	Where provided sub-floor ventilation is to be in accordance with this Clause.	Capable of Complying
F1.13	Glazed assemblies	Glazed assemblies to comply with AS 2047 as applicable.	Capable of Complying
F2.1	Facilities in residential buildings	<p>The residential portion of the building is to be provided with appropriate facilities in accordance with Table F2.1. Generally, provision of the following facilities within each unit will comply:</p> <ul style="list-style-type: none"> ▪ A bath or shower; and ▪ A closet pan & wash basin; and ▪ Kitchen; and ▪ Wash tub and space for washing machine and drier. 	Capable of Complying
F3.1	Height of rooms and other spaces	The minimum ceiling height requirements are to comply with the requirements of this provision.	Capable of Complying
F4.1-4.3	Provision of natural light	<p>Natural lighting is required to be provided in all habitable rooms of the residential units.</p> <p>A required window that faces a boundary of the wall of the same building must not be less than a horizontal distance of 1m and 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill.</p>	Capable of Complying
F4.4	Artificial lighting	Artificial lighting is to be provided in accordance with AS/NZS1680.0 to spaces required by this clause.	Capable of Complying
F4.5-4.7	Ventilation of rooms	Ventilation is to be provided by natural or mechanical means in accordance with this provision and Clause F4.6.	Capable of Complying
F4.11	Car park exhaust	Each storey of the carpark must have a system of ventilation complying with AS1668.2 or permanent natural ventilation in accordance with Section 4 of AS1668.4.	Capable of Complying
F5.1	Application of part	The sound insulation requirements of F5.2, F5.3, F5.4, F5.5, F5.6 & F5.7 only apply to the Class 2 component of the building.	Capable of Complying

BCA Clause	Title	Assessment and Comment	Status
F5.2	Determination of airborne sound insulation ratings	<p>A form of construction required to have an airborne sound insulation rating must:</p> <ul style="list-style-type: none"> have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term ($R_w + C_{tr}$) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or an acceptable form of construction under Spec F5.2. 	Capable of Complying
F5.3	Determination of impact sound insulation ratings	Determination of impact sound insulation ratings is to be in accordance with this clause. Particular attention is required to the requirements for discontinuous construction	Capable of Complying
F5.4	Sound insulation rating of floor	<p>1. A floor in a Class 2 building must have an $R_w + C_{tr}$ (airborne) not less than 50 and an $L_{n,w}$ (impact) not more than 62 if it separates—</p> <ul style="list-style-type: none"> (a) sole-occupancy units; or (b) a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification. 	Capable of Complying
F5.5	Sound insulation of walls	Sound insulation of walls and doors is required to be in accordance with this clause.	Capable of Complying
F5.6	Sound insulation rating of internal services	Services that serves or pass through more than one SOU must achieve the required ratings specified by this clause.	Capable of Complying
F5.7	Sound isolation of pumps	A flexible coupling must be installed at the point of connection between service pipes in a building and any circulating or other pump.	Capable of Complying
F6.1	Application of part	Part F6 applies to a sole-occupancy unit of a Class 2 building.	noted
F6.2	Pliable building membrane	Where a pliable building membrane is installed, it is required to be provided in accordance with this clause.	Capable of Complying
F6.3	Flow rate and discharge of exhaust systems	Exhaust systems are required to be provided in accordance with this clause.	Capable of Complying
F6.4	Ventilation of roof spaces	Where ventilation of the roof space are provided, it is required to be provided in accordance with this clause.	Capable of Complying

4.7. Ancillary Provisions (BCA Section G)

BCA Clause	Title	Assessment and comment	Status
NSW G1.101	Provision for the cleaning of windows	The method of provision for the cleaning of windows is required to be in accordance with this clause (windows 3 or more storeys above the ground).	Capable of Complying
G2.2	Installation of appliances	Domestic solid fuel burning appliances are not proposed. Boilers and pressure vessels, as defined by BCA, are required to comply with Specification G2.2	Capable of Complying
G6.1	Application of part	This part applies to occupiable outdoor areas. Except for G6.2, the Deemed-to-Satisfy Provisions of this Part do not apply to: <ul style="list-style-type: none"> an occupiable outdoor area of a sole-occupancy unit in a Class 2, or an occupiable outdoor area with an area less than 10m². 	Capable of Complying

4.8. Energy Efficiency (BCA Section J – Class 2 and 4 Buildings)

The provisions of this Section J(A) are designed to complement the requirements of BASIX which are implemented via a Development Consent or Complying Development as applicable. BASIX is a web-based planning tool design to assess the potential performance of certain residential buildings against a range of sustainability indices.

4.8.1. Building Fabric (NSW Part J(A)1)

BCA Clause	Status	Assessment and Comment	Status
NSW J(A)1.1	Application of part	The requirements of this provision apply to thermal insulation within the building	Note
NSW J(A)1.2	Compliance with BCA	The sole occupancy units of the building must comply with the national BCA provisions of J02(b) to (d). Refer to J1.2, J1.3, J1.5 & J1.6 below.	Note
J1.2	Thermal construction — general	Thermal insulation is required to be installed in accordance with AS/NZS 4859.1 and the general requirements of this clause. Reflective & bulk insulation is to be installed in accordance with this clause.	Capable of Complying
J0.4	Roof thermal breaks	Roof thermal breaks are required in accordance with this clause.	Capable of Complying

BCA Clause	Status	Assessment and Comment	Status
J0.5	Wall thermal breaks	Wall thermal breaks are required in accordance with this clause.	Capable of Complying
J1.6 (c) & (d)	Floors – floor edge insulation	Floor edge insulation is to comply with this clause	Capable of Complying

4.8.2. Building Sealing (NSW Part J(A)2)

BCA Clause	Status	Assessment and Comment	Status
NSW J(A)2.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to the building.	Capable of Complying
NSW J(A)2.2	Compliance with BCA provisions	The following national provisions apply to the requirements of this clause: <ul style="list-style-type: none"> J3.3 Roof Lights J3.4 External Doors and windows J3.5 Exhaust fans J3.6 Construction of roofs, walls and floors 	Capable of Complying
J3.3	Roof lights	Roof lights are to be designed to comply with this clause.	Capable of Complying
J3.4 (a) to (d)	Windows and doors	External windows and doors are required to be designed to comply with this clause.	Capable of Complying
J3.5	Exhaust fans	An exhaust fan must be fitted with a sealing device to prevent air infiltration in a conditioned space or in climate zones 4, 6, 7 and 8.	Capable of Complying
J3.6	Construction of roofs, walls and floors	Roofs, external walls, external floors and any openings are required to be designed and constructed to minimise air leakage.	Capable of Complying

4.8.3. Air-Conditioning and Ventilating System (NSW Part J(A)3)

BCA Clause	Status	Assessment and Comment	Status
NSW J(A)3.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to the building.	Capable of Complying
NSW J(A)3.2	Compliance with BCA provisions	Class 2 buildings of buildings must comply with national BCA provisions as identified below.	Capable of Complying

BCA Clause	Status	Assessment and Comment	Status
J5.2	Air Conditioning System control	Any proposed air-conditioning systems must be designed in accordance with this clause.	Capable of Complying
J5.3	Mechanical ventilation system control	Any proposed mechanical ventilation systems must be designed in accordance with this clause.	Capable of Complying
J5.4	Fan systems	Any proposed fan systems must be designed in accordance with this clause.	Capable of Complying
J5.5	Ductwork insulation	Ductwork and fittings in an air-conditioning system must be provided with insulation in accordance with this clause.	Capable of Complying
J5.6	Ductwork sealing	Ductwork in an air-conditioning system with a capacity of 3000 L/s or greater, not located within the only or last room served by the system, must be sealed against air loss in accordance with the duct sealing requirements of AS 4254.1 and AS 4254.2 for the static pressure in the system.	Capable of Complying
J5.7	Pump systems	Pumps and pipework that form part of an air-conditioning system are to be designed in accordance with this clause.	Capable of Complying
J5.8	Pipework insulation	Piping, vessels, heat exchangers and tanks containing heating or cooling fluid, where the fluid is held at a heated or cooled temperature, that are part of an air-conditioning system, other than in appliances covered by MEPS, must be provided with insulation in accordance with this clause.	Capable of Complying
J5.10	Refrigerant chillers	An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ratio in Table J5.10a or Table J5.10b when determined in accordance with AHRI 551/591.	Capable of Complying
J5.11	Unitary air conditioning equipment	Unitary air-conditioning equipment including packaged air-conditioners, split systems, and variable refrigerant flow systems must comply with MEPS and for a capacity greater than or equal to 65 kW _r where required by this clause.	Capable of Complying
J5.12	Heat rejection equipment	The motor rated power of a fan in a cooling tower, closed circuit cooler or evaporative condenser must not exceed the allowances in Table J5.12.	Capable of Complying

BCA Clause	Status	Assessment and Comment	Status
		The fan in an air-cooled condenser must have a motor rated power in accordance with this clause.	

4.8.4.Heated Water Supply (NSW Part J(A)4)

BCA Clause	Status	Assessment and Comment	Status
NSW J(A)4.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to the building.	Capable of Complying
NSW J(A)4.2	Compliance with the BCA provisions	The building must comply with the national BCA provisions of J7.2.	Capable of Complying
J7.2	Hot Water Supply	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.	Capable of Complying

4.8.5.Facilities for Energy Monitoring (NSW Part J(A)5)

BCA Clause	Status	Assessment and Comment	Status
NSW J(A)5.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to the building except within a sole occupancy unit.	Capable of Complying
NSW J(A)5.3	Compliance with BCA provisions	Class 2 buildings must comply with the national provision of J8.3.	Capable of Complying
J8.3	Facilities for energy monitoring	Facilities for energy monitoring are required to be provided in accordance with this clause.	Capable of Complying

5. FIRE SAFETY SCHEDULE

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

NO	FIRE SAFETY MEASURES (AS SET OUT UNDER CLAUSE 166 OF EP&A ACT REGULATIONS)	STANDARD OF PERFORMANCE	PROPOSED
1.	Access panels, doors & hoppers to fire resisting shaft	BCA 2019 _{Amdt 1} C3.13 & AS 1905.1-2015 _{Amdt 1}	YES
2.	Automatic fail-safe devices	D2.21 (b)(iv) auto unlock of doors; D2.22 (re-entry from fire stairs)	YES
3.	Automatic fire detection and alarm system	BCA 2019 _{Amdt 1} E2.2, Spec E2.2a Clause 5 (combination smoke alarm and smoke detection); Clause 6 (smoke detection for smoke control systems) & AS 1670.1-2018 or AS 3786-2014 _{Amdt 1 & 2}	YES
4.	Automatic fire suppression system	BCA 2019 _{Amdt 1} E1.5, Spec E1.5 & AS 2118.1-2017 _{Amdt 1}	YES
5.	Emergency Lifts	BCA 2019 _{Amdt 1} E3.4	YES
6.	Emergency lighting	BCA 2019 _{Amdt 1} Clause E4.2, E4.3, E4.4, E1.8	YES
7.	Exit signs	BCA 2019 _{Amdt 1} E4.5, E4.6, E4.8 Spec E4.8 & AS 2293.1- 2018	YES
8.	Fire control room	BCA 2019 _{Amdt 1} E1.8 & Spec E1.8	YES
9.	Fire dampers	BCA 2019 _{Amdt 1} C3.12, C3.15 & AS1668.1-2015 _{Amdt 1} , AS 1668.2-2012 _{Amdt 1 & 2}	YES
10.	Fire doors	BCA 2019 _{Amdt 1} C2.12 (separation of equipment); C2.13 (electricity supply systems); C3.3 (separation of external walls & associated openings in fire compartments); C3.4, Spec C3.4; C3.5 (doorways & fire walls); C3.8 (openings in fire isolated exits), C3.11 (bounding construction), C3.13 (openings in shafts) & AS 1905.1 – 2015 _{Amdt 1}	YES
11.	Fire rated lift landing doors	BCA 2019 _{Amdt 1} C3.10 & AS 1735.11-1986	YES
12.	Fire Hose reel systems	BCA 2019 _{Amdt 1} E1.4 & AS 2441-2005 _{Amdt 1}	YES
13.	Fire hydrant systems	BCA 2019 _{Amdt 1} E1.3 & AS 2419.1-2005 _{Amdt 1}	YES
14.	Fire seals protecting openings in fire resisting components of the building	BCA 2019 _{Amdt 1} C3.12, C3.15 & Spec C3.15, AS 4072.1-2005 _{Amdt 1} , AS 1530.4.-2014	YES
15.	Lightweight construction	BCA 2019 _{Amdt 1} C1.8 & Spec C1.8	YES
16.	Mechanical air handling system	BCA 2019 _{Amdt 1} E2.2, Table E2.2a; NSW Table E2.2b, Spec E2.2a, Spec E2.2b & AS 1668.1-2015 _{Amdt 1} .	YES

NO	FIRE SAFETY MEASURES (AS SET OUT UNDER CLAUSE 166 OF EP&A ACT REGULATIONS)	STANDARD OF PERFORMANCE	PROPOSED
		Class 7a (carpark building mechanical ventilation systems) BCA 2019 Amdt 1 E2.2, Table E2.2a and Clause 5.5 of AS 1668.1-2015 Amdt 1.	
17.	Portable fire extinguishers	BCA 2019 _{Amdt 1} E1.6 & AS 2444-2001	YES
18.	Pressurising system	BCA 2019 _{Amdt 1} Clause E2.2 & AS 1668.1-2015 Amdt 1	YES
19.	Smoke alarms & heat alarms	BCA 2019 _{Amdt 1} E2.2, Spec E2.2a & AS 3786-2014 Amdt 1 & 2	YES
20.	Emergency warning and intercom system	BCA 2019 _{Amdt 1} E4.9 & AS 1670.4-2018	YES
21.	Warning and operational signs	EPA Regulation 2000 (Clause 183), BCA 2019 _{Amdt 1} D2.23 (signs on exit doors) & E3.3 (lifts)	YES

6. SUMMARY OF NON-COMPLIANCE ISSUES

The following non-compliance's with the deemed-to-satisfy provisions of the BCA, in relation to the proposed building work, have been identified and are proposed to be dealt by justification against the performance requirements of the BCA in accordance with BCA Clause A2.2.

C2.14

Public corridors in Class 2
 & 3 buildings

Public corridors within the residential portion of the building are generally separated by smoke proof walls at 40m intervals however the following areas exceed 40m and are proposed to be addressed via a fire engineered performance solution;

Tower B

- Upper ground floor Approx. 54m.

Tower D

- Upper ground floor Approx. 46m.

Tower E

- Upper ground floor Approx. 55m.



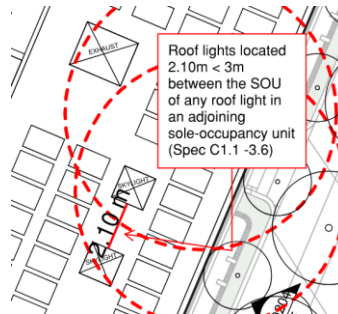
Example of public corridor exceeding 40m.

Spec C1.1 – 3.6
 Roof lights

Roof lights are not permitted to be located less than 3 m from another roof light in the adjoining SOU.

Tower B

- Distance between Roof lights are measured 2.10m being less than 3m.



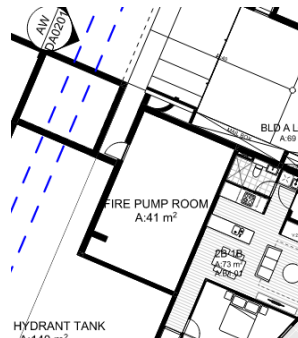
D1.2

Number of exits required

The proposed development is generally provided with two exits to all areas with the exception of the following areas which is proposed to be performance justified:

Basement 01

- Fire Pump Room (B01)



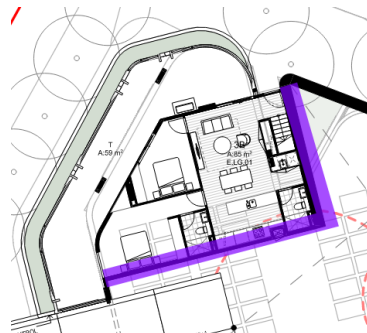
Tower A

- The lobby areas (LG -L2)



Tower E

- Unit E.LG.01 (LG)



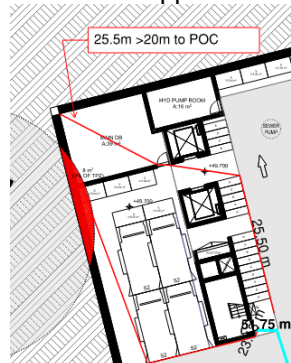
D1.4 Exit travel distances

The Deemed to Satisfy (DtS) provisions of the BCA require exit travel distances in the carpark areas to be no more than 20m to a point of choice (POC) and no more than 40m to the nearest exit.

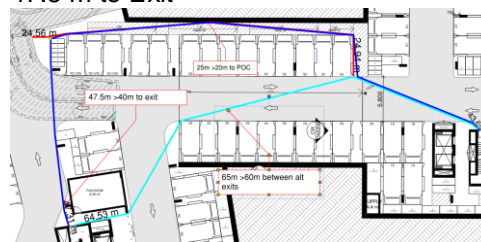
The following areas within the basement design have extended travel distances that exceed DtS limits and will be principally justified by Performance Justification.

Basement 02

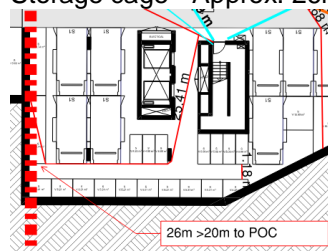
- Main DB – Approx. 25.5m to POC



- Access ramp between the east & west carpark – Approx. 47.5m to Exit

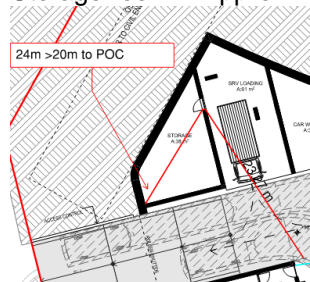


- Storage cage - Approx. 26m to POC

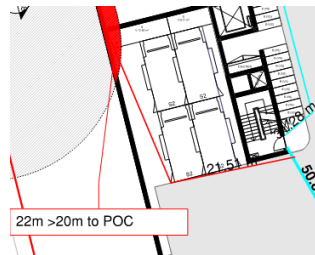


Basement 01

- Storage room – Approx. 24m to POC



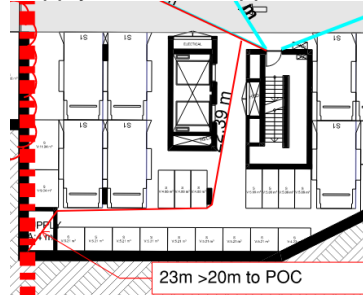
- Storage cage – Approx. 22m to POC



- Access ramp between the east & west carpark – Approx. 47.5 m to Exit



- Supply air room - Approx. 23m to POC

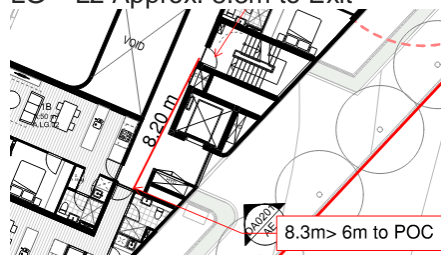


D1.4 Exit travel distances (continued)

The DtS provisions of the BCA require exit travel distances in the residential areas to be no greater than 6m from a unit to a POC or a single exit and area not within SOU are required to be no more than 20m to an exit or POC. The following areas below exceed the DtS limits and will be principally justified by performance justification:

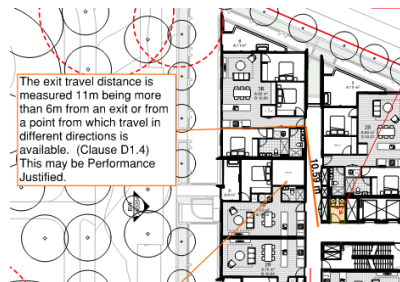
Tower A

- B02 - Approx. 6.4m to POC
- LG – L2 Approx. 8.3m to Exit



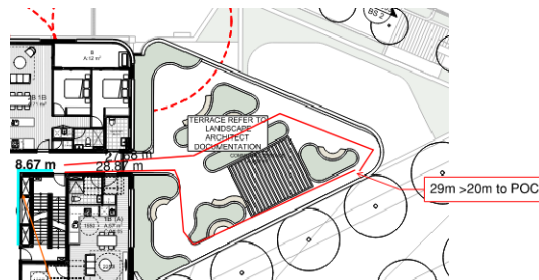
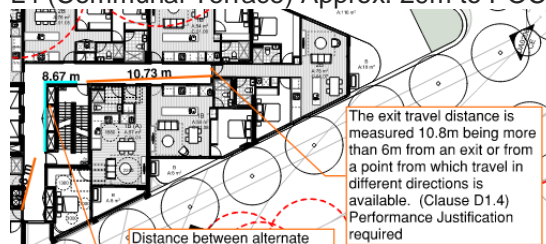
Tower B

- LG Approx. 9.1m to POC
- UG Approx. 11.6m to POC
- L1- L2 Approx. 11.2m to POC
- L3- L13 Approx. 11m to POC



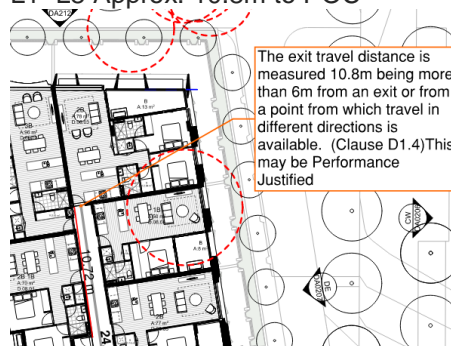
Tower C

- L1- L3 Approx. 10.8m to POC
- L4 (Communal Terrace) Approx. 29m to POC



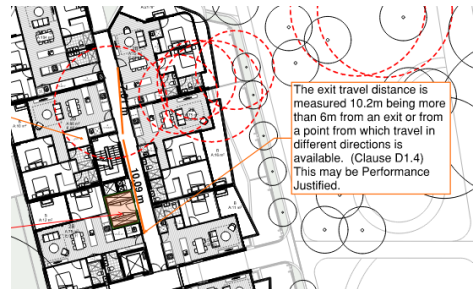
Tower D

- LG Approx. 8.3m to POC
- UG Approx. 11m to POC
- L1- L8 Approx. 10.8m to POC



Tower E

- L1- L7 Approx. 10.2m to POC



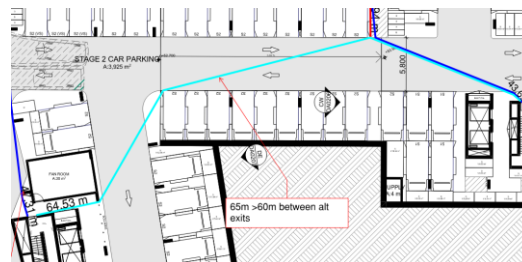
D1.5

Distance between
 alternative exits

Exits that are required to serve as alternative means of egress must not be more than 45m apart in a residential building and not more than 60m in all other parts. The distance between alternative exits generally comply with the maximum DtS distances above with the exception of the following areas that are proposed to be Performance Justified:

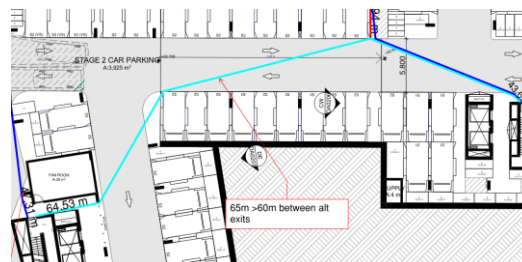
Basement 02

- Access ramp between the east & west carpark – Approx. 65 m between alternate exits



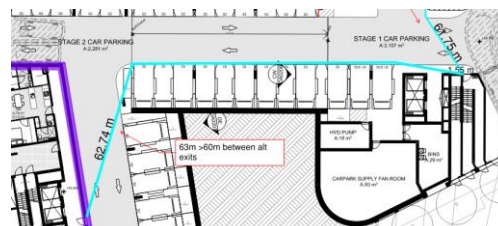
Basement 01

- Access ramp between the east & west carpark – Approx. 65 m between alternate exits

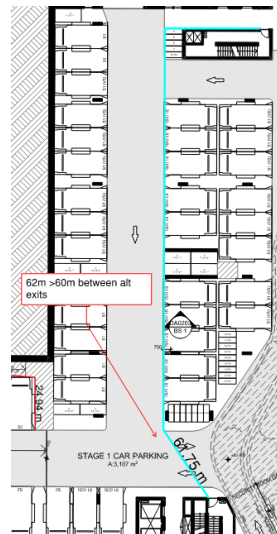


Lower Ground

- Access ramp between the east & west carpark – Approx. 63 m between alternate exits



- Fire stairs between the North & South of the carpark – Approx. 62 m between alternate exits



Exits required as alternative means of egress must be located not less than 9m apart and located so that the alternative paths of travel do not converge such that they become less than 6m apart.

The following distances between alternate exits are proposed to be addressed via a fire engineered performance solution:

Tower C

- The fire isolated exits serving tower C – Approx. 8.7m in lieu of 9m.



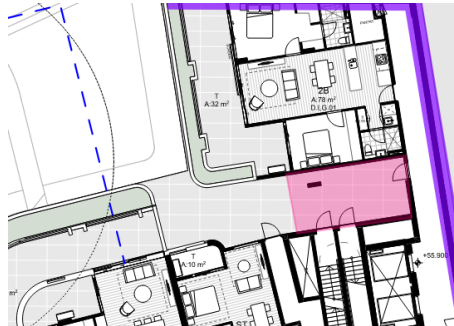
D1.7

Travel via fire isolated exits (Continued)

The DtS provisions of the BCA requires a fire-isolated stairway (FIS) or fire-isolated ramp to provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway to a road or open space or into a covered area that is open for at least 1/3 of its perimeter and has an unobstructed height of not less than 3m and provides an unimpeded path of travel to a road or open space of not more than 6m. The following areas requires a design change or Performance Solution to permit FIS discharge into covered area that is not open to 1/3 of its perimeter:

Tower D

- FIS discharge in covered area approx. 3.21m open in lieu of 5.13m (LG)



Tower E

- FIS discharge in covered area approx. 2.10m open in lieu of 2.52m (LG)



D1.7

Travel via fire isolated exits (Continued)

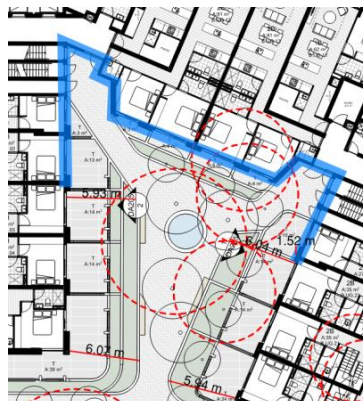
Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.

The discharge of the following exits requires occupants to pass part of the external wall which must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4.

The following walls and openings are located within 6m of the discharge pathway. A performance-based solution is proposed to justify DtS non-compliance:

Tower B

- 6 x FS exits with discharge at UG varies between 0.65m - 6m



Tower D

- 3 x FS exits with discharge at LG Approx. 2.34-4.2m



Tower E

- 2 x FS exits with discharge at LG Approx. 1.10m



D1.10

Discharge from exits

Discharge point of alternative exits must be located as far apart as practical. The following exits are not located as far apart as practical. Performance justification is required.

Tower B

- The two residential stairs (western) are located adjacent to each other (UG).

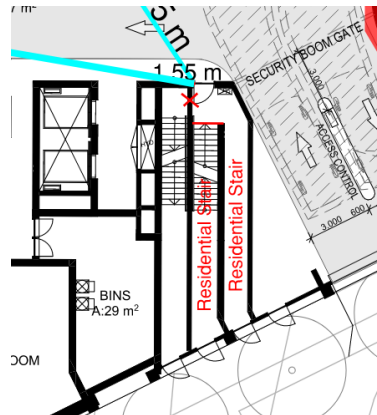


- The two residential stairs (eastern) are located adjacent to each other (UG).



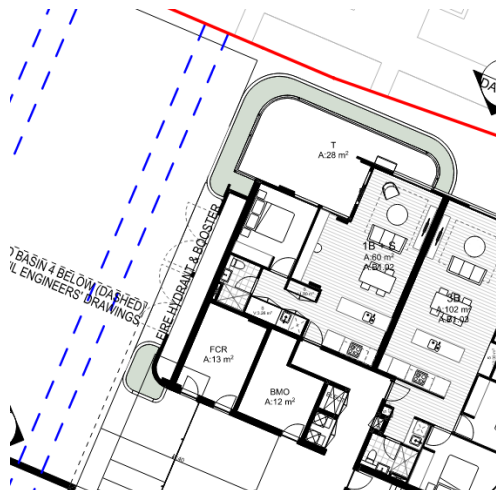
Tower C

- The two residential stairs are located adjacent to each other (LG).



E1.3
 Fire hydrants

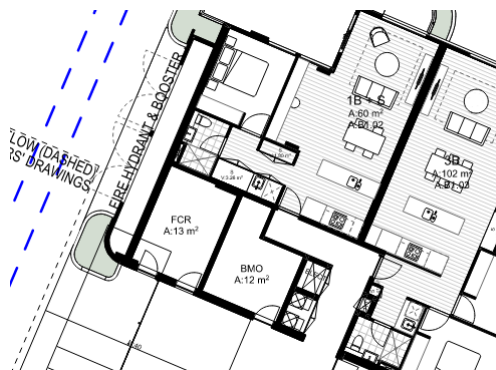
The fire hydrant booster is located adjacent the entry to Tower A and is not located within sight of the main entrance into the building and not facing the street, noting that there are multiple pedestrian entries. A Performance Solution is required to justify this technical non-compliance.



E1.8
 Fire control centres

The effective height of the united building is over 50m. A fire control room is required in accordance with Specification E1.8.

There is a technical non-compliance as the fire control room is in Tower A and is not located from the front entrance of the building given there are multiple entries. Performance justification will need to address this.



7. CONCLUSION

The design as proposed is capable of complying with the Building Code of Australia and will be subject to construction documentation that will provide appropriate details to demonstrate compliance. This report has identified areas of non-compliance with the deemed-to-satisfy provisions and indicates the design intent to demonstrate compliance with the Performance Requirements of the BCA.

ATTACHMENT 1

Assessed plans prepared by Plus Architects

Plan Title	Drawing No	Revision	Date
BASEMENT 02 PLAN	PLA-AR-DA097	8	13/07/2021
BASEMENT 01 PLAN	PLA-AR-DA098	8	13/07/2021
OVERALL LOWER GROUND FLOOR PLAN	PLA-AR-DA099	8	13/07/2021
OVERALL UPPER GROUND FLOOR PLAN	PLA-AR-DA100	8	13/07/2021
OVERALL LEVEL 01 FLOOR PLAN	PLA-AR-DA101	8	13/07/2021
OVERALL LEVEL 02 FLOOR PLAN	PLA-AR-DA102	8	13/07/2021
OVERALL LEVEL 03 FLOOR PLAN	PLA-AR-DA103	8	13/07/2021
OVERALL LEVEL 04 FLOOR PLAN	PLA-AR-DA104	8	13/07/2021
OVERALL LEVEL 05 FLOOR PLAN	PLA-AR-DA105	8	13/07/2021
OVERALL LEVEL 06 FLOOR PLAN	PLA-AR-DA106	8	13/07/2021
OVERALL LEVEL 07 FLOOR PLAN	PLA-AR-DA107	8	13/07/2021
OVERALL LEVEL 08 FLOOR PLAN	PLA-AR-DA108	8	13/07/2021
OVERALL LEVEL 09 FLOOR PLAN	PLA-AR-DA109	8	13/07/2021
OVERALL LEVEL 10-13 FLOOR PLAN	PLA-AR-DA110	8	13/07/2021
OVERALL ROOF PLAN	PLA-AR-DA114	8	13/07/2021