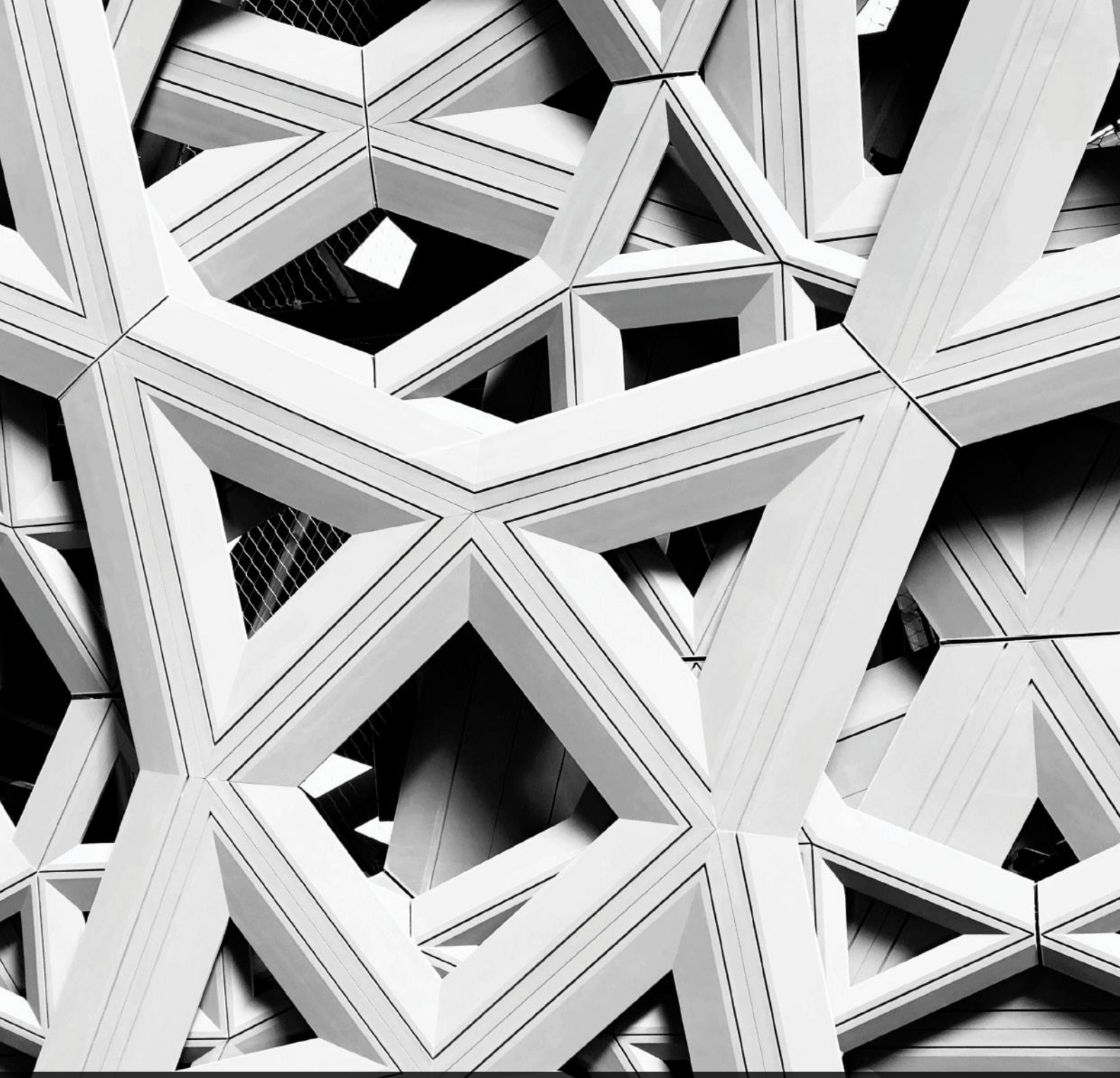


BCA Assessment Report

Stage 1 Summit at Kemps Creek (WH01-WH03)
706-752 Mamre Road, Kemps Creek

Prepared for:
ISPT Pty Ltd

Revision 2
31 July 2024
Reference: 220109

bmplusg.com.au

Executive Summary

The following comprises a summary of the key compliance issues identified under the assessment in this report that will be required to be addressed prior to the Certification Applications for Stage 1 of the project.

A. Matters requiring redesign or additional information at CC:

+	+ BCA (DtS) Clause	+ Description
1.	**C3D13 / C3D14**	Details of any proposed Fire Separation of Equipment & Electrical infrastructure to be provided at CC Application stage.
2.	**D2D7, D2D8, D2D18 & F4D4**	The proposed population of the building is required to be confirmed by Aliro / ISPT to facilitate an assessment of the overall required egress widths and sanitary facility requirements.
3.	**D3D14 – D3D22**	Detailed plans of all stairways, balustrades and handrails within the proposed development must be provided for review.
4.	**Part D4, F4D4**	A separate report will be required from an Access Consultant to outline the applicable requirements for the building. Specific details regarding the possible application of D4D5 to the various Class 7b portions of the building will also be required.
5.	**D4D5**	Consideration to an exemption to the Warehouse areas of each building may be appropriate. Confirmation from the building owner stating where this would be applied and the reasons why it would be inappropriate for access for people with disabilities within the facility to be provided at CC application stage.
6.	**E1D2, E1D4**	Details of the proposed Booster Assembly location is to be provided for review.
7.	**E1D15**	Fire Control Centres are to be nominated on the drawings.
8.	**E1D17 & E2D21**	Where applicable, details of additional fire services & smoke hazard management requirements to address additional hazard resulting from any proposed dangerous goods storage/use are to be provided at CC Application stage.
9.	**F4D4**	Sanitary facilities are to be indicated on the drawings.
10.	**F6D6**	Provide details of the proposed method of compliant ventilation to the warehouse portions of the buildings.
11.	**Section J**	A Section J Compliance Report or JV3 Report will be required to be provided with the CC application.

B. Matters requiring fire safety engineered performance solutions:

+ BCA (DtS) Clause		+ Description
1.	**C3D4 / C3D5**	A Performance Solution is required to address the Perimeter Vehicular Access non-compliances.
2.	**D2D5, D2D6**	The current plans indicate that exit travel distances, and distances between alternative exits within the building will not comply with D2D5 & D2D6.
3.	**E1D2**	Design of fire hydrant systems per AS 2419.1-2021 Appendix C as the volume of the building is >108,000m^3.
4.	**E1D3**	Confirmation is to be provided if 50m fire hose reels are proposed to be utilised in the Class 7b areas of the buildings to determine if a Performance Solution is required from the Fire Engineer.
5.	**E2D3 – E2D10**	Confirmation is to be provided if a Performance Solution is proposed to rationalise the requirements associated with the required automatic smoke exhaust system.

C. Other matters requiring performance solutions:

+ BCA (DtS) Clause		+ Description
1.	**Part D4**	DDA/Access Performance Solution Report requirement - TBC
2.	**F3P1**	A Performance Solution report is to be provided by the Architect / Façade Engineer to demonstrate how the external walls are designed to prevent the penetration of water into the building.
3.	**Section J**	A JV3 Report may be required to be provided with the CC application.

+ Contents

Report Status

Date	31.07.2024
Revision	2
Status	Updated Assessment – Stage 1
Author	Dean Goldsmith
Reviewed	Jack Nicolaou

Prepared by:

Dean Goldsmith
Director
bm+g
Building Surveyor-Unrestricted (NSW)
BDC No.: 0141

Reviewed by:

Jack Nicolaou
Cadet Building Surveyor
bm+g

Revision History

Revision	0	**Date**	26.08.2022
Status	Preliminary Assessment – For Client & Consultant Review - DRAFT		

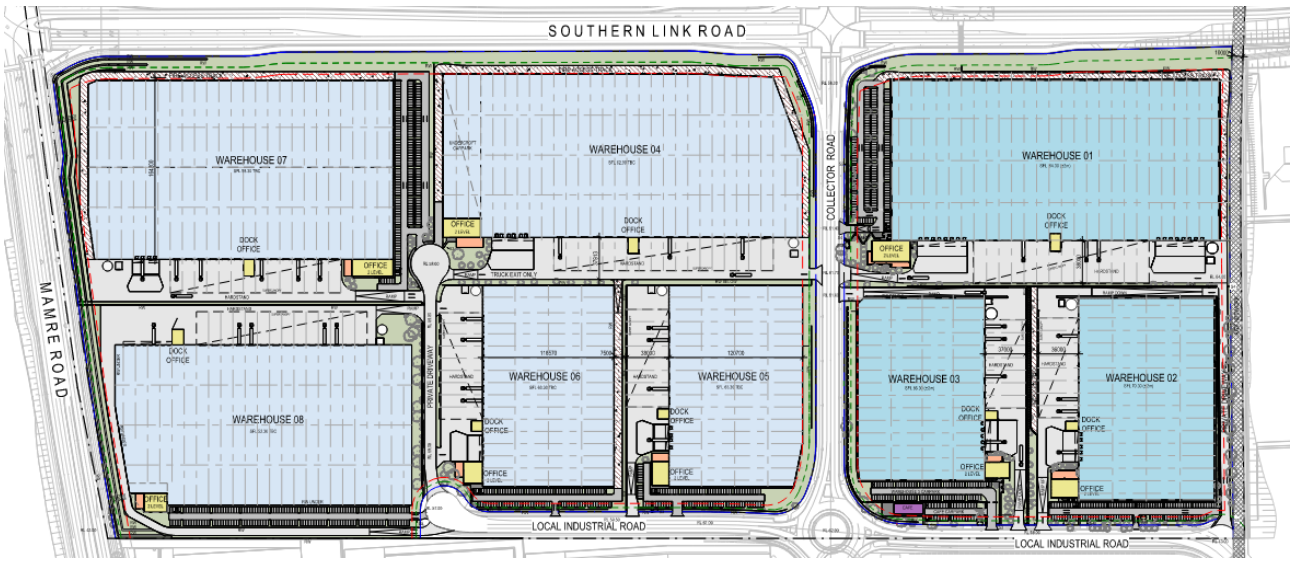
Revision	1	**Date**	08.09.2022
Status	Updated to Address Client Comments		

Revision	2	**Date**	31.07.2024
Status	Updated Assessment of Stage 1		

1.0 Description of Project

1.1 Proposal

bm+g have been commissioned by ISPT Pty Ltd to undertake an assessment of the Summit Stage 1 Development (Warehouses 01-03) at Kemps Creek at 706-752 Mamre Road, Kemps Creek against the relevant provisions of the Building Code of Australia 2022 (BCA).



1.2 Aim

The aim of this report is to:

+ Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA.
+ Identify matters that require plan amendments in order to achieve compliance with the BCA.
+ Identify matters that are to be required to be addressed by Performance Solutions.
+ Enable the certifying authority to satisfy its statutory obligations under Clause 19(1) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

1.3 Project Team

The following bm+g team members have contributed to this Report:

+ **Dean Goldsmith** – Report Preparation (Director) | Building Surveyor-Unrestricted
+ **Jack Nicolaou** –Peer Review (Cadet Building Surveyor)

1.4 Referenced Documentation

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

- Building Code of Australia 2022 (BCA)
- The Guide to the Building Code of Australia 2019 (Amendment 1)
- Architectural Plans prepared by Watson Young numbered:

Drawing No.	Revision	Date
DA003	P13	19.07.2024

1.5 Regulatory Framework

- Pursuant to Section 19(1) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.
- The assessment has been undertaken in accordance with Clause 24 and 25 of the Building and Development Certifiers Regulation 2020. bm+g are the proposed Registered Certifier and the advice provided in this Report is limited to whether submitted documentation complies with the Building Code of Australia or a legislative requirement.

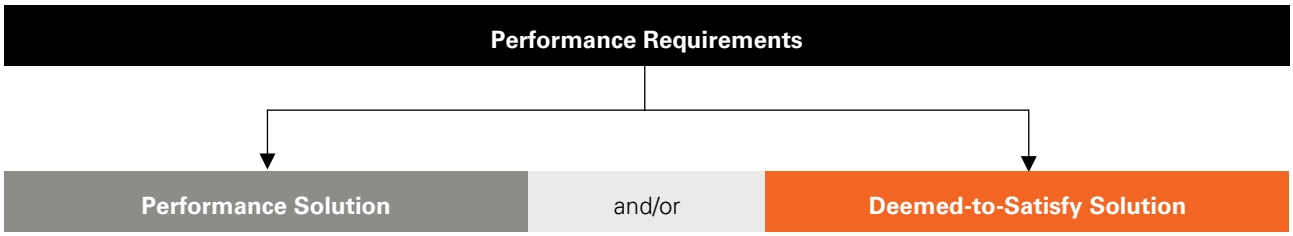
1.6 Relevant Version of the NCC Building Code of Australia

Pursuant to Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the day on which the application for the Construction Certificate is made. The current version of the BCA is BCA 2022, with the next revision of the BCA coming into effect 1 May 2025. As the Construction Certificate application will be lodged after 1 May 2023, this report assesses the design against compliance with the requirements of BCA 2022.

The following parts of the BCA are subject to transitional provisions:

- NCC 2022 Energy Efficiency provisions – 1 October 2023.
- NCC 2022 Condensation Management provisions under BCA Part F8 – 1 October 2023.

1.7 Compliance with the National Construction Code



Compliance with the NCC is achieved by complying with:

- the Governing Requirements of the NCC; and
- the Performance Requirements.

Performance Requirements are satisfied by one of the following, as shown in the Figure below:

- A Performance Solution.
- A Deemed-to-Satisfy Solution.
- A combination of the above two options.

1.8 Limitations and Exclusions

The limitations and exclusions of this report are as follows:

- **If bm+g is the Certifier:** This report is prepared in accordance with the Conflicts of Interest provisions of Part 4 of the Building and Development Certifiers Regulation 2020. bm+g confirm that this report is prepared specifically to address the requirements of Clause 25(5) and (9) of the Regulation with respect to the role of the Registered Certifier. This assessment report is not to be construed as extending any further into providing design advice, which would be contrary to the aims of this legislation.
- No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner needs be satisfied that their obligations under the DDA have been addressed.
- Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D4 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.
- No assessment has been undertaken with respect to SEPP (Housing) 2021. It is understood that suitably qualified consultants will be engaged to determine the relevance of any Council planning requirements or SEPP requirements and provided detailed assessment reports where applicable.

  Where relevant to this development, it is assumed that these assessments will be undertaken by others.
- This report does not consider BCA Part G5 (Volume 1) which makes provision for construction of buildings in bushfire-prone areas, therefore no assessment has been undertaken in consideration of RFS, Planning for Bushfire

Protection and AS 3959. Where Part G is applicable to the site, then it is required that assessment / due diligence is undertaken by a specialist consultant to verify compliance.

+ This report does not constitute a detailed assessment of the architectural documentation against the requirements of Section J. It is understood that a suitably qualified consultant will be engaged to determine compliance in this regard.

+ bm+g has not undertaken an assessment of any Performance Solution Reports at the time of the preparation of this report.

+ The Report does not address matters in relation to the following Local Government Act and Regulations:
  - Work Health and Safety Act and Regulations.
  - Work Cover Authority requirements.
  - Water, drainage, gas, telecommunications and electricity supply authority requirements.
  - Disability Discrimination Act 1992.

+ bm+g cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.

+ No part of this document may be reproduced in any form or by any means without written permission from bm+g. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

1.9 Report Terminology

Building Code of Australia – Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Means an area defined in Figure 2 and in Table 2 (of BCA Schedule 3) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 6 of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C2D2 and Specification 5, except as allowed for:

+ certain Class 2, 3 or 9c buildings in C2D6; and
+ a Class 4 part of a building located on the top storey in C2D4(2); and
+ open spectator stands and indoor sports stadiums in C2D8.

Note: *Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.*

Deemed-to-Satisfy (DtS) Provisions of the BCA – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

Effective Height – The vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift, or other equipment, water tanks or similar service units).

Exit – Any, or any combination of the following if they provide egress to a road or open space:

+ An internal or external stairway.
+ A ramp.
+ A fire-isolated passageway.
+ A doorway opening to a road or open space.

Fire Compartment – The total space of the building; or when referred to in

+ The Performance Requirements – any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
+ The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of

construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant part.

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria:

- structural adequacy; and
- integrity; and
- insulation.

and expressed in that order.

Fire Source Feature (FSF) – The far boundary of a road 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.

National Construction Code Series (NCC) – The NCC was introduced 1 May 2011 by the Council of Australian Governments (COAG). The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupiable outdoor area means a space on a roof, balcony or similar part of a building:

- that is open to the sky; and
- to which access is provided, other than access only for maintenance; and
- that is not open space or directly connected with open space.

Occupation Certificate (OC) – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 6 of the EPA Act 1979.

Open Space – Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

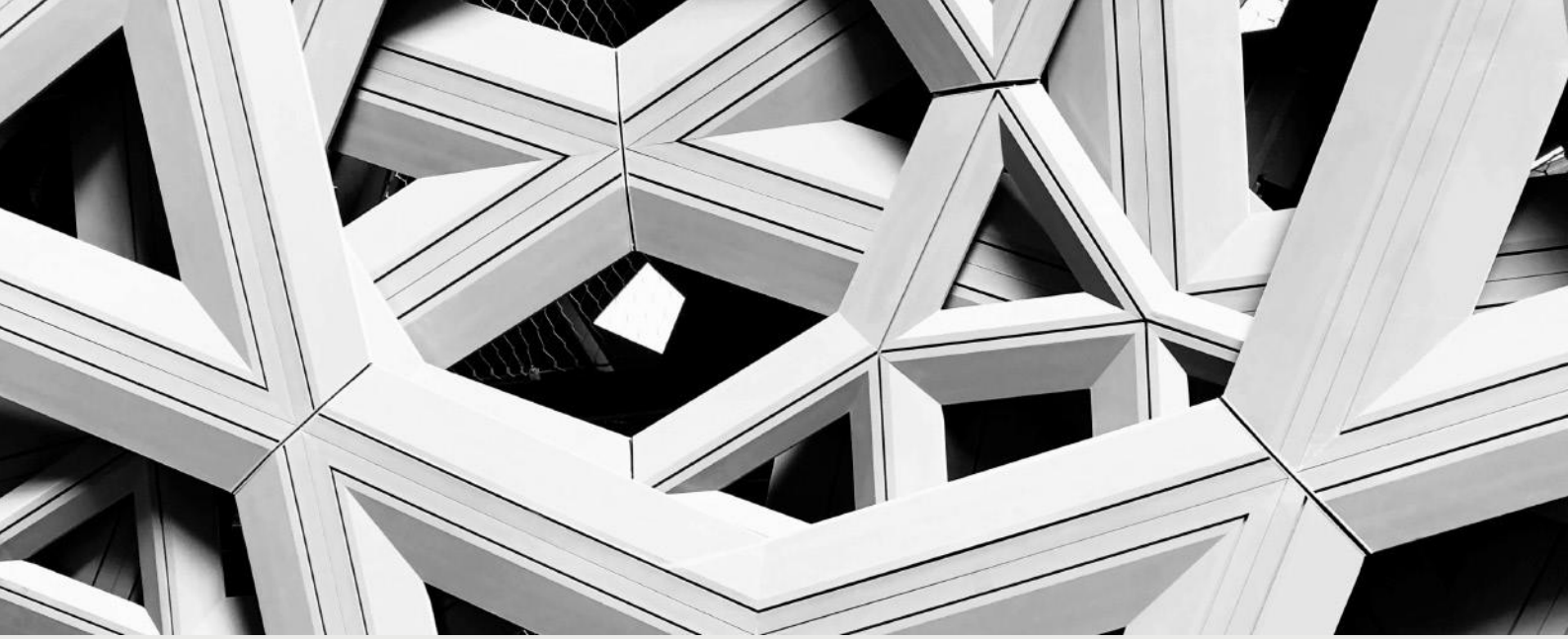
Performance-Based Design Brief – Means the process and the associated report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for acceptance of any relevant Performance Solution as agreed by stakeholders.

Performance Requirements of the BCA – A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-

- complying with the Deemed-to-Satisfy Provisions; or
- formulating an Performance Solution which-
  - complies with the Performance Requirements; or
  - is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
- a combination of (a) and (b).

Performance Solution – Means a method of complying with the performance requirements other than by a Deemed-To-Satisfy Solution.



2.0 Building Characteristics

2.1 Proposed Development

The proposed development consists of the construction of eight warehouse buildings with offices located on each footprint.

Warehouses 01-03 are classified as follows:

BCA Classifications:	Class 5 (Office) Class 7b (Warehouse)
Rise in storeys:	Two (2)
Storeys Contained:	Two (2)
Type of Construction:	Type C Construction
Importance Level (Structural)	2 (TBC)
Sprinkler Protected Throughout	Yes
Effective Height	<12m
Floor Area	Large Isolated Buildings >18,000 m^2
Volume	Large Isolated Buildings >108,000 m^3
Climate Zone	Zone 6

2.2 Fire Compartment Floor Area Limitations

Maximum permissible size of fire compartment/atria per Table C3D3 is:

+ Classification		+ Type A	+ Type B	+ Type C
6, 7, 8 or 9a	Max. floor area	5,000m^2	3,500m^2	2,000m^2
	Max. volume	30,000m^3	21,000m^3	12,000m^3
5, 9b or 9c	Max. floor area	8,000m^2	5,500m^2	3,000m^2
	Max. volume	48,000m^3	33,000m^3	18,000m^3

Note: Refer to Large Isolated Building Provisions of Clause C3D4 below.

2.3 Distance to Fire Source Features

Based upon a review of the plans, it is noted that each elevation of the building is located within the following distances from fire source features on the site.

Warehouse 1

+ Elevation	+ Fire Source Feature	+ Distance
North	Side or rear boundary	>6m
East	Side or rear boundary	>6m
West	Far side of the road	>6m
South	Building on same allotment	>6m

Warehouse 2

+ Elevation	+ Fire Source Feature	+ Distance
North	Building on same allotment	>6m
East	Side or rear boundary	>6m
West	Building on same allotment	>6m
South	Far side of the road	>6m

Warehouse 3

+ Elevation	+ Fire Source Feature	+ Distance
North	Building on same allotment	>6m
East	Building on same allotment	>6m
West	Far side of the road	>6m
South	Far side of the road	>6m

***Note:** Fire Source Feature (FSF) – The far boundary of a road 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.*

3.0 BCA Assessment

We note the following BCA compliance matters with relation to proposed building works are capable of complying with the BCA. Please note that this is not a full list of BCA clauses, they are the key requirements that relate to the proposed work and the below should be read in conjunction with the BCA.

3.1 Section B – Structure

Part B1

- New building works are to comply with the structural provisions of the BCA 2022 and the following referenced standards including:
  - AS 1170.0 – 2002 General Principles
  - AS 1170.1 – 2002, including certification for balustrades (dead and live loads)
  - AS 1170.2 – 2021, Wind loads
  - AS 1170.4 – 2007, Earthquake loads
  - AS 3700 – 2018, Masonry Structures
  - AS 3600 – 2018, Concrete Structures
  - AS 4100 – 1998, Steel Structures and/or
  - AS 4600 – 2018, Cold formed steel Structures
  - AS 2159 – 2009, Piling Design &Installation
  - AS 1720 – 2010, Design of Timber Structure
  - AS/NZS 1664.1 & 2 – 1997, Aluminium Structures
  - AS 2047 – 2014, Windows and External Glazed Doors in buildings
  - AS 1288 – 2006, Glass in buildings
  - AS 3660.1 – 2014, Termite control (or confirmation no primary building elements are timber).
- Design certification will also be required from the Architect and Services Consultants to confirm compliance with Section 8 of AS1170.4-2007 with regard to the design of non-structural parts and components and their fastenings for horizontal and vertical earthquake forces and inter-storey drift.
- In accordance with B1D3(a)(iv) a notional additional load of not less than 0.15kPa to support the addition of solar photovoltaic panels is to be applied to the roof structure.
- The Importance Level provisions of BCA (Section B) are to be acknowledged by the Structural Engineer and addressed to the degree necessary.
- New building works to the existing building must be compliant with earthquake provisions of AS1170.4 – Earthquake Actions in Australia.

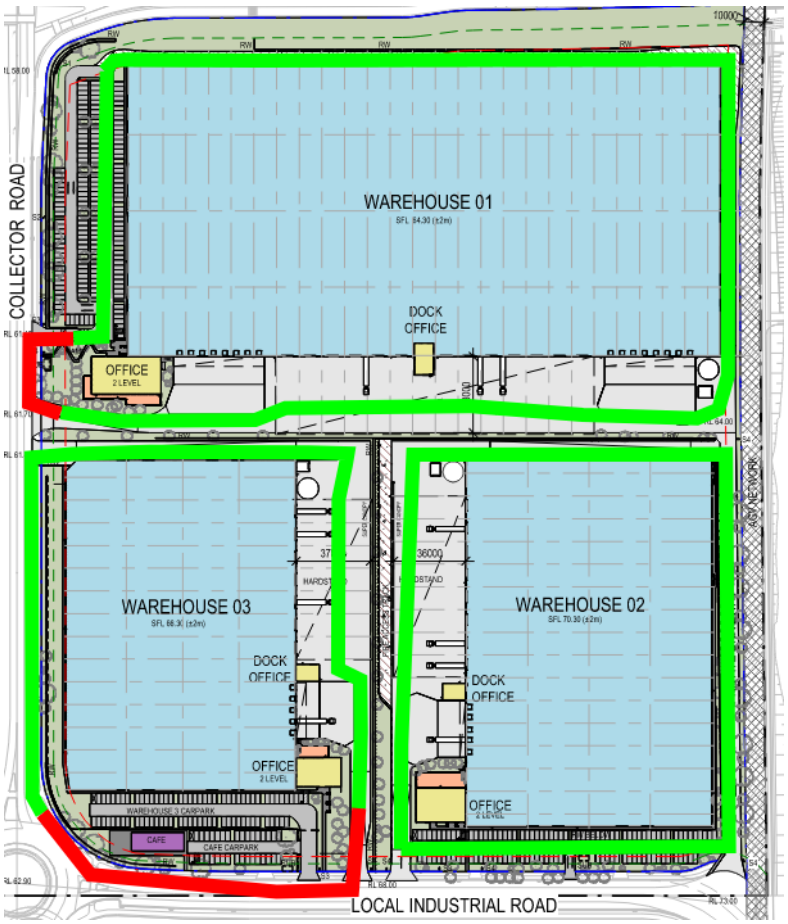
Comment: Structural design details and certification will be required at CC application stage

3.2 Section C – Fire Resistance

C2D2 & Spec 5

Type of Construction Required: The building is required to comply with the requirements of Type C Construction as stated within Specification 5. The table below provides an overview of the requirements of each. Refer to Table 4 of Appendix 1 for the FRL requirements of Type C Construction.

	Type C Construction: + External walls (and columns incorporated within) need not achieve an FRL if >3m from a boundary or separate building. Where required, external walls of Type C Construction only require an FRL from the outside and not in both directions. + Floors need not achieve an FRL, subject to Cl. S5C3. + Roofs need not achieve an FRL. + Internal columns need not achieve an FRL. **Comment:** The proposed warehouse buildings will be subject to compliance with the Type C Construction provisions of tables S5C24a to S5C24e.
C2D3	**Calculation of Rise in Storeys:** The rise in storeys of a building is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space calculated in accordance with the requirements set out in this clause. **Comment:** The proposed development has a rise in storeys of 2 for each building.
C2D11 & Spec. 7	**Fire Hazard Properties:** A schedule of all wall, floor, and ceiling linings along with associated test reports are to be provided for review to ensure compliance with the fire hazard property requirements of the BCA. Noting: + Minimum Group Numbers apply to wall and ceiling linings. AS 5637 test reports must be provided to determine compliance. + Minimum Critical Radiant Flux values apply to floor linings. AS ISO 9239.1 test reports must be provided to determine compliance Refer to Table 2 and 3 in Appendix 1 below for the required fire hazard properties. **Comment**: Design certification will be required at CC application stage and installation certification (including relevant test reports confirming the critical radiant flux of floor linings and group number of wall and ceiling linings) required at OC stage.
C2D12	**Performance of External Walls in Fire:** Concrete, pre-cast/tilt-up wall panels in buildings with a rise in storeys of 1 or 2 are required to comply with the requirements of Spec. 8. **Comment**: Certification to be provided by the Structural Engineer confirming compliance, where pre-cast/tilt-up wall panels are proposed.
C3D3	**General Floor Area and Volume Limitations:** The building is to achieve fire compartment sizes not in excess of the DtS requirements of this clause. **Comment**: The proposed building is a Class 7b Large Isolated Building and as such the provisions for maximum fire compartment size under Table C3D3 do not apply. Refer to comments under C3D4 & C3D5 below in relation to the Large Isolated Building provisions applicable to the proposed development.
C3D4	**Large Isolated Buildings:** A Large Isolated Building that contains Class 5, 6, 7, 8 or 9 parts, is required to be— + Protected throughout with a sprinkler system complying with Specification 17; and + Provided with a perimeter vehicular access complying with C3D5(2). **Comment**: The proposed warehouse buildings required to be sprinkler protected and provided with a 6m wide perimeter vehicular accessway in accordance with Clause C3D5(2) throughout (see notes below). **Note 1:** Any proposed gates are to achieve no less than 6m unobstructed width or the reduced width will need to be included in the above Performance Solution. **Note 2:** The driveways providing vehicular perimeter access must be designed with adequate loading capacities, gradients and swept paths to accommodate a fire truck, having regard to the FRNSW Fire Safety Guideline – Access for Fire Brigade Vehicles and Firefighters. **Note 3**: The Trial Design for the Fire Engineered Performance Solution must take into consideration and detail the proposed security access to the site and how this may impact on FRNSW vehicular access.

C3D5	**Requirements for Open Spaces and Vehicular Access:** Open space and vehicular access required by C3D4 must comply with the requirements of sub-clauses (a) & (b) of this Part whereby they must be 6m wide within 18m of the external walls of the building and of a suitable bearing capacity and unobstructed height to permit the operation and passage of FRNSW vehicles. **Comment**: The following non-compliances are to be addressed as a performance solution by the fire engineer to demonstrate the compliance with Performance Requirement CP9. + All three warehouses do not comply where the perimeter vehicular access is required to be accessed by travelling underneath the super canopies (travel through the building). + Warehouse 01 and Warehouse 03 have lengths of their perimeter vehicular access path which are greater than 18m away from the building. 
C3D9 & C3D10	**Separation of Classifications:** Separate classifications will either need to be separated by a fire wall achieving the higher FRL requirement between the two classes, or alternatively the higher FRL must apply to both areas subject to Spec 5. Note: Refer to C3D8 comments above in regards to structural elements crossing a fire wall at roof level. **Comment**: The provisions of C3D9(1)(a) can be applied to the Warehouse and Office parts on Ground Floor as the different classifications have the same FRL requirements under Spec. 5.
C3D13	**Separation of Equipment:** Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 (or that required by Spec. 5, whichever is greater) and doorways being self-closing -/120/30 fire doors: + Lift motors and lift control panels; or + Emergency generators used to sustain emergency equipment operating in emergency mode; or + Central smoke control plant; or

	+ Boilers; or + A battery or battery system installed in the building that has a voltage of 12 volts or more and a storage capacity of 200kWh or more. Confirmation is required as to whether any of the above will be applicable to this development. **Comment:** Where appropriate, details demonstrating compliance are to be included in the CDC Application plans.
C3D14	**Electricity Supply System:** An electricity substation, electrical conductors & main switchboards which sustain 'emergency equipment' operating in the emergency mode, located within a building must– + Be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and + Having any doorway in that construction protected with a self-closing fire door having an FRL of not less then -/120/30 Electrical conductors which supply a substation or main switchboard sustaining emergency equipment operating in the emergency mode – + Have a classification in accordance with AS/NZS 3013 of not less than— o If located in a position that could be subject to damage by motor vehicles — WS53W; or o Otherwise — WS52W; or + Be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120. Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment switchgear must be separated from the non-emergency equipment switchgear by metal partitions designed to minimise the spread of fault from the non-emergency equipment switchgear. **Note:** For the purpose of this clause, 'emergency equipment' includes (but is not limited to) fire pumps, air handling systems for smoke control, emergency lifts, control & indicating equipment, EWIS. **Comment:** Where appropriate, details demonstrating compliance are to be included in the CDC Application plans. This is particularly relevant to the main electrical switch rooms in warehouse that are required to be fire separated in accordance with the above requirements.
C4D15	**Openings for Services Installations:** All opening for services installations in building elements required to be fire-resisting with respect to integrity and insulation must be protected in accordance with the provisions of Spec. 13. **Comment:** Note – see C3D14. Certification and appropriate test reports will be required for assessment at OC Application stage.
Spec. 5	**Fire Resisting Construction:** The new building works are required to comply with the requirements detailed under Specification 5. The below details the FRL requirements for building elements for each proposed warehouse. **Comment**: The proposed development will be subject to compliance with the Type C Construction provisions of tables S5C21a to S5C21g as summarised below: + All external walls & loadbearing elements incorporated in or attached to an external wall are to achieve the required FRL per Table S5C24a. + All loadbearing external columns are to achieve the required FRL per Table S5C24b. + Any Fire Walls that are proposed to separate different classifications per C3D9 above are to achieve the required FRL per Table S5C24c. + All internal stair shaft walls and walls bounding SOUs, as well as any associated columns, walls, beams and trusses throughout are to achieve the required FRL per Table S5C21d. Note: Any proposal to reduce the FRLs of building elements that are required to be fire rated must be addressed as a Performance Solution from the Fire Engineer.

Spec. 7	**Fire Hazard Properties:** As noted above, this Specification sets out the requirements in relation to the fire hazard properties of linings, materials and assemblies in Class 2 to 9 buildings. Table S7C2 outlines the applicable requirements of Spec. 7 to the different types of Linings, Materials and Assemblies. Comment: Certification will be required to be provided at both CC and OC application stages.
Spec. 8	**Performance of External Walls in Fire:** This specification contains measures to minimise in the event of fire the likelihood of external walls collapsing outwards as complete panels and the likelihood of panels separating from supporting members. Comment: Structural Design certification and details demonstrating compliance are required to be provided at CC Application Stage for the proposed warehouses.

3.3 Section D – Access and Egress

D2D3	**Number of Exits Required:** The building is required to be provided with 2 exits to each storey. **Comment:** The number of exits provided to the building achieve compliance with the requirements of this clause.
D2D5	**Exit Travel Distances:** This clause specifies the permitted travel distances allowable from Class 2 to Class 9 buildings. Sub-clauses (1) to (6) specify the maximum distances to be taken into account for the various uses in each Class of building. In a Class 5, 6, 7, 8 & 9 Buildings no point on a floor must be more than 20m for a single exit or to a point of choice to alternative exits; and no point on a floor must be more than 40m to an exit where 2 or more alternative exits are available for egress. **Comment:** A final travel distance assessment is to be conducted upon provision of the racking layouts for the warehouses. A performance solution is required to permit the following non-compliances: + To allow the following distances to exceed the DtS 40m to an exit: - Warehouse 01: Approx. 120m to an exit - Warehouse 02: Approx. 90m to an exit - Warehouse 03: Approx. 90m to an exit + To consider occupants have exited the buildings once outside the external walls and are under the super canopy structures. Note: This will reduce the estimated exit travel distances above.
D2D6	**Distance Between Alternative Exits:** Exits required as alternative exits must be – + Distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and + not less than 9m apart; and + not more than – 60m apart. + Located so that the alternative paths of travel do not converge such that they become less than 6m apart. **Comment:** A final travel distance assessment is to be conducted upon provision of the racking layouts for both warehouses. The distance between alternative exits are non-compliant within the Warehouse areas of all buildings. In this regard the following non-compliance issues will be required to be addressed as Performance Solutions by the Fire Safety Engineer to demonstrate compliance with Performance Requirements D1P4 & E2P2. + Warehouse 01: Up to 240m between alternative exits within the warehouses. + Warehouse 02: Up to 190m between alternative exits within the warehouses.

	+ Warehouse 03: Up to 185m between alternative exits within the warehouses.
D2D7 – D2D11	**Dimensions of Paths of Travel to an Exit:** The minimum clear height through all egress paths is required to be no less than 2m, and a minimum of 1m wide (this width dimension is measured clear of any obstructions such as handrails and joinery). Aggregate exit widths must be achieved which are driven by occupancy numbers of each floor. **Comment:** Population numbers for the building are detailed under D2D18 below and based on these numbers compliance with D2D8 is readily achievable. Final details showing compliant dimensions of all exits (including minimum 1m wide clearances and min. clear height of 2.1m) from each building are to be confirmed on the CC Application plans
D2D14	**Travel Via Non Fire Isolated Required Stairways:** A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The distance from any point on the floor to a point of road or open space must not exceed 80m. The stair must discharge at a point not more than 20m to a point of road or open space, or from a fire-isolated passage, or 40m from one of two such points. **Comment:** Detail to be reviewed as plans progress particularly in regards to the second storey office levels.
D2D18	**Number of Persons Accommodated:** Clause D2D18 and Table D2D18 are used to calculate the anticipated number of people in particular types of buildings so that minimum exit widths and the required number of sanitary and other facilities can be calculated. This clause and table are not to be used for non-BCA purposes. **Comment:** The following population numbers have been calculated in accordance with Table D2D18 based on 10m² person in the office areas; and 30m² per person for the warehouse with 50% of the warehouse being allocated to circulation space and racking structures. The below population numbers will need to be verified / confirmed at the CC Application stage.

Population Numbers as per Table D2D18					
Unit/Area					
Warehouse 01	652 persons	WH01 Office	126 persons	WH01 D Office	16 persons
Warehouse 02	344 persons	WH02 Office	78 persons	WH02 D Office	10 persons
Warehouse 03	288 persons	WH03 Office	68 persons	WH03 D Office	10 persons

D3D4	**Non-Fire Isolated Stairways and Ramps:** In a building with a rise in storeys of more than 2, required non-fire-isolated stairways and ramps must be either constructed of + Reinforced or prestressed concrete; or + Steel at least 6mm thick at all points; or + Timber that has a finished thickness of at least 44mm, has an average density of at least 800 kg/m3 at a moisture content of 12% and has not been joined by means of glue unless it has been laminated and glued with resorcinol/phenol formaldehyde; or + Non-combustible materials, and such that if there is a structural failure it will not cause damage to or impair the fire-resistance of the shaft in which the stair is located. **Comment:** The requirements of D3D4 apply to the proposed stairs within each building. Details are to be provided of the stair design at CC application stage.
D3D8	**Installations in Exits and Paths of Travel:** This clause restricts the installation of certain services in fire-isolated exits, non-fire-isolated exits and certain paths of travel to exits. Sub-clauses (1) to (6) prescribe which services shall not be installed as well as the circumstances in which certain services may be installed in fire-isolated and non-fire-isolated exits. **Comment:** This requirement applies to all cupboards containing electrical distribution boards or comms. equipment that are located in a path of travel to an exit. In this regard, such cupboards are to be enclosed in non-combustible materials and are to be suitably sealed against the spread of smoke.

D3D9	**Enclosure of Space under Stairs and Ramps:** The space below a required, non-fire isolated stairway/ramp must not be enclosed to form a cupboard or other enclosed space, unless the cupboard is bound by construction achieving an FRL of at least 60/60/60, with a self-closing -/60/30 door. **Comment:** If the space under any of the required exit stairs are proposed to be enclosed to form a cupboard or the like, the enclosing walls and ceilings will need to achieve an FRL of 60 minutes and the doorway will need to be fitted with a self-closing -/60/30 fire door.
D3D14 – D3D16	**Stairways, Landings, and Thresholds:** + Stairway dimensions must comply with Table D3D14. + A stairway must have no more than 18, nor less than 2, risers in each flight. + Landings must be not less than 750mm in length. + Slip Resistance of stair nosings and landings must comply with Table D3D15. + A step is not permitted on either side of a doorway, closer than the width of the door swing. Doorways leading to external areas are exempted if the step down is ≤190mm, though an accessible threshold ramp is required in accessible areas (refer to Part D4). **Comment:** All stairs are to have dimensions that comply with Table D3D14, have solid risers, and are to have contrasting nosings and slip resistant surfaces throughout in accordance with clause 11 of AS 1428.1-2009. (See diagram in Part D4 below). Architect to note, details demonstrating compliance will be required to be included in the CC plans.
D3D17 – D3D21	**Balustrades or Other Barriers:** These clauses detail where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically, the following will apply to this class of building: + Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp. + For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface. + Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not facilitate climbing. + Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or internal stairs within a Class 7b or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like. + Note: any wire barriers must be complaint with D3D21 and tables D3D21(a) to D3D21(c). **Comment:** Details demonstrating compliance are to be submitted with the CC Application drawings for assessment against the above criteria.
D2D22	**Handrails:** This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. **Comment:** Architect to note, details demonstrating compliance will be required to be included in the CC plans. Handrails serving all stairs and ramps both internally and externally to the buildings are required to comply with the accessibility requirements of Clause D4D4 and AS 1428.1-2009.
D3D24	**Doorways and Doors:** This clause applies to all doorways that form an exit and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors. If an exit door is power operated, it must be opened manually under a force of not more than 110N if there is a malfunction or failure to the power source; and it must open automatically if there is a power failure to the door and upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

	Comment: Architect to note – compliance readily achievable.
D3D25 & D3D26	**Doors and Latching:** All egress doorways must swing in the direction of egress and must be readily openable without a key from the side that faces a person seeking egress, by a single handed downward or pushing action on a single device which is located between 900mm and 1100mm from the floor. **Comment:** The proposed egress doors from the building are required to swing in the direction of egress in accordance with D3D25(1)(a
D4D2 & D4D3	**General Building Access Requirements:** The extent of access required depends on the classification of the building. Buildings and parts of building must be accessible as set out in sub-clauses (1)-(10) unless exempted by Clause D4D5. Access is required to and within all areas normally used by the occupants, for Class 5, 6, 7b & 9b buildings and any levels in a Class 7a building containing accessible carparking spaces. **Comment:** Compliant access is required from the allotment boundary to the main entry of both warehouse tenancies and from accessible parking spaces to each building (in accordance with AS 1428.1-2009). Refer to D4D4 and D4D5 below. Compliance with D4D3 is readily achievable.
D4D4	**Parts of the Building to be Accessible:** This clause specifies the requirements for accessways within buildings which must be accessible. In accordance with Clause D4D4; ramps & stairways must comply with Clause 10 & 11 of AS 1428.1-2009 (respectively), whilst fire isolated stairs must comply with Clauses 11.1(f) & (g) of AS 1428.1-2009 only. In addition, any storey with a floor area more than 200m² must be served by a passenger lift that is designed to comply with Part E3, and all accessways must include passing & turning spaces per AS 1428.1-2009. Clause D4D4(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm. **Comment:** As indicated above, the proposed building is required to be accessible throughout in accordance with AS1428.1-2009 – Refer to Access Consultant Report for further details. The following is a summary of key matters to be considered with respect to the above: + An accessible path of travel complying with AS 1428.1 2009 is to be provided from the allotment boundary and from the accessible car spaces and is to be detailed on the Construction Certificate plans. Where a kerb is proposed, a kerb ramp is to be provided so the accessible path is free from steps. + Every ramp, except a fire-isolated ramp, must comply with clause 10 in AS 1428.1-2009. + Every stairway, except a fire-isolated stairway, must comply with clause 11 of AS 1428.1-2009. + Every fire-isolated stairway must comply with clause 11.1(f) and (g) of AS 1428.1-2009. + Every passenger lift must comply with clause E3D7 and E3D8. + Accessways must have passing spaces complying with AS1428.1-2009 at a maximum 20m intervals on those parts of the accessway where a direct line of sight is not available and turning spaces complying with AS1428.1-2009 within 2m of the end of accessways and at a maximum 20m intervals along the accessway. + Clause D4D4(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm. + The minimum width of an accessible doorway must have a clear opening width of not less than 850mm in accordance with AS 1428.1. + All doorways on a continuous path of travel shall have a minimum luminance contrast of 30% provided between: door leaf and door jamb; or door leaf and adjacent wall; or architrave and wall; or door leaf and architrave; or door jamb and adjacent wall. The minimum width of the area of luminance contrast shall be 50mm. + Circulation space to the doorways that are required to be accessible are to comply with Section 13 of AS1428.1-2009, as detailed below.

	+ Turning Spaces and Passing Spaces in all areas are required to be provided on each level of the building in accordance with Clauses 6.4 & 6.5 of AS 1428.1-2009. <u>Stairways</u> + Every common area stairway must be constructed in accordance with Clause 11 of AS 1428.1, except if they serve the areas in the building that a D4D5 Exemption has been applied to. Details will need to be confirmed on the plans for CC. + Stairs shall have opaque risers (i.e. solid). + Stair nosings shall comply with Figure 27 in AS 1428.1-2009, which achieve a colour contrast luminance of 30% to the background (tread). + Stairways are to be served by Tactile Ground Surface Indicators in accordance with AS 1428.4.1, except if they are within a fire isolated exit. <u>Handrails</u> + Handrails shall be installed along stairways as follows: o Shall be continuous through the flight and where practicable, around landings and have no obstruction on or above up to a height of 600mm, o Installed along both sides of the stairway (giving consideration also to 1m unobstructed width). Shall have a compliant hand clearance in accordance with Figure 29 of AS 1428.1-2009.
D4D5	**Exemptions:** This clause provides details on buildings or parts of buildings not required to be accessible under the BCA where providing access would be inappropriate because of the nature of the area/use or the tasks undertaken. **Comment:** Reference is to be made to an Access Consultant Report. Note: Consideration to an exemption to the Warehouse areas may be appropriate on this project. Confirmation from ISPT or the tenant will be required at the CC Application stage that includes a request for concession, where this would be applied and the reasons why it would be inappropriate for access for people with disabilities within the facility.
D4D6	**Accessible Parking:** This clause provides details of the number of accessible carparking spaces required in a carpark depending on the classification of the building. **Comment:** In the case of the Class 5 & 7b buildings 1 compliant accessible space is required for every 100 parking spaces or part thereof. In this regard, it is noted that there are adequate accessible parking spaces detailed on the most current plans.
D4D7	**Signage:** Braille and tactile signage must be provided to required accessible sanitary facilities, spaces with hearing augmentation, ambulant sanitary facilities, pedestrian entrances that are not accessible, and to each door required by Clause E4D5 to be provided with an exit sign. The latter is to state EXIT and state the level e.g. LEVEL 1. **Comment:** Signage will be required to identify exits, accessible facilities, an ambulant accessible facility, and the paths to accessible pedestrian entries (where required) – Refer to Access Consultant Report.
D4D9	**Tactile Indicators:** This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator, passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D4D5. **Comment:** Subject to D4D5 above, stairways and ramps serving the proposed building, any overhead projections less than 2m in height and any paths leading directly to a driveway or roadway without a kerb will need to be provided with Tactile Ground Surface Indicators in accordance with AS1428.4. Details and design certification demonstrating compliance will be required to be included in the CDC plans.
D4D12	**Ramps:** Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1. **Comment:** Architect to note, details and design certification demonstrating compliance will be required to be included in the CC plans – Refer to Access Consultants Report.

D4D13	**Glazing on an Accessway:** This part requires the provision of a contrasting strip, chair rail, handrail or transom across all frameless or fully glazed doorways and surrounding glazing capable of being mistaken for an opening. **Comment:** Glazing capable of being mistaken for an opening as listed above must be clearly marked for their full width with a solid, non-transparent contrasting line being not less than 75mm wide and the lower edge must be located between 900mm and 1000m above the plane of the finished floor level.

3.4 Section E – Services and Equipment

E1D2	**Fire Hydrants:** + E1D2(1) – A fire hydrant system must be provided to serve a building having a total floor area greater than 500m² and where a fire brigade is available to attend a building fire. + E1D2(2) – Requires that the fire hydrant system must be installed in accordance with the provisions of AS2419.1-2021 and details where internal hydrants must be located. + E1D2(3) – details concessions to AS 2419.1-2021 compliance associated with Class 8 Electricity Network Substations, and Hydrant Booster assembly locations where buildings are sprinkler protected. + E1D2(4) – states that internal fire hydrants must serve the level in which they are installed. **Comment:** The building must be served by a compliant hydrant system which is designed in accordance with AS 2419.1-2021 Appendix C. Detailed plans showing the location of the hydrants (and booster assembly) providing coverage to all areas of the building and a design Performance Solution is to be provided with the CC application.
E1D3	**Fire Hose Reels:** A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m². This clause requires that the fire hose reel system must be installed in accordance with AS 2441 and sets out the detail for location and uses of fire hose reels. **Comment:** The Class 7b warehouse areas must be provided with fire hose reels in accordance with this clause. Plans shall be provided with the CC documentation together with a design certificate to AS2441-2005 that details the coverage provided by the fire hose reels on each level. It is noted that a Performance Solution by the Fire Engineer may be necessary if hose reels are to be deleted from the Class 7b portions of the building. Note: The Class 5 Office areas are subject to the concession in E1D3(1) and are not required to be provided with fire hose reel coverage
NSW E1D4, E1D12 & E1D13	**Sprinklers** A sprinkler system must be installed in a building or part of a building when required by Clauses E1D5 to E1D13 and comply with Specification 17 or 18. Specification 17 sets out requirements for the design and installation of sprinkler systems in Class 2-9 Buildings, and details the required design standards, including AS 2118.1-2017 and AS 2118.6-2012. **Comment:** As the building is designated as a Large Isolated Building, it is required to be sprinkler protected throughout. Details demonstrating compliance are required to be submitted with the CC application. Note: In accordance with Clause 4.14.1 of AS2118.1-2017, sprinkler boosters are required to comply with the requirements of AS2419.1-2021 for a hydrant booster.
E1D14	**Portable Fire Extinguishers:** To be provided and designed in accordance with Sections 1, 2 and 3 of AS 2444-2001.

	Comment: Fire extinguishers will be required to be installed in the proposed building in accordance with sub-clauses (1), (3) & (5) and AS 2444-2001 in the class 5 office areas.
E1D15	**Fire Control Centre:** A fire control centre is to be provided based on the total building floor area comprising more than 18,000m2. A fire control centre must: + Be located in a building so that egress from any part of its floor to a public road or open space does not involve changes in level which in aggregate exceed 300mm. + Provide an area from which fire-fighting operations or other emergency procedures can be controlled. Must not be used for any other purpose. **Comment:** All three warehouses exceed 18,000m2 thus requiring a fire control centre each. This is to be nominated on the drawings as the plans progress.
E1D17	**Provisions for Special Hazards:** Suitable additional provisions must be made for fire-fighting if unique problems could arise due to; + The nature or quantity of materials stored, displayed or used in a building on the allotment; or + The location of the building in relation to a water supply for firefighting purposed. **Comment:** It is noted that if Dangerous Goods (or other materials that would otherwise increase the fire load of the building) are proposed to be stored/utilised in significant quantities, details will be required from both the sprinkler system designer and the Fire Engineer, confirming that the proposed firefighting systems have the required capability to address the additional hazard.
E2D3	**General Requirements:** Class 2 to 9 buildings must comply with the provisions of this Clause to remove smoke during a fire, to control the operation of air handling systems and to prevent the spread of smoke between compartments. Buildings must comply with the provisions of E2D4, as applicable to Class 2 to 9 buildings. It deals with the design and construction of air handling systems that are part of a smoke hazard management system and air handling system that are not part of a smoke hazard management system. The details relating to the installation and operation of the systems are set out in Specifications 20, 21, & 22.
E2D10	**Buildings <25m Effective Height – Large Isolated Buildings:** This clause sets out the requirements for smoke hazard management systems for large isolated buildings with an effective height of less than 25m. **Comment:** As the volume of the proposed Large Isolated Building exceeds 108,000m^3 an automatic smoke exhaust system (incorporating a smoke detection system) is required to be provided, complying with Spec. 21. Consideration to a Performance Solution addressing the rationalization of the required smoke hazard management system may be appropriate for the building. Such a Performance Solution will need to be prepared by the Fire Engineer, to demonstrate compliance with Performance Requirement E2P2.
E2D21	**Provisions for Special Hazards:** Additional smoke hazard management measures may be necessary due to the— + Special characteristics of the building; or + Special function or use of the building; or + Special type or quantity of material stored, displayed or used in a building; or + Special mix of classifications within a building or fire compartment, which are not addressed in E2D4 to E2D20. **Comment:** It is noted that if Dangerous Goods (or other materials that would otherwise increase the fire load of the building) are proposed to be stored/utilised within the building in significant quantities, details will be required from both the mechanical system designer and the fire engineer confirming that the proposed smoke hazard management systems have the required capability to address the additional hazard resulting from the Lithium-Ion battery storage in the buildings.
E3D4	**Warning Against use of Lifts in Fire:** Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure E3D4.

	Comment: Lift Contractor to note.
E3D6	**Landings:** Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2 & D3. **Comment:** Lift Contractor to note.
E3D7	**Passenger Lift Types and Their Limitations:** In an accessible building, every passenger lift must be one of the types identified in sub-clause (1) and not rely on a constant pressure device for its operation if the lift car is fully enclosed. **Comment:** Lift Contractor to note.
E4D2 – E4D8	**Emergency Lighting and Exits Signs:** Emergency lighting and exit signage to be provided in accordance with E4D2 - E4D5 complying with AS 2293.1 – 2018.
E4D4	**Design & Operation of Emergency Lighting:** Every required emergency lighting system must comply with AS 2293.1-2018. **Comment:** Electrical Consultant to note.
E4D5	**Exit Signs:** An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed. **Comment:** Electrical Consultant to note.
E4D6	**Direction Signs:** If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit. **Comment:** Electrical Consultant to note, details demonstrating compliance will be required to be included in the CC plans.

3.5 Section F – Health and Amenity

F1D3	**Stormwater Drainage:** A roof balcony, podium or similar must have a system of stormwater drainage and the structural substrate must be graded with a minimum fall of 1:80 to a drainage outlet. **Comment:** Details of stormwater disposal are required to be prepared by a suitably qualified consultant and submitted with documentation for the CC Application.
F1D6	**Damp-Proofing:** + This sub-clause requires that moisture from the ground must be prevented from reaching certain parts of buildings as listed. + This sub-clause requires that all damp-proofing materials and termite shields used as damp-proofing must comply with AS/NZS 2904 and AS 3660.1. + This sub-clause lists the buildings and parts of a building that do not need to comply with (a). **Comment:** Note.
F1D7	**Damp Proofing of Floors on the Ground:** If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means. **Comment:** Note.

F2D3 & F2D4	**Wet Area Construction:** These clauses set out the construction requirements for wet areas in Class 2-9 Building, in relation to floor and wall materials, surface grading, floor wastes and drainage. **Comment:** Note – Design Certification will be required to be provided at CC Application stage.
F2D4	**Floor Wastes:** Where a floor waste is provided, the fall of the floor plane to the floor waste is required to be between 1:80–1:50. **Comment:** Note – Applies to all floor wastes internally and externally.
F3D2	**Roof Coverings:** This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a) to (g) which identifies the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation. **Comment:** Note – Design Certification required at CC Application Stage.
F3D3	**Sarking:** Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2 **Comment:** Note.
F3D4	**Glazed Assemblies:** Glazed assemblies in an external wall must comply with AS2047 requirements for resistance to water penetration for windows, sliding doors with a frame, adjustable louvres, shop fronts and windows with one-piece framing **Comment:** Note.
F3D5	**Wall Cladding:** The following wall cladding materials are deemed to satisfy Performance Requirement F3P1: + Masonry, including masonry veneer, unreinforced and reinforced masonry, complying with AS 3700, + Autoclaved aerated concrete, complying with AS 5146.3, + Metal wall cladding, complying with AS 1562.1. **Comment:** Details are to be provided with the F3P1 Performance Solution Report, demonstrating compliance, prior to the issue of the CC.
F3P1 & F3D5	**Performance Requirement F3P1:** A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause + Unhealthy or dangerous conditions, or loss of amenity for occupants; and + Undue dampness or deterioration of building elements. Note 1: There are limited Deemed-to-Satisfy provisions for this Performance Requirement in respect to External Walls. DtS wall types include; masonry; autoclaved aerated concrete; and metal wall cladding only. Note 2: Refer to Clause F3D2 for roof coverings. **Comment:** A Performance Solution Report will be required to address the above, noting that the proposed design does not comprise of wholly DtS materials.
F4D4	**Facilities in Class 3 to 9 Buildings:** This clause provides the requirements for sanitary facilities to be installed in Class 3-9 buildings in accordance with Tables F4D4a – F4D4l. The requirements and variations are set out in sub-clauses (1)-(11). **Comment:** Sanitary facilities are to be indicated on the drawings and the population for each warehouse is to be provided to confirm compliance with this clause. Note 1: Where sanitary compartments are noted as Unisex on the floor plans they are required to be allocated as either Male or Female per Clause F2D4(1). Note 2: Where individual stand-alone sanitary compartments are they must be allocated for use by Males or Females only unless they are designed as a unisex accessible compartment per Clause F2D4(1).

	Note 3: As mentioned under D2D18 above, these population numbers may be considered excessive for the development and hence more accurate population numbers may be provided by ISPT/the tenant.
F4D5	**Accessible Sanitary Facilities:** Accessible unisex sanitary compartments must be provided, in accordance with F4D6 and unisex showers must be provided in accordance with Table F4D7, in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i). **Comments:** The proposed accessible toilet facilities and ambulant sanitary facilities in the building are required to achieve compliance with the provisions of F4D5 and F4D6. Details demonstrating that the design of each facility complies with AS 1428.1 are to be provided at the CC application stage, however, compliance is readily achievable.
F5D2	**Height of Rooms and Other Spaces:** The ceiling heights in Class 2 to 9 buildings must not be less than required in sub-clauses (1) to (8) of this clause. The minimum ceiling heights for a Class 5, 6 & 7 building are as follows: + Corridor or Passage, Bathroom, Storeroom, etc. – 2.1m + Remainder – 2.4m. The minimum ceiling heights for a Class 9b building are as follows: + A part (including a corridor serving the part) that accommodates not more than 100 persons – 2.4m; A part (including a corridor serving the part) that accommodates more than 100 persons – 2.7m. **Comment:** Architect to ensure compliance. Ceiling heights are to be reviewed at the Construction Certificate state with the detailed section drawings.
F6D5	**Artificial Lighting:** Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. Sub-clauses (1) - (3) sets out the places where artificial lighting is always required in all classes of buildings and the standard to which it must be installed. **Comment:** Design certification to be submitted at CC Application.
F6D6	**Ventilation of Rooms:** A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F6D7 or a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1. **Comment:** Design certification to be submitted at CC Application.
F6D8	**Ventilation Borrowed from Adjoining Room:** Natural ventilation must consist of openings, windows, doors or other devices which can be opened— with a ventilating area not less than 5% of the floor area of the room required to be ventilated. Additionally, open to a suitably sized space open to the sky or an adjoining room in accordance with F6D8. **Comment:** Design certification to be submitted at CC Application.

3.6 Section J – Energy Efficiency

Part J4	**Building Fabric:** The provision of insulation of the building envelope will be required in the proposed Building, in accordance with Clauses J4D3 to J4D7, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, and Floors. Design details and/or certification of design will be required to be provided in this regard. **Comment:** This section applies to the building envelope of any air-conditioned spaces proposed within the Warehouse buildings. Design details and/or certification of building envelope design will be required to be submitted with the application for a Construction Certificate.

Part J5	**Building Sealing:** The provision of a compliant building sealing is required to all chimneys & flues, roof lights, windows & doors, Exhaust Fans, Ceilings Walls, & floors in accordance with Clauses J5D3 to J5D7. **Comment:** This section applies to any air-conditioned spaces proposed within the Warehouses buildings. Design details and/or certification of building envelope design will be required to be submitted with the application for a Construction Certificate.
Part J6	**Airconditioning & Ventilation Systems:** Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance with the relevant requirements of Part J6 will be required to be provided from the mechanical engineer. **Comment:** Details or certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.
Part J7	**Artificial Light & Power:** Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J7 will be required to be provided from the electrical engineer **Comment:** Consultant certification required at CC Application Stage.
Part J8	**Hot Water Supply, & Swimming Pool & Spa Pool Plant:** Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J8 (Section 8 of AS 3500.4) will be required to be provided from the hydraulic engineer. **Comment:** Details and certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.
Part J9	**Facilities for Energy Monitoring:** Provision for monitoring of energy consumption must be provided to a building where the floor area exceeds 500m², and must be capable of recording the consumption of gas and electricity. In addition, where the floor area of the building exceeds 2,500m² the energy monitoring facilities must be capable of individually recording air-conditioning, lighting, appliance power, central hot water supply, lifts/escalators, and other ancillary plant and being connected to a single interface monitoring system. **Comment:** Details or certification demonstrating compliance with J9D3 for energy monitoring, J9D4 for provision for EV charging stations, and J9D5 for solar, will need to be submitted with the application for a Construction Certificate.

4.0 Conclusion

This report contains an assessment of the referenced architectural documentation for the proposed Summit at Kemps Creek development against the Deemed-to-Satisfy provisions of the Building Code of Australia 2022.

Arising from the assessment, key compliance issues have been identified that require further resolution, either by way of fire engineered Performance Solutions or plan amendments prior to Construction Certificate stage.

Notwithstanding the above, it is considered that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified in this report.

Appendices

+ Appendix 1 – References Tables

Table 1: Non-Combustibility Requirements

+ Building Element	+ Type C Construction
External wall	Non-combustible
Common wall	Non-combustible
Floor and floor framing of lift pit	Non-combustible
All loadbearing internal walls (including those of shafts)	Concrete, masonry or fire-protected timber
Loadbearing fire walls	Concrete, masonry or fire-protected timber
Non-loadbearing internal walls required to be fire-resistant	Non-combustible
Non-loadbearing lift, ventilating, pipe, garbage and the like shafts which do not discharge hot products of combustion.	Non-combustible (subject to conditions outlined in C2D10)

Table 2: Fire Hazard Properties Requirements – Floor Linings

+ Table S7C3 of Specification 7 Critical Radiant Flux of Floor Linings and Floor Coverings			
+ Class of Building	**Building Not Fitted with a Sprinkler System**	**Building Fitted with a Sprinkler System** (other than a FPAA101D or FPAA10H System)	**Fire-isolated Exits and Fire Control Rooms**
Class 2, 3, 5, 6, 7, 8 or 9b, excluding: + Class 3 accommodation for the aged; and + Class 9b	2.2 kW/m2	1.2 kW/m2	2.2 kW/m2

Table 3: Fire Hazard Properties Requirements – Wall and Ceiling Linings

+ Table S7C4 of Specification 7 – Wall and Ceiling Lining Materials (Materials Groups Permitted)				
Class of Building	**Fire-isolated Exits and Fire Control Rooms**	**Public Corridors**	**Special Areas**	**Other Areas**
Class 5, 6, 7, 8 or 9b schools, Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3

Table 6: Fire-Resisting Construction – Type C Construction

+ Building Element	+ Class of Building - FRL: (in minutes) Structural adequacy/integrity/insulation			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL – (Including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is:				
For loadbearing parts:				
Less than 1.5m	90/90/90	90/90/90	90/90/90	90/90/90
1.5 to less than 3m	–/–/–	60/60/60	60/60/60	60/60/60
3m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN - Not incorporated in an external wall				
Less than 1.5m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3m	–/–/–	60/–/–	60/–/–	60/–/–
3m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS	90/90/90	90/90/90	90/90/90	90/90/90
INTERNAL WALLS				
Bounding public corridors, public lobbies and the like:	60/60/60	–/–/–	–/–/–	–/–/–
Between or bounding sole-occupancy units:	60/60/60	–/–/–	–/–/–	–/–/–
Bounding a stair if required to be rated:	60/60/60	60/60/60	60/60/60	60/60/60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Notes:

1. New external walls that are located 1.5m or more from an allotment boundary/fire source feature require no FRLs.
2. Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must typically achieve the same FRL. Where that part is also required to be non-combustible, the supporting part must also be non-combustible.
3. An external wall required to have an FRL is only required from the outside.
4. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification 6.
5. The method of attaching or installing a finish, lining, ancillary element, or service installation to a building must not reduce the fire-resistance of that element to below that required.
6. No structural elements are permitted to pass through fire-rated walls.

+ Appendix 2 – Fire Safety Schedule

The following table is a list of the required fire safety measures within the building. These measures may be subject to further change pending the outcomes of the final Fire Safety Engineering Review to confirm the works are permissible and do not contradict the base building Performance Solutions.

Table 7: Fire Safety Schedule

+ Statutory Fire Safety Measure	+ Design/Installation Standard	+ Proposed
Alarm Signalling Equipment	AS 1670.3 – 2018	✓
Automatic Fire Detection & Alarm System	BCA 2022 Spec. 20 AS 1670.1 – 2018	✓
Automatic Fire Suppression Systems	BCA 2022 Spec. 17 & BCA Spec 18 AS 2118.1 – 2017 or AS 2118.4, 6 – 2012	✓
Building Occupant Warning System activated by the Sprinkler System	BCA 2022 Spec. 17 Clause 8 and / or Clause 3.22 of AS 1670.1 – 2018	✓
Emergency Lighting	BCA 2022 Clause E4D2 & E4D4 AS 2293.1 – 2018	✓
Emergency Evacuation Plan	AS 3745 - 2010	✓
Exit Signs	BCA 2022 Clauses E4D5, NSW E4D6 & E4D8 AS 2293.1 – 2018	✓
Fire Control Centres	BCA 2022 Spec 19	✓
Fire Hose Reels	BCA 2022 Clause E1D3 AS 2441 – 2005	✓
Fire Hydrant Systems	BCA 2022 Clause E1D2 AS 2419.1 – 2021 Appendix C	✓
Lightweight Construction (TBC)	BCA 2022 Clause C2D9 AS 1530.4 – 2014 and Manufacturer's Specification	✓
Perimeter Vehicular Access	BCA 2022 Clause C3D5	✓
Portable Fire Extinguishers	BCA 2022 Clause E1D14 AS 2444 – 2001	✓
Smoke Hazard Management Systems + Smoke Exhaust	BCA 2022 Part E2 AS/NZS 1668.1 –2015	✓
Warning & Operational Signs	BCA 2022 Clause D4D7, E4D4	✓
Fire Engineered Performance Solutions TBC	TBC	✓