



BCA Assessment Report

BAESA F35 Program WLM – Schedule 1 – South Hanger



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EXECUTIVE SUMMARY

BCA Logic Pty Ltd were engaged to undertake an audit of the subject building located within the existing Newcastle Airport locality BAE site and is known as the BAESA F35 Program WLM – Schedule 1 – South Hanger to assess the implications of the proposed alterations and additions to the existing building against the applicable Performance or Deemed to Satisfy Provisions of BCA2019 Amendment 1, including the relevant Australian Standards called up under this version of the BCA and the Disability (Access to Premises – Buildings) Standards 2010.

The review included an assessment of the proposed Development Application Plans prepared by Design Inc dated 15 September 2022 Project Number P22-034 and a visual inspection of the existing building on 28 July 2022 as well as a review of the base building Annual Fire Safety Certificate and previous approvals documentation including previous Fire Engineering Assessment Reports. No destructive testing or examination was undertaken.

Part 3 'Matters for Further Consideration' of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions.

Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

ltem	Description	BCA Provision			
Perfor	Performance Solutions Required				
1.	If a fire shutter is proposed to the new fire wall extension – such shutter will not achieve the 30 minute insulation rating thus will require drenchers to both sides and be addressed in a Performance Solution Assessment Report at Construction Certificate stage.	C3.5 of BCA2019 Amendment 1			
Further Information Required					
1.	Nil at this stage in Design	-			

The detailed results of the audit are contained within Part 5 of this report. Based on the inclusion of the above works in the current Development Consent Application / Approval process will result in an adequate level of fire and life safety consistent with the provisions of Clauses 62 / 64 of the Environmental Planning & Assessment Regulation 2021. Furthermore, the review of the Architectural Drawings that form the basis of the Development Application, indicate that the new works as proposed are capable of complying with the relevant Performance Requirements of the Building Code of Australia 2019 (BCA 2019) Amendment 1.



1 ADOPTION OF BCA 2022

1.1. **Proposed Introduction**

As of 26 August 2022 the ABCB have advised to introduce the National Construction Code (NCC), Volume One, Building Code of Australia (BCA) 2022 on 1 May 2023. BCA2022 is proposing some major changes to Condensation Management, Energy Efficiency and the introduction of Livable Housing Design.

The ABCB will first release a preview of the new energy efficiency and condensation requirements on 1 September 2022. This will be available to download as a pdf from ncc.abcb.gov.au.

Building Ministers have agreed to publish NCC 2022 on 1 October 2022. The full and final version of NCC 2022, in its entirety, will go live on NCC online from this date.

The States and Territories will bring the majority of NCC 2022 into full effect from 1 May 2023, to allow industry time to learn and adapt to the new requirements.

There will also be transition periods for specific requirements. These include:

- New livable housing requirements, new energy efficiency and condensation mitigation requirements – 1 October 2023
- New low lead in plumbing product requirements 1 September 2025.

These provisions of NCC 2022 will be considered voluntary until then

1.2. Major Changes known to date

Below is a summary of the proposed changes which were released in the latest draft preview. We have also provided a table below for quick reference.

Livable housing

Note: NSW have advised that the livable housing provisions **will not be adopted** at this time as a result of the impact of the pandemic, rising interest rates and stability of the current housing market. This could change at any time in the future.

Volumes One and Two contain new livable housing requirements for Class 1a buildings (houses and townhouses) and Class 2 sole-occupancy units (individual apartments). This puts in place features based on the Livable Housing Design Guidelines silver standard, with a voluntary gold standard also available for features over and above silver-

Consistent volume structure

BCA2022 uses a new structure and clause referencing system to create better consistency across all volumes. While the new Section-Part-Type-Clause system makes the NCC look different at first, it's intended to improve user experience and make it more web accessible.

The new structure results in a reorganisation of specifications and parts, some of which are contained in the table below.

Early childhood centres

There are new deemed-to-satisfy (DTS) Provisions for early childhood centres in Volume One. Most of these are extra requirements to address the difficulties associated with evacuating young occupants from the upper levels of multi-storey buildings; but some requirements apply for all early childhood centres.



Fire safety of external walls

Volume One contains a number of amendments to the fire safety of external walls. This clarifies interpretation of concessions from non-combustibility requirements. Also included is a new provision that prevents fixing of certain bonded laminated cladding panels by adhesive only.

Waterproofing

There are new DTS Provisions in Volume Two for waterproofing of wet areas, not previously covered by an acceptable construction practice or manual.

Waterproofing in Volume One is restructured into three parts to enhance readability and accommodate future changes.

Weatherproofing

Volume One contains additional DTS Provisions, providing new solutions for weatherproofing of external walls. These include references to weatherproofing provisions in Australian Standards for masonry, autoclaved aerated concrete and metal wall sheeting.

Falls for floor wastes

Volumes One and Two are amended to require bathrooms and laundries where a floor waste is installed, to have a fall of the floor in order to help drain the surface. This also applies to floor wastes included voluntarily.

Number of exits

Some minor amendments to the required number of exits are in Volume One. This includes a new concession allowing a single exit for a part of a storey in some circumstances, where previously at least two exits were required.

Summary of Major Changes			
Clause Ref BCA 2019	erence BCA2022	Description of proposed changes	
C1.9	C2D10	Non-combustible building elements	
		Further exemptions to the non-combustible requirements of external walls added. Larger list of materials that can be used where non-combustible materials are required.	
-	C2D15	Fixing of Bonded Laminated Cladding panels	
C2.5	C3D6	Fire separation of early childhood centres and requirement for 2 fire compartments per storey.	
D1.2	D2D3	Number of Exits	
		 Ground floor can be provided with a single exit in lieu of 2 2 exits required from each storey and each fire compartment of an early childhood centre 	
D1.6	D2D7 –	Dimensions of Exits	
	D2D11	Clause split into multiple clauses	
D1.11	D2D16	Horizontal Exits – New provisions relating to early childhood centres	
D2.16	D3D17 - D3D21	Barrier clause split into multiple clauses	

1.3. Summary of Major Changes



E1.5	E1D4 - E1D13	Sprinkler requirements split into separate clauses for each building class.		
E2.2	E2D3 –	General Requirements – Smoke Hazard Management		
	E2D21	Tables removed and replaced with clauses for each building class		
F1.7	Part F2	Wet Area and Overflow Prevention		
F1.11	F2D4	Floor wastes – floor must be graded with a minimum fall of 1:80		
FP1.4	Part F3	Roof and Wall Cladding		
		Introduces DTS provisions for walls and roofs in lieu of the previous BCA requiring performance solutions for all weatherproofing		
-	G7	Livable housing design		
H1.1	Part I1	Class 9b Building		
H2.1	Part I2	Public Transport Buildings		
H3.1	Part I3	Farm Buildings and Farm Sheds		



2 BASIS OF ASSESSMENT

2.1. Location and Description

The building development, the subject of this report, is located within the existing Newcastle Airport locality BAE site located and is known as the BAESA F35 Program WLM – Schedule 1 – South Hanger. The subject site address is known as 55C Slades Road, Williamtown.

Site Plan Courtesy Near Map



2.2. Purpose

The purpose of this report is to assess the existing building against the Deemed-to-Satisfy (DTS) provisions of Sections of C, D, E and F of the BCA2019 as well as the Affected part provisions of the Disability (Access to Premises – Buildings) Standards 2010, and to clearly outline those areas where compliance is not achieved in relation to fire and life safety and accessibility. Then the additional purpose of this report is to assess the current design proposal for the alterations and additions against the Deemed-to-Satisfy Provisions of BCA 2019, Amendment 1, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover at the Construction Certificate Stage.

Where a deficiency within an existing building has been identified it may or may not necessarily result in that deficiency being required to be upgraded to strictly meet the deemed-to-satisfy provisions of BCA2019.



With this in mind, and given the physical and practical constraints and limitations that are present within the existing building, the overall aim of the Report is to provide an upgrade strategy which will outline areas where it is considered appropriate to upgrade the existing building in regard to the occupant fire and life safety.

This report is provided to accompany the Development Application submission for the alterations and additions to the existing development.

It should be noted that through a Development Consent application process, the Council under Clause 62 and 64 of the EP & A Regulations 2021 does have discretion as to the level of upgrading required, noting strict compliance with the BCA is not always required or appropriate. Where Council discretion would normally be requested, this has been clearly identified within the report.

2.3. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019, Amendment 1 (BCA) incorporating the State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. Refer Part 1 of this report for an update on the next iteration of the BCA / NCC 2022 and planned implementation date.

2.4. Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

- (a) the structural adequacy or design of the existing or proposed building;
- (b) the inherent derived fire-resistance ratings of any existing or proposed structural elements of the building (unless specifically referred to); and
- (c) the design basis and/or operating capabilities of any existing or proposed electrical, mechanical or hydraulic fire protection services.

This report does not include, or imply compliance with:

- (a) the National Construction Code Plumbing Code of Australia Volume 3
- (b) the Disability Discrimination Act 1992 including the Disability (Access to Premises Buildings) Standards 2010 – unless specifically referred to), (Note: The provision of disabled access to the subject development has been assessed against the deemed to satisfy provision of Part D3 and F2.4 of BCA2019 only and a review of the Affected Part provisions of the Disability (Access to Premises – Buildings) Standards 2010;
- (c) Demolition Standards not referred to by the BCA;
- (d) Work Health and Safety Act 2011;
- (e) Requirements of Australian Standards unless specifically referred to;
- (f) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
- (g) Conditions of Development Consent issued by the Local Consent Authority.

2.5. Design Documentation

This report has been based on the Design plans and Specifications listed in Annexure A of this Report.



3 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

3.1. Rise in Storeys (Clause C1.2)

The main South Hanger building has a rise in storeys of one (1) – even though the South Hanger is greater than 6.0m in height, it is the only storey above ground level. Thus remains as a rise in storeys of one (1) – there are upper level plantroom areas not counted in the rise in storeys. The detached storage building is also a single storey building.

3.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
5	Ground level	Office Areas
7b	Ground level	Storage of Materials
8	Ground level	Repair and Manufacturing to Hanger and Workshop areas.

3.3. Effective Height (Clause A1.0)

The buildings have an *effective height* of less than 25 metres and less than 12 metres.

3.4. Type of Construction Required (Table C1.1)

The buildings are required to be of Type C Construction (as a result of the being treated as a Large Isolated Building).

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

The main South Hanger building is normally subject to maximum floor area and volume limits under Type A Construction of: -

Class 5	Maximum Floor Area	3,000m ²
	Maximum Volume	18,000m ³
Class 7b / 8	Maximum Floor Area	2,000m ²
	Maximum Volume	12,000m ³

However as detailed on the base building AFSS – there is a perimeter vehicle access roadway provided around the entire building thus the building has historically been treated as a Large Isolated Building, which has maximum floor area of 18,000m2 and volume of 108,000m3. Notwithstanding this fact, the building has been separated down the centre by a 120/120/120 FRL fire wall which is to be maintained as part of the subject works in not reducing the current levels of fire and life safety.

The detached southern storage building is below the 2,000m2 and 12,000m3 area and volume that is within the limitations of this clause.

3.6. Fire Compartments

The following *fire compartments* have been assessed as existing onsite as highlighted in the high level plan below with the two portions separated by an existing fire wall:



- (a) The detached southern building forms the one fire compartment.
- (b) South Hanger portion forms the one fire compartment, and
- (c) The Annex Support building and Existing Admin building forms a separate fire compartment:



3.7. Exits

The following points in the building have been considered as the exits:

(a) The doors that discharge direct to open space around the perimeter of the building.

3.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5.

3.9. Location of Fire-source features

The fire source features for the subject development are:

North: Adjacent buildings located on the same allotment where within 6.0m.

South: Adjacent buildings located on the same allotment where within 6.0m.

East: Adjacent buildings located on the same allotment where within 6.0m.

West: Adjacent buildings located on the same allotment where within 6.0m.

In accordance with Clause 2.1 of Specification C1.1, a part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that–

(a) has an FRL of not less than 30/–/–; and



(b) is neither transparent nor translucent.

The subject building is located greater than 6.0m to any adjacent buildings on the same allotment thus is not considered to be exposed to any fire source features.



4 CLAUSE 62 AND 44 – ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2021

4.1. Introduction

As a result of instruction from the client and due to the age of the building, the building audit has been undertaken in accordance with the current provisions of BCA2019 Amendment 1. Along with BCA2019 Amendment 1 provisions, the subject building has also been assessed under the Disability (Access to Premises – Buildings) Standards 2010 for accessibility compliance.

From investigations and review of available documentation, the original construction date of the building is circa 1998, with internal alterations and additions only extending to internal fitout works which appear to have occurred since the original construction date. The original base building was assessed and approved under BCA96. As such the relevant fire safety systems and existing standards would not satisfy the current standards when compared with BCA 2019 Amendment 1 which is now in force

An important point of note in the assessment for compliance of existing buildings is a change to the Building Regulatory Provisions. On 1 July 1997, The Building Code of Australia 1996 (BCA96) was introduced (now known as BCA2019), which is a performance-based document.

This document is divided into two (2) sections, being a performance solution and a deemed-to-satisfy solution (Prescriptive requirements).

A building owner/applicant for new and/or existing buildings can choose either method in evidencing that the subject existing/proposed building provides for an adequate level of fire and life safety for the building occupants.

Accordingly, although an existing building may not meet the prescriptive deemed-to-satisfy provisions of BCA2019, it does not necessarily conclude that the building is unsafe, or warrants any fire safety upgrading works. The building may in fact still satisfy the performance provisions of BCA2019 as a performance solution.

For the purposes, though of carrying out a BCA and Access Assessment and report of the existing building, the assessment contained within this report has been made against the current prescriptive deemed-tosatisfy provisions of the Building Code of Australia 2019 Amendment 1 with such assessment identifying areas where further detailed Fire Engineered Performance Solution reports may be required if necessary.

If any deficiencies are noted, it will then require addressing each deficiency, its level of non-compliance, and its impact on the fire and life safety of the building occupants to determine if such a deficiency will require future upgrading.

From a Building Owners point of view provided the building is being maintained fully in accordance with the standards at the time of original construction / occupation and then as per further approvals, then the Owners obligations are considered to be met.

It is only when the buildings become extremely aged, the use changes or major refurbishment works (that exceed 50% of the volume of the building over a three-year period) are carried out that additional fire safety measures and or fire safety upgrade works need to be further investigated.

Further comment on these fire safety upgrade obligations of the building owner will be made in this report. As there is no change in use proposed from the current Class 5 / 8 usage and the proposed works are less than 50% of the total floor area / volume of the existing building, there will not be an expectation and requirement by the approval authority for the existing development to be upgraded to meet the current performance / deemed to satisfy provisions of BCA2019 Amendment 1 under Clause 62 of the EP & A Regulation 2021.



4.2. Organisational Responsibilities - Disability Discrimination Act 1992 (DDA)

All organisations have a responsibility, under the Federal Disability Discrimination Act (DDA), to provide equitable, dignified access to goods and services and to premises used by the public. Premises are broadly defined and would include all areas included within the subject development.

The DDA provides uniform protection against unfair and unfavourable treatment for people with a disability in Australia. It also makes it unlawful to discriminate against a person who is an "associate" (such as a friend, carer or family member).

Disability is broadly defined and includes disabilities which are:

- physical;
- intellectual;
- psychiatric;
- neurological;
- cognitive or sensory (a hearing or vision impairment);
- · learning difficulties;
- physical disfigurement; and
- the presence in the body of disease causing organisms.

This broad definition means that everyone with a disability is protected. The Act supports the principle that people with a disability have the same fundamental rights as the rest of the community. Provisions apply to a wide range of life activities including:

- access to premises used by the public;
- education;
- provision of goods and services;
- employment;
- administration of Commonwealth laws and programs.

When a person with a disability wants to utilise premises including all buildings, outdoor spaces, car parking areas, pathways and facilities, then equitable, dignified access must be provided. The DDA requires that appropriate changes be made to provide access. A complaint can be made under the DDA if appropriate access is not provided. On 15 March 2010, the Disability (Access to Premises - Buildings) Standards 2010, was tabled in Federal Parliament. These Standards have been under development for many years and significant public consultation has occurred during their development. The Premises standard has now been introduced on 1st May 2011 in line with the updated National Construction Code which incorporates the Building Code of Australia and the National Plumbing Code.

The aim of the Standards is to provide the building and design industry with detailed information regarding the required access provisions associated with the design and construction of new buildings and upgrade to existing buildings. They do not apply to existing buildings that are not undergoing upgrade.

They only apply to elements addressed within the Standards. All other elements related to premises will still be subject to the existing provisions of the DDA.

The Standards generally align with the BCA (see below) and reference a range of Australian Standards relating to access and other associated matters. The Disability (Access to Premises - Buildings) Standards 2010 aim to provide certainty for the building industry in relation to meeting the requirements for access in new and upgraded buildings.

The Access Assessment contained within the report covers the key elements of the Standards as well as additional access requirements to assist in achieving best practice in the provision of access for all to buildings.

The Building Code of Australia 2019, in conjunction with the DDA, applies to all new buildings; new building works to existing buildings and buildings undergoing significant refurbishment or alteration.



Provision of access for a person using a wheelchair or mobility aid is often considered to be an indication of effective design to the built environment. However, the majority of users of car parks, buildings and outdoor areas are pedestrians who also benefit greatly from wheelchair accessible design. Conversely, they can also be denied appropriate access if barriers are incorporated into designs.

In addition, older persons and people with disabilities within the community have a wide range of access needs that are not necessarily satisfied by just providing access for a person using a wheelchair. People also experience the effects of disability through impairment to:

- Sight;
- · Hearing;
- Motor ability;
- Dexterity;
- Balance;
- Mental functioning etc.

Examples of a range of access challenges include:

- People who use wheelchairs face difficulties such as abrupt changes in levels (e.g. steps and steep slopes/gradients) and limited access under basins, benches and tables. They also need an increased circulation area, particularly at doorways and changes in direction.
- People who experience difficulty walking may have stiff hips, balance problems or uncoordinated movements which require attention to stairs and handrails, seating in waiting areas, slip resistant floor finishes and ramps with a gentle slope/gradient.
- People with manipulatory difficulties (finger or hand control) require appropriately selected handles, switches, buttons (in lifts) and taps to enable usage
- People with sensory disabilities, which affect either their hearing or vision, require clear, easy to understand signage and tactile indicators. This requires attention to a variety of factors including colour, contrast, print size, levels of illumination and the provision of appropriate communication systems in public areas.
- People with intellectual disabilities may have difficulty finding their way in new environments. Therefore, direct access routes and clear directional signage with graphics are important.

As a wide range of physical issues impact on the provision of access for people with disabilities, responsive design, incorporating a continuous accessible path of travel, needs to be equitable and therefore inclusive of the needs of all of the community.

Access should cater for both pedestrians and users of wheelchairs and other mobility aids. In addition, consideration must be given to the needs of users who may require assistance from other people as well as assistance animals.

When new building work takes place in an existing building and a building approval is required for that the new work (Construction Certificate or Complying Development Certificate in NSW), the requirements for upgrading access are limited to the area of new work and the 'affected part'. Access requirements are not imposed outside the area of the new work.

For example, a building owner undertakes renovations on one level of their building. The application for building approval triggers the application of the Disability (Access to Premises – Building) Standards 2010 (known as the "Premises Standards"). While the Premises Standards will apply to the area of new work and the 'affected part' of the building they will not apply to the other levels not being upgraded.



These areas of the building outside the area of the new work will continue to be subject to the existing DDA complaints provisions. The "Affected Part" in existing buildings relates to providing an accessible path of travel from the principal public entrance to the new or modified part of an existing building. An example of this is shown in the sketch below. This shows works to two upper floors only within an existing building – the result is the upgrade of the Affected Part being the entrance and lift to access the floors being refurbished.



The upgrade only occurs if the applicant for the works is the "Building owner" or the building is leased to one entity. If the applicant is a tenant / lessee in a multi tenanted / leased premises, no upgrade to the based building is required.

As the base building works are being undertaken by the building owner, there will be an expectation that the affected part to the development is upgraded to be fully Accessible Compliant in accordance with the Disability (Access to Premises – Buildings) Standards 2010.

Notwithstanding this fact – as the base building is of single storey construction, the access from the main entrance would currently be considered as compliant – requiring no further upgrade of the affected part with the proposed works. It is also noted that due to the high security nature of works undertaken within the building and the fact that the type of maintenance work undertaken that requires persons to be generally ambulant with all facilities – there are significant areas of the development that would be considered exempted from requiring access under D3.4 of BCA2019 Amendment 1 such as the battery storage rooms and plant areas.

However, the affected part being doorways along the affected part will be upgraded to achieve compliant 850mm clear widths, contrast door frames and compliant handles as per AS1428.12009.

4.3. Fire Safety Upgrade Works

The primary objective of any fire upgrading works is to achieve a means of fire and occupant safety within the context of the objectives of the Building Regulations (i.e.; Building Code of Australia 2019 Amendment 1) namely: -

- (a) the safety of persons in the event of a fire;
- (b) the prevention of fire; and
- (c) the suppression of fire.



The items referred to within the following pages clearly identify the existing deficiencies when the deemedto-satisfy provisions of BCA2019 Amendment 1 are applied prescriptively to the existing building.

However, as outlined above, BCA2019 Amendment 1 is now a fully performance based document with the prescriptive deemed-to-satisfy provisions being only one of the two methods of satisfying these performance provisions.

With existing buildings strict compliance with the prescriptive deemed-to-satisfy provisions of BCA2019 Amendment 1 is often unlikely and impractical without carrying out massive reconfiguration of the existing building due to the age, use or existing architectural design of the building.

Accordingly, where a deficiency within an existing building has been identified it may not necessarily result in that deficiency being required to be upgraded to strictly meet the deemed-to-satisfy provisions of BCA2019 Amendment 1. If, due to specific site circumstances, it can be shown that the deficiency still satisfies the performance provisions of BCA2019 Amendment 1 as an alternative solution then this deficiency would not require upgrading.

Notwithstanding the above, under S62 and 64 of the Environmental Planning & Assessment Regulations 2021 the local consent authority (Newcastle City Council) have a discretion on the level of upgrading deemed necessary, being either a total upgrade to satisfy the provisions of the BCA or partial upgrading depending on the design, construction extent of alterations and additions and circumstances of the particular building.

When determining the extent of BCA upgrading that may be necessary when undertaking alterations and additions to an existing building, the requirements of S62 and 64 of the Environmental Planning & Assessment Regulations 2021 should be considered.

The relevant requirement of Clause 62 and 64 of the EP & A Regulation 2021 does not require that an existing building be upgraded to comply with the BCA rather it gives the Consent Authority (Newcastle City Council) during the Development Approval assessment process the power to require upgrading where it sees fit to do so.

Clause 62 and 64 of the EP & A Regulation 2021 states:

62 Consideration of fire safety

- (1) This section applies to the determination of a development application for a change of building use for an existing building if the applicant does not seek the rebuilding or alteration of the building.
- (2) The consent authority must-
 - (a) consider whether the fire protection and structural capacity of the building will be appropriate to the building's proposed use, and
 - (b) not grant consent to the change of building use unless the consent authority is satisfied that the building complies, or will, when the development is completed, comply, with the Category 1 fire safety provisions that are applicable to the building's proposed use.
- (3) Subsection (2)(b) does not apply to the extent to which an exemption from a provision of the Building Code of Australia or a fire safety standard is in force under the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

64 Consent authority may require upgrade of buildings

- (1) This section applies to the determination of a development application that involves the rebuilding or alteration of an existing building if—
 - (a) the proposed building work and previous building work together represent more than half of the total volume of the building, or
 - (b) the measures contained in the building are inadequate—
 - (i) to protect persons using the building, if there is a fire, or
 - (ii) to facilitate the safe egress of persons using the building from the building, if there is a fire, or
 - (iii) to restrict the spread of fire from the building to other buildings nearby.
- (2) The consent authority must consider whether it is appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.

(3) In this section—

previous building work means building work completed or authorised within the previous 3 years.

total volume of a building means the volume of the building before the previous building work commenced and measured over the building's roof and external walls.



With the proposed works that form the basis of the Development Application submission being no change in use from the current class 5 commercial office and Class 8 – Workshop / Maintenance Facility, upgrade works the subject of Clause 62 as referred to above would not be considered likely with this application.

Similarly under Clause 64 above – the area of the proposed alterations and additions would not represent more than half of the total volume of the building, thus again no upgrade works considered triggered by S64 above.

It should be noted that under Clauses 62 and 64 above, the primary concern with existing buildings is that of structural adequacy and fire safety.

There is also a further requirement under Clause 19 of the EP & A (Development Certification and Fire Safety) Regulation 2021 that states:

19 Compliance with development consent and Building Code of Australia

- (1) A certifier must not issue a construction certificate for building work unless—
 - (a) the relevant building work plans and specifications include the matters required by a relevant BASIX certificate, if any, and
 - (b) the design and construction of the building, as described in the relevant building work plans and specifications and in other information given to the certifier under section 12, is consistent with the development consent, and
 - (c) the building will comply with the relevant requirements of the Building Code of Australia as in force at the time the application for the construction certificate was made.
 - Maximum penalty (subsection (1))-
 - (a) for a corporation—300 penalty units, or
 - (b) for an individual—150 penalty units.
- (2) Subsection (1)(c) does not apply—(a) to a temporary building, or
 - (b) to the extent of an exemption under section 74(4), 111(4) or 117(1).
- (3) A certifier must not refuse to issue a construction certificate because a building product or system relating to the development does not comply with a requirement of the Building Code of Australia if—
 - (a) a certificate of conformity issued in accordance with the CodeMark scheme is in force in relation to the building product or system, and
 - (b) use of the building product or system is not prohibited under the Building Products (Safety) Act 2017.

Thus any "new works" must be undertaken in accordance with the current BCA2019 Amendment 1 provisions.

At the Construction Certificate stage, the relevant provisions of S14 of the EP & A (Development Certification and Fire Safety) Regulation 2021 also states (noting specifically the sub clause in red font):

14 Fire protection and structural capacity

- (1) A certifier must not issue a construction certificate for building work under a development consent that authorises a change of building use unless—
 - (a) the fire protection and structural capacity of the building will be appropriate to its new use, and
 - (b) the building will comply with the Category 1 fire safety provisions that apply to the new use.
- (2) Subsection (1)(b) does not apply to the extent of an exemption under section 74(4), 111(4) or 117(1).
- (3) A certifier must not issue a construction certificate for alteration building work unless, on completion of the building work, the fire protection and structural capacity of the building will not be reduced.
- (4) For the purposes of subsections (1) and (3), the certifier may assume that the building work is carried out in accordance with—
 - (a) the relevant building work plans and specifications, and
 - (b) the conditions of the construction certificate.
- (5) This section does not apply to building work required by a consent authority as a condition of a development consent that authorises a change of building use.
- (6) In this section
 - alteration building work means building work that—
 - (a) involves the alteration of an existing building, and
 - (b) does not involve a change of building use.
 - fire protection and structural capacity of a building means-
 - (a) the structural strength and load-bearing capacity of the building, and



- (b) the measures to protect persons using the building, and to facilitate their safe egress from the building, if there is a fire, and
- (c) the measures to restrict the spread of fire from the building to other buildings nearby.

Further comment on the assessment of the fire protection and structural capacity of the existing building with the proposed works and evidencing such will not be reduced will be made in Part 5 of this report.

4.4. **Performance Based Design – Performance Solutions**

There are specific areas throughout the existing development where strict Deemed-to-Satisfy BCA Compliance has not been achieved by the existing design and site constraints. There is an existing Fire Engineered Performance Solution Report prepared for the base building by J² Consulting Engineers Report Number 1386 Revision C dated 6 December 2019 that addresses the following:

Table 2. Existing Performance Solutions

#	Performance solutions	BCA DTS Provision	BCA Performance Requirement	Assessment Methodology
1.	To permit the fire rated doors in the fire rated wall to contain drop bolts, which have the potential to latch the door open, thereby preventing the door in closing. The solution will rely upon the provision of a monitored alarm and sounder that will activate when the door is latched in the open position.	C3.5	CP2	Qualitative assessment demonstrating compliance with the relevant performance requirements under A0.3(a)(i) via a performance based analysis under A0.5(b)(ii).
2.	To permit the fire rated doors to be fitted with a double blocking strip which is not tested to be installed on the fire rated doorset. The solution will rely upon sprinkler and foam suppression provided to the areas bounding the fire door.	C3.5	CP2	Qualitative assessment demonstrating compliance with the relevant performance requirements under A0.3(a)(i) via a performance based analysis under A0.5(b)(ii).



5 BCA ASSESSMENT

5.1. General

This part of the report outlines an assessment and upgrading strategy for the subject building, designed to either achieve compliance with DTS provisions of the BCA, or to achieve a reasonable level of compliance with the Performance Provisions of the BCA, given the restraints which exist with an existing building and the proposed extent of the alterations and additions consistent with Clause 62 and 64 of the EP & A Regulation 2021.

The summary below is to be read in conjunction with the BCA specification contained in Annexure F of the report.

5.2. Fire Resistance and Stability – Part C1 & Specification C1.1

The existing base building would generally satisfy the relevant provisions of Type A Construction. Noting the concession under Clause 2.5 of Specification C1.1 of BCA2019 Amendment 1 in that steel columns in the external walls require no FRL in a single storey building.

Also the external walls and all components of the wall, in a building of Type A construction, are required to be non-combustible. The existing external walls contain concrete panels, masonry blockwork, aluminium framed glazing and FC sheeting which would meet the non-combustible definition.

Subject to the extended fire wall section being constructed with a 240/240/240 FRL beneath the extended southern canopy area, the fire resistance ratings and structural integrity of the existing base building will not be reduced – consistent with Clause 14 of Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

All new building materials will need to achieve the required fire hazard properties under Clause / Specification C1.10 of BCA2019 Amendment 1

5.3. Compartmentation and Separation – Part C2

The class 5 / 8 portions of the building have been assessed and the floor area and volume of these compartments is greater than that permitted by Clause C2.2 of the BCA for a building of Type C Construction. Noting that under Type C Construction, the maximum floor area and volume is 2,000m² and 12,000m³ for the class 8 portions. Notwithstanding this fact, the building has historically been treated as a Large Isolated Building under C2.3 of BCA96 with a perimeter vehicle access roadway as nominated in the current AFSS. As such there is no change to the perimeter access roadway with the proposed works. However, the building is still separated down the centre by a 120/120/120 Fire Wall which needs to be maintained so the current levels of fire and life safety are not reduced.

It is also interesting to note that under the Fire Safety Schedule contained in Annexure B of this report – the existing schedule includes perimeter vehicle access – accordingly the building was originally also treated as a Large Isolated Building – thus strictly would not have needed fire compartmentation at all.

As such the small proposed southern canopy extension will also retain the current compartmentation with a small fire wall extension of 120/120/120.

There is no change to the fire separation of the existing main switch board serving the building with the proposed works nor to the existing fire wall which will be retained in place – a small section of new fire wall is proposed to the southern side beneath the new extended canopy area.

The battery storage portion to the southern detached building will need to be enclosed in 120/120/120 FRL separated from the rest of the building.

Ongoing compliance with Part C2 of the BCA can be readily achieved by the proposed works as existing.



5.4. **Protection of Openings – Part C3**

5.4.1. Openings in external walls

The existing external walls are located more than 3m from any side or rear boundary. As such there is no requirement to protect any openings within the external walls.

5.4.2. Openings in Fire Wall Construction

There is a central Fire Wall that runs down the centre of the building. Such fire wall has existing openings protected with fire doors and fire shutters with some of these openings addressed in the Fire Engineered Performance Solution Report re Doors in Fire Walls prepared by J Squared #1386 Rev C dated 6 December 2019. Such openings will remain unaltered with the proposed works.

There is a small fire wall extension to the southern end of the building beneath the new canopy extension – there will also be an opening in such new fire wall which will be protected with a sliding fire door / fire shutter – the appropriate opening protection to be determined at the Construction Certificate Stage which may require assessment under the performance provisions of CP2 in a detailed Fire Engineering Assessment Report.

5.4.3. Openings in Floors for Services and Service Installations

Where electrical, plumbing, mechanical or other services pass through an element of construction that is required to achieve a fire resistance level (FRL) (such as the proposed fire wall extension, the service installation shall not compromise the fire resistance level of the element. A such, the service installation must be fire sealed with a compliant system such as fire collar on PVC pipes or fire rated mastic on electrical cables. New services penetrating the existing and proposed fire wall to be fire sealed as per this Clause. No change to existing services penetrating the existing fire wall with the proposed works.

5.5. Occupant Access and Egress – Section D

5.5.1. Egress from the building

Egress from the existing hanger and office / workshop areas is required in sufficient numbers and location to ensure that no point on the floor is more than 20m from and exit, or a point of choice of two exits, in which case the distance to one of those exits is not more than 40m, as required by clause D1.4 of the BCA. The proposed alterations and additions will not alter in anyway the existing egress configuration to the base building.

The distance between alternative exits is required by clause D1.6 of the BCA to be no closer than 9m and no further apart than 60m when measured through the point of choice. Again, the proposed alterations and additions will not alter in anyway the existing egress configuration to the base building.

Where the egress discharges to open space on the property, a continuous pathway from the point of discharge to the street is required. The plans do indicate such a pathway and as such the provisions of Clause D1.10 of the BCA are readily satisfied taking into consideration the security aspects of the facility.

The existing electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA D2.7. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitable sealed against smoke spread by sealing with fire mastic.

The current exit doors due to the security aspects of the facility remain locked at all times, even under a fire trip scenario. However all required exit doors possess a break glass facility adjacent to each exit door with all staff suitably trained on the egress configuration form the building which is consistent with the high security provisions under Clause D2.21 of BCA2019.



5.5.2. Access for people with disabilities

Clause D1.3 of the BCA requires access to the building as follows:

Class 5 and 8	To and within all areas normally used by	the
	occupants.	

The proposed works internally do not alter the existing accessibility to the subject building via the main entrance.

However under the Affected Part provisions of the Disability (Access to Premises – Buildings) Standards 2010 the affected part needs to be upgraded from the principal entrance to the area of proposed works.

The affected part being doorways along the affected part pathway from the principle pedestrian entrance to the area of new works will be upgraded to achieve compliant 850mm clear widths, contrast door frames and compliant handles as per AS1428.1-2009.

5.6. Services and equipment- Parts E1, E2 and E4

The building is required to be provided with the services and equipment set out in Annexure B of this report. The annexure also outlines the standard of performance to be achieved by the services and equipment.

It is noted that the altered / new fire safety systems such as the sprinkler system need to be installed as per the current standards, however they would be connecting into an existing system installed to previous BCA96 standards at the time the building was originally constructed.

Reference is made to Clause 74 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 which states as follows:

74 Exemption from BCA standards for fire safety building work

- (1) A person may lodge an objection with a certifier that compliance with a specified provision of the Building Code of Australia relating to the operational performance of a relevant fire safety system is unreasonable or unnecessary in the circumstances.
- (2) A person may lodge an objection under this section only if the person has, or will have, the benefit of—
 - (a) a construction certificate subject to a condition under section 22 in relation to building work involving the minor modification or extension of a relevant fire safety system, or
 - (b) a complying development certificate subject to a condition imposed by the Environmental Planning and Assessment Regulation 2021, section 147 in relation to building work involving the minor modification or extension of a relevant fire safety system.
- (3) The objection must—
 - (a) specify the grounds of the objection, and
 - (b) be accompanied by a copy of the building work plans and specifications.
- (4) The certifier may, if satisfied an objection is well-founded, exempt the building work, either conditionally or unconditionally, from a specified provision of the Building Code of Australia.
- (5) A certifier may exempt the building work only if—
 - (a) the non-compliance with the Building Code of Australia relates only to the operational performance of the relevant fire safety system, and
 - (b) the certifier is satisfied the non-compliance will not reduce the operational performance of the relevant fire safety system, and
 - (c) an accredited practitioner (fire safety), other than the accredited practitioner who prepared the building work plans and specifications, has endorsed the non-compliance, and
 - (d) a fire safety certificate or fire safety statement that relates to or includes the fire safety system being modified or extended was issued for the building no longer than 6 months before the objection was made.
- (6) This section does not apply to building work required by a fire safety order.



Thus, where fire safety systems need to be modified to accommodate the new works – such as the sprinkler system, exemptions under the above will be able to be sought to not require the entire base building system to be upgraded to the current standards.

5.7. Facilities in Class 3 to 9 buildings – Part F2

Ordinarily the number of facilities required are to be calculated in accordance with Clause F2.2 and D1.13. The proposed internal alterations and additions will not alter the existing number or type of toilet facilities.

5.8. Room Heights – Part F3

The ceiling heights have been assessed in accordance with Part F3 of the BCA which has indicated that compliance is readily achievable within the proposed altered portions of the building. No change to existing ceiling heights to the balance of the building where no works are proposed.

5.9. Light and Ventilation – Part F4

For class 5 and 8 buildings artificial lighting and mechanical ventilation are required and these systems can be readily installed in the proposed altered portions of the building.



ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 4. Architectural Plans

Architectural Plans Prepared by					
Drawing Number	Revision	Date	Title		
DA000	-	15/09/2022	COVER SHEET		
DA001	-	15/09/2022	SITE ANALYSIS PLAN		
DA002	-	15/09/2022	SITE PLAN & LANDSCAPE PLAN		
DA003	-	15/09/2022	EXISTING & DEMOLITION PLAN		
DA004	-	15/09/2022	GROUND FLOOR		
DA005	-	15/09/2022	ROOF PLAN		
DA006	-	15/09/2022	ELEVATIONS - EXISTING & DEMOLITION		
DA007	-	15/09/2022	PROPOSED ELEVATIONS		
DA008	-	15/09/2022	PROPOSED SECTIONS		
DA009	-	15/09/2022	SHADOW DIAGRAMS		
DA010	-	15/09/2022	MATERIAL SCHEDULE		
DA011	-	15/09/2022	NOTIFICATION PLAN		



ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

The following fire safety measures are installed, or are required to be installed, in the building. Where already installed the existing systems are to be certified as being capable of complying with the minimum standard of performance indicated below unless otherwise specified in Part 5 of this report. The first table below is a schedule of the current fire safety measures onsite, whilst the second table details those fire safety measures to be installed – altered as part of the recommendation works within this document that will form the basis of the Development Consent / Construction Certificate scope.

Table 5. Essential Fire Safety Measure

ltem	Existing Essential Fire Safety Measure	Minimum Standard of Performance	
1.	Automatic Fail Safe Devices	BCA96 Part C3, D2.212	
2.	Automatic Fire Deluge System	BCA96 E1.5, AS2118.1-1982 & AS2118.3-1997	
3.	Automatic Fire Detection and Alarm System (Gas Suppression System)	BCA96 C2.3, Spec E2.2a(7), AS1670.1-1995 & AS4214.1-1995	
4.	Automatic Fire Suppression (Sprinkler) System	BCA96 E1.5, AS2118.1-1999 & FER by Defire #S4080201 Rev 1.1 dated 8 July 2008	
5.	Emergency lighting	BCA96 E4.4, E4.2, AS 2293.1-1998	
6.	Emergency Warning & Intercommunication System	BCA96 Spec E2.2a(6) E4.9 & AS2220.1 & 2- 1989	
7.	Exit signs	BCA96 E4.5, E4.6, E4.8, AS 2293.1-1998	
8.	Fire Dampers	BCA96 C3.12, C3.15, AS/NZS1668.1-1998, AS1682.1 & 2-1990	
9.	Fire Rated Doors with Smoke Seals	BCA96 C3.4, C3.5 Spec C3.4, AS1905.1-2015 & FER by J Squared #1386 Rev C dated 6 December 2019 Re BCA CP2 Non Conformance to DtS C3.5	
10.	Fire hydrant system	BCA96 E1.3, AS2419.1-2005 Clause E1.3 AS 2419.1-2005 & FER by Defire #S4080201 Rev 1.1 dated 8 July 2008	
11.	Fire Hose Reel System	BCA96 E1.4, AS2441-1998	
12.	Fire Seals Protecting Openings in Fire Resisting Components of the Building.	BCA96 C3.15, Spec C3.15, AS1530.4 & AS4072.1-2005 & FER by J Squared #1386 Rev C dated 6 December 2019	
13.	Fire Shutters	BCA96 C3.4, Spec C3.4 & AS1905.2-1989	
14.	Lightweight fire resisting construction	BCA96 C1.8, Spec C1.8	
15.	Mechanical Air Handling System	BCA96 E2.2, Spec E2.2b AS/NZS1668.1-1991	
16.	Perimeter Vehicle Access for Emergency Vehicles	BCA96 C2.3, C2.4	
17.	Portable fire extinguishers	BCA96 E1.6, AS 2444-2001	
18.	Smoke Control	BCA96 E2.2, Spec E2.2a	
19.	Smoke & Heat Vents	BCA96 Spec E2.2c, AS2665-1983	



20.	Warning and operational signs	BCA96 D2.23	
21.	Fire Engineered Performance Solution re Doors in Fire Walls by J Squared #1386 Rev C dated 6 December 2019	 BCA Difference to DtS C3.5, Complies with CP2 The double fire doors located between hanger and office are provided with door open alarm to security if the door is open for greater than 30 secs. D2.23 signage is provided to doors. Sprinkler drencher is <1.2m with baffles and blocking plates to AS2118.1-2017 	
22.	Paths of Travel	The door from the cafeteria is to be retained open to provide escape path from the kitchen and the door signed "Fire Safety Door – Keep Open"	

Table 6. Proposed Essential Fire Safety Measures

ltem	Proposed Essential Fire Safety Measure	Minimum Standard of Performance	
1.	Automatic Fail Safe Devices	BCA2019 Amendment 1 Clause D2.21	
2.	Automatic Fire Suppression (Sprinkler) System	BCA2019 Amendment 1 Clause E1.5, AS2118.1- 2017 *	
3.	Emergency lighting	BCA2019 Amendment 1 Clauses E4.4, E4.2, AS 2293.1-2018	
4.	Emergency Warning & Intercommunication System	BCA2019 Amendment 1 Clause E4.9 & AS1670.4-2018 *	
5.	Exit signs	BCA2019 Amendment 1 Clauses E.5, E4.6, E4.8, AS 2293.1-2018	
6.	New Fire Rated Doors in Fire Wall	BCA2019 Amendment 1 Clause C3.6, Spec C3.4, AS1905.1-2015	
7.	Fire Seals Protecting Openings in Fire Resisting Components of the Building.	BCA2019 Amendment 1 Clause C3.15, Spec C3.15, AS1530.4 & AS4072.1-2005	
8.	Fire Shutters	BCA2019 Amendment 1 Clause C3.4, Spec C3.4 & AS1905.2-1989 and Fire Engineered Report to be prepared	
9.	Portable fire extinguishers	BCA2019 Amendment 1 Clause E1.6, AS 2444-2001	
10.	Warning and operational signs	BCA96 D2.23	

* These items will require a Clause 74 Exemption under the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 to have new fire safety systems connect into an older standard system.



ANNEXURE C FIRE RESISTANCE LEVELS

Annexure C - Fire Resistance Levels

The following fire resistance levels (FRL's) are required for the various building elements, with a fire source feature being the far boundary of a road adjoining the allotment, a side or rear boundary or an external wall of another building on the allotment except a Class 10 structure.

Type A Construction

Table 7. Type A Construction

ltem	Class 5b	Class 7b / 8
Loadbearing External Walls (including columns and other building elements incorporated therein) ¹		
- 3m or more from a <i>fire source feature</i>	120/60/30	240/180/90
Non-Loadbearing External Walls		
- 3m or more from a fire-source feature	-/-/-	-/-/-
External Columns - Loadbearing	120/-/-	240/-/-
- Non-loadbearing	-/-/-	-/-/-
Common Walls & Fire Walls	120/120/120	240/240/240
Other loadbearing internal walls, beams trusses and columns	120/-/-	240/-/-
Floors	Nil FRL	Nil FRL
Roofs ²	Nil FRL	Nil FRL

² The steel columns in the external walls of the existing building gain a concession under Clause 2.5 of Specification C1.1 of BCA2019 Amendment 1 to not require any FRL

¹ The roof need not comply with any FRL's due to the sprinkler protection of the entire building and the building being a single storey building only.

It is noted that the only new structural element proposed with the works that requires a FRL is the Fire Wall extensions – to possess a 240/240/240 FRL.



ANNEXURE E DEFINITIONS

Annexure E - Definitions

Average specific extinction area

Average specific extinction area means the average specific extinction area for smoke as determined by AS 5637.1:2015.

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m2) as determined by AS ISO 9239.1:2003.

Designated bushfire prone area

Designated bushfire prone area means land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Effective height

Effective height means the vertical distance between the floor of the lowest storey included in a determination 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).

<u>Envelope</u>

Envelope, for the purposes of Section J in Volume One, means the parts of a building's fabric that separate a conditioned space or habitable room from—

- (a) the exterior of the building; or
- (b) a non-conditioned space including-
 - (i) the floor of a rooftop plant room, lift-machine room or the like; and
 - (ii) the floor above a carpark or warehouse; and
 - (iii) the common wall with a carpark, warehouse or the like.

<u>Exit</u>

Exit means –

- (a) Any, or any combination of the following if they provide egress to a road or open space—
 - (i) An internal or external stairway.
 - (ii) A ramp.
 - (iii) A fire-isolated passageway.
 - (iv) A doorway opening to a road or open space.
 - (v) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means -

- (a) the total space of a building; or
- (b) 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



(ii) 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 Deemedto Satisfy Provisions of the relevant Part.

Fire-resistance level (FRL)

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria—

- (a) structural adequacy; and
- (b) integrity; and
- (c) insulation,

and expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/-/- means there is no requirement for an FRL for integrity and insulation, and -/-/- means there is no requirement for an FRL.

Fire-source feature

- (a) the far boundary of a road, river, lake or the like adjoining the allotment; or
- (b) a side or rear boundary of the allotment; or
- (c) an external wall of another building on the allotment which is not a Class 10 building

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Flammability index

Flammability Index means the index number as determined by AS 1530.2:1993.

Group number

Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

Horizontal exit

Horizontal exit means a required doorway between 2 parts of a building separated from each other by a fire wall.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

- (a) applied to a material not deemed combustible as determined by AS 1530.1:1994 Combustibility Tests for Materials; and
- (b) applied to construction or part of a building constructed wholly of materials that are not deemed combustible



Occupiable outdoor area

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

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

Open space

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Performance Requirement

Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.

Performance Solution

Performance Solution means a method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.

Sarking-type material

Sarking-type material means a material such as a reflective insulation or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

Smoke developed index

Smoke developed index means the index number for smoke as determined by AS/NZS 1530.3.

Smoke development rate

Smoke development rate means the development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

Smoke growth rate index

Smoke growth rate index (SMOGRA RC) means the index number for smoke used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

Sole-occupancy unit

Sole-occupancy unit means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

- (a) a dwelling; or
- (b) a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
- (d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.



ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Construction Certificate Stage. This schedule should be forwarded to all consultants to obtain verification that these items have and will be included in the design documentation / specifications. The below items relate to the new works only:

Architectural Design Certification

- 1. The FRL's of building elements for the proposed new works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type C Construction with the fire wall extension to be 120/120/120 similar to the existing fire wall FRL.
- 2. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
- 3. Building elements, including external walls and their components, must be non-combustible in accordance with C1.9 of BCA2019.
- 4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
- 5. Any ancillary elements fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C1.14 of BCA2019.
- 6. Vehicular access to the large isolated building will be maintained as existing in accordance with Clause C2.4 of BCA2019.
- 7. The new doorways in any fire walls separating fire compartments will be protected in accordance with Clause C3.5 of BCA2019.
- 8. Any new sliding fire doors in a fire wall which is open when the building is use will be installed in accordance with Clause C3.6 of BCA2019.
- 9. Services penetrating elements required to possess an FRL including the new fire wall extension, will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
- 10. Construction joints, spaces and the like in and between building elements required to be fireresisting with respect to integrity and insulation will be protected in accordance with BCA Clause C3.16.
- 11. Any new fire shutters will be in accordance with Specification C3.4 of BCA2019 and A S;PER THE Fire Engineering Report to be prepared.
- 12. The construction of new EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
- 13. Any new fixed platform, walkway, stairway and ladders and any associated going and riser, landing handrail, balustrade, located within the altered building portions will comply with AS 1657:2018 or Part D2 of BCA2019.
- 14. The new doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
- 15. New door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
- 16. Signage will be provided on new fire doors in accordance with Clause D2.23 of BCA2019.



- 17. The new works will be accessible in accordance with Clause D3.1 and table D3.1, D3.2, D3.3 of BCA2019, and with AS 1428.1:2009, with particular note to door circulation spaces, accessway widths, turning spaces and floor coverings, in accordance with Part D3 of BCA2019.
- 18. Braille and tactile signage will in accordance with Clause D3.6, and Specification D3.6 of BCA2019.
- 19. On a new accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, will be clearly marked in accordance with AS 1428.1:2009 and Clause D3.12 of BCA2019.
- 20. Additional provisions will be made in accordance with Clause E1.10 of BCA2019, due to the special hazards associated with the building works or the location of the building works.
- 21. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
- 22. Any new sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
- 23. Any new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS 1288:2006 / AS 2047:2014.
- 24. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
- 25. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.

Electrical Services Design Certification:

- 26. Emergency lighting will be installed throughout the new portions of the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
- 27. Exit signage will be installed throughout the new portions of the development in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
- 28. The based building emergency warning and intercom system (EWIS) will be altered throughout the new portions of the development in accordance with Clause E4.9 of BCA2019.
- 29. Artificial lighting will be installed throughout the new portions of the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
- 30. Lighting power and controls will be installed throughout the new portions of the development in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

- 31. New storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
- 32. The base building sprinkler system will be installed / altered throughout the new portions of the development in accordance with Clause E1.5 of BCA2019, Specification E1.5 and AS2118.1-2018.
- 33. Portable fire extinguishers will be installed throughout the new portions of the development in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

Mechanical Services Design Certification:

- 34. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
- 35. Any new air-conditioning and ventilations systems will be designed and installed in accordance with Part J5 of BCA2019
- 36. Any new rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.



Structural Engineers Design Certification:

- 37. The material and forms of construction for the proposed new works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:
 - a. Dead and Live Loads AS/NZS 1170.1:2002
 - b. Wind Loads AS/NZS 1170.2:2011
 - c. Earthquake actions AS 1170.4:2007
 - d. Masonry AS 3700:2018
 - e. Concrete Construction AS 3600:2018
 - f. Steel Construction AS 4100:1998
 - g. Aluminium Construction AS/NZS 1664.1 or 2:1997
 - h. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
- 38. The FRL's of the structural elements for the proposed new fire wall have been designed in accordance with Specification C1.1 of BCA2019, including Table 5 for a building of Type C Construction with the fire wall extension to be 120/120/120 similar to the existing fire wall FRL.
- 39. Lightweight construction if used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
- 40. The construction joints to the new fire wall structure will be in accordance with Clause C3.16 of BCA2019 to ensure the FRL of the element concerned is achieved.

