Davis Langdon

# BUILDING CODE OF AUSTRALIA 2011 REPORT

Graythwaite House - BCA Upgrade Report
20 Edward Street, North Sydney
17 June 2011
Project No. 251068

Global property & construction consultants

Davis Langdon

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Revision History

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| A | 27.7.2010 | Initial BCA Assessment | CSS | BC |
| B | 7.9.2010 | DA report for Submission | CSS | BC |
| C | 22.9.2010 | Amendments to previous report | CSS | BC |
| D | 12.11.2010 | Amended for client comments | CSS | BC |
| E | 17.6.2011 | Amendment in response to Part 3A | CSS | BC |

# 1. BACKGROUND

The project involves the conservation and refurbishment of Graythwaite House (the house). The existing building is of a highly significant heritage nature and is in a state of disrepair.

This report outlines the current areas of non-compliance with the BCA and then outlines the anticipated requirements required to be upgraded to ensure an appropriate level of fire and life safety for the building is achieved as required by Clause 94 of the EP & A Regulations for assessment by the consent authority.

# 2. INTRODUCTION

## Property Description

The report is for the assessment of Graythwaite House for the purpose of assessing the level of compliance with the Building Code of Australia 2011 ("BCA"). A summary of all relevant clauses of the BCA is attached under Appendix 1.

The report is prepared based on a visual inspection of the premises and review of the developed documentation to date as listed.

## Reporting Team

The information contained within this report was prepared by Charles Slack-Smith Accredited Certifier Grade A1 (BPB 0378) from Davis Langdon.

## Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979.

This report is split into sections, those existing non-compliances with the building to be fire engineered/addressed by alternative solutions, those non-compliances that have been proposed to be upgraded or addressed by the design team, and those items of non-compliance not proposed to be upgraded for assessment by the consent authority as to whether an upgrade will be required under the provisions on Clause 94 of the Environmental Planning and Assessment Regulation 2000 as detailed in the clause exert below.

**Clause 94 - Consent authority may require buildings to be upgraded (EP & A Regulation 2000)**

(1) This clause applies to a development application for development involving the rebuilding, alteration, enlargement or extension of an existing building where:

(a) the proposed building work, together with any other building work completed or authorised within the previous 3 years, represents more than half the total volume of the building, as it was before any such work was commenced, measured over its roof and external walls, **or**

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

i. to protect persons using the building, and to facilitate their egress from the building, in the event of fire, or

ii. to restrict the spread of fire from the building to other buildings nearby.

(2) In determining a development application to which this clause applies, a consent authority is to take into consideration whether it would be appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.

***(3) The matters prescribed by this clause are prescribed for the purposes of section 79C (1) (a) (iv) of the Act.***

As such those matters listed in the upgrading section are the only items proposed to be upgraded as part of these works and unless a specific DA condition requiring an upgrade for the other items is provided then this is all the upgrading works that the Applicant is anticipating to be undertaken as part of these works.

The provisions of this Act and Regs, in particular Clause 98, require that all new building works are to be designed in accordance with the technical provisions of the State's building laws and in particular, the Building Code of Australia 2010 and this will be achieved for any new works undertaken.

# 3. BUILDING DESCRIPTION

## The Project

The project involves the refurbishment and conservation of “the house” and as stated earlier the existing building is a significant heritage building in a state of disrepair.

## Building Description

**Graythwaite House**

| | |
|---|---|
| Proposed Building Use: | Office/ Administration Area and Function Use |
| Class of Occupancy: | Class 5 & 9b |
| Type of Construction: | Type B |
| Rise in Storeys: | Three (3) |
| | **Note**: subfloor area was not assessed as being a storey |
| Levels Contained: | Three (3) |
| Floor Area: | Approx 1,200m2 |
| Effective Height: | Less than 12m |

**Note**: Should the Construction Certificate application not be lodged before 1st May 2011 then the provisions of BCA 2011 will apply to the project which may have design ramifications to the design of the project particularly in regards to disabled access provisions, this is to be assessed by the teams Disabled Access consultant and advice given, this report is not assessing the disabled access changes of BCA 2011, all other areas are to BCA 2011.

## Documentation Assessed

This report is based on the following Architectural Plans issued by Tanner Architects for this building:

| Description | Drawing No. | Revision | Date |
|---|---|---|---|
| Cover & Location Plan | AR.DA.0001 | P2 | March 2010 |
| Site Plan | AR.DA.0002 | P2 | March 2010 |
| Demolition Basement and Ground Floor Plans | AR.DA.0003 | P2 | March 2010 |
| Basement and Ground Floor Plans | AR.DA.1001 | P1 | March 2010 |
| First and Attic Floor Plans | AR.DA.1002 | P1 | March 2010 |
| Roof Plan | AR.DA.1003 | P1 | March 2010 |
| Elevations | AR.DA.2001 | P1 | March 2010 |
| Sections | AR.DA.2002 | P1 | March 2010 |
| Elevations | AR.DA.2003 | P1 | March 2010 |

# 4. RESPONSE TO HERITAGE COMMENTS

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Sprinklers are not proposed to the building, and should any new fire or smoke doors be proposed then discussion / consultation will occur with the heritage architect to ensure no impact on the heritage nature of the building.
At this stage of the design no fire doors or sprinkler system is proposed.

# 5. BCA UPGRADE ITEMS PROPOSED

1. BCA Clause D1.4 Egress travel distances -

    - Distance to Exit
        - 1st Floor Verandah – the verandah as proposed gives a distance of travel of approx 30m to the first step of the exit, this is required to be within 20m
        - 1st Floor Northern Office wing - maximum 26m to the top step of the exit stair is provided from the office in this far corner

    A fire safety engineer will need to assess the extended distances on this level if this cannot be designed to achieve compliance, design options to achieve compliance include:

    - Use of the existing openable windows as an exit path whenever the verandah is occupied (this will be subject to fire safety engineering as an alternative solution at the CC stage) ; OR
    - The provision of a door out onto the verandah from Room F5 or F6 ( if heritage provision allow); OR
    - Some type of physical fence / restriction on the verandah to restrict access to the southern side of the verandah (no more than 20m travel to a point of choice location) – this can be a low height fence at the same level as the balustrade so as to not reduce the heritage significance of the building; OR
    - A reconfiguration of the area at F14 to enable a distance from the corner of office F12 to the first step being 20m or less; OR
    - Fire Safety Engineers justification for the travel distances for occupants on this verandah

2. BCA Clause D2.16 – it is proposed to reconstruct the original 1st floor balcony balustrading to the first floor verandah. It is proposed for this balustrade to be upgraded as applicable to achieve compliance in regards to height and openings in the balustrade as this is below regulation height, this is to be designed to achieve Heritage and BCA compliance, to ensure that both BCA compliance and heritage retention are achieved, details are to be coordinated at the Construction certificate stage with the heritage architect.
   Should BCA compliance not be able to be achieved, then an alternative solution with an ergonomics consultant is to be investigated to ensure compliance with the performance provisions of the BCA.
   Should this not be able to be obtained, then an amendment to the consent is to be obtained to remove the requirement to achieve compliance with the BCA for these measures.

3. BCA Clause E1.3 Fire Hydrant System – the external fire hydrant system is to be assessed by a Hydraulic Consultant to confirm compliance to current requirements including coverage to the building, or is to be upgraded to achieve current compliance for this building; coverage to

the building is to be assessed to confirm that compliant coverage is provided to the building, and if any works are required to the hydrant system are to be undertaken to ensure compliance is achieved for the building.

4. BCA Clause E1.4 Fire Hose Reel – the Fire hose reel system for the building is to be upgraded to achieve compliance; a hydraulic engineer is to check and confirm compliance for the system, however the following physical relocations will need to occur:
    - Ground Floor – the existing FHR is located more than 4m from an exit – this is to be relocated to be within 4m of a designated exit whilst ensuring coverage is achieved
    - 1st Floor – FHR is in a compliant location
    - Attic level 2nd Floor – A Fire Hose reel is required to be provided to this level, and is required to be within 4m of the top step of the exit stair

5. BCA Clause E2.2 – Smoke Hazard management system – the building is to be provided with a compliant Smoke Detection & Alarm system to AS 1670.1-2004 and also be provided with a Building Occupant Warning system to AS 1670.1-2004.

    This is to be provided in sympathy with the heritage elements of the building, as advised by the heritage architect / consultant, should this result in a non-compliance with the requirements of the BCA or AS 1670.1-2005 then this is to be justified by the fire safety engineer as to the proposed/acceptable locations

6. BCA Clause E2.2 – Smoke Hazard management system – the building's mechanical ventilation system is to be provided with a fire trip link to shut down all air conditioning / mechanical ventilation systems on fire trip from the detection system.

7. AS 3000 Electrical system Compliance- the electrical wiring and system is to be assessed and confirmed as achieving compliance with AS 3000, should this require works to be done this is to be coordinated with the heritage architect to ensure no heritage significant areas are impacted by these works.

8. BCA Clause F2.3 Toilet Numbers – it is proposed by the designers that the following toilet numbers be provided to the building to ensure compliance for the proposed population of the building as advised as the following:

    Class 5 Admin office portion (caters for pop 18)
    - 1 Male WC ,1 urinal and 1 basin
    - 1 Female WC and 1 basin

    Class 9b Function room use (caters for pop of 76)
    - 1 Male WC, 1 urinal and 1 basin
    - 2 Female WC's and 1 basin
    - 1 Disabled unisex accessible facility will also be required.

# 6. BCA NON-COMPLIANCES – NOT PROPOSED TO BE UPGRADED

**Items of Current Non-compliance not proposed to be upgraded by the applicant for consent authority's assessment as they do not relate to Fire or Life Safety of the occupants**

These are all non-compliant items that are not being proposed to be upgraded / addressed by the proposed works and are summarized below, the consent authority is to assess if these items are to be upgraded and a specific condition identifying which items are to be upgraded is requested to be provided with the Development Consent if these below are not agreed to:

1. BCA Clause D3 Disabled Access – due to the age of the building and heritage nature it is not proposed for the building to be fully upgraded to achieve compliance to all of the requirements of this part of the BCA part D3 and AS 1428.1, An Access consultant has been engaged and the building requirements are to be assessed by the consent authority.

2. BCA Part J – Existing parts of the building not being altered by these works are not proposed to be upgraded to comply with this part of the BCA. All new works installed will achieve compliance where possible with Section J such as any new lighting works proposed, but Section J compliance will only occur where possible with the heritage significance taking precedents over this Section of the BCA seeing as though it doesn't relate to fire and life safety.

# 7. BCA NON-COMPLIANCES – FIRE ENGINEERING PROPOSED

Fire Engineering has been proposed to address the following items of BCA Deemed to Satisfy Non-Compliance at the Construction Certificate stage:

1. BCA Clause C1.1 and Specification C1.1 – Fire Resistance Levels – the floor separating the class 9b from the rest of the building is not proposed to be fire separated, this is to be justified by fire safety engineering at the Construction Certificate (CC) stage.

   Should any other building elements to be found by the structural engineer to not achieve compliance with Spec C1.1 of the BCA for any elements, these are also to be assessed by the fire safety engineer at the CC stage of the project

2. BCA Clause E1.4 Fire Hose Reel – the Fire Hose Reel on the attic level 2nd floor will be in a location such that it will need to serve/pass through the proposed smoke sealed doors on this level, this is a non-compliance to be addressed by the fire safety engineer at the Construction Certificate stage of the works

3. BCA Clause E2.2 and E1.3 – Fire Detection Panel and Fire Hydrant location

   Due to Heritage constraints the location of the Fire Panel is proposed to be located at the rear of Graythwaite house - this is to be justified by the Fire safety engineer at the construction certificate stage

4. BCA Clause D1.4 Egress travel distances -
   - Distance to Exit
     - 1st Floor Verandah – the verandah as proposed gives a distance of travel of approx 30m to the first stair of the exit, this is required to be within 20m
     - 1st Floor Northern Office wing - approx 26m to the top step of the exit stair is provided

   A Fire Engineering assessment may permit the use of one of the windows to be used as an exit path as part of a management in use plan, as the windows are open to the floor but only have a head height of approx 1.2-1.5m, and may also be able to justify the extended distance based on the size of the building for this one office.

5. BCA Clause D1.3 Fire Isolated Stairs – The main stair connects three storeys, and as the building is not sprinkler protected nor is proposed to be sprinkler protected, this is a non-compliance, however due to the heritage nature of the building upgrading this stair to achieve compliance as a fire isolated stair is not possible nor feasible.

   As such, it is proposed that this will be assessed and justified by a Fire Engineer at the Construction Certificate stage of the development in conjunction with the heritage architect to ensure that any areas of significance are allowed for in the works.

3. BCA Clause D1.6 Dimensions of Exits / Internal Ceiling Heights- The House building main stair internal **ceiling height** at the Attic level is less than 2m (approx 1.6m) at the top of the stairway, this area is proposed to be utilised as Admin filing area and ancillary uses, and is not proposed to be a day to day use area such as offices etc, as such based on this use and the significant heritage nature of the roof form which restricts the head height in this location it is not proposed to upgrade this area to achieve compliance.

4. BCA Clause C1.1 & Specification C1.1 Table 3 - The **Fire Resistance Levels** ("FRL's") have not been nominated as being proposed to be upgraded to achieve compliance for any existing works, and is not proposed due to the size and nature of the building.

5. BCA Clause D2.21 - A large number of doors in the path of travel to exits contained **round door handles** in lieu of the required downward lever action type. A small number of doors contained non-compliant snib type locks. New doors / works will achieve compliance and existing areas are not proposed to be upgraded as they have heritage significance. Based on the age of the building and heritage considerations it is not proposed to upgrade these for fire safety requirements, the disabled access consultant will need to be consulted regarding disabled access requirements for this door hardware.
6. BCA Clause F3.1 – Re **ceiling heights** see Clause D1.6 above in regards to discussion on this item.

7. BCA Clause C1.10 – The floor, wall and ceiling materials **fire hazard properties** of existing materials are not able to be determined by visual assessment, and due to their age the applicant has not proposed for them to be upgraded / assessed for compliance. (Any new installations apart from patching/repair of existing surfaces/linings will be required to achieve compliance at the CC / OC stage of the works).

8. BCA Clause D2.8 Enclosure of Space beneath Stairs - The existing stair to the building is provided with a **sub floor access** stair, this is under the main egress stair and serves as the subfloor access which is not to be used such that it constitutes a storey, as such it is not proposed for this to be upgraded to a fire door/enclosure as it is a sub floor area.

9. BCA Clause E2.2 – Smoke Hazard management system – the building is to be provided with a compliant Smoke Detection & Alarm system to AS 1670.1-2004 and also be provided with a Building Occupant Warning system to AS 1670.1-2004.

   This is to be provided in sympathy with the heritage elements of the building, as advised by the heritage architect / consultant, should this result in a non-compliance with the requirements of the BCA or AS 1670.1-2005 or AS 1670.4-2005 then this is to be justified by the fire safety engineer in conjunction with the Heritage Architects advice on medium, high, exceptional or significant elements in the building.

Based on my experience those items listed to be address by a fire safety engineers solution are reasonable and are expected to be able to be addressed by a fire safety engineer, however should these solutions not be able to be justified then a Section 96 or Section 77W amendment is understood will be needed for any change of design should the project gain approval and prior to works commencing or construction certification being issued.

# 8. ESSENTIAL FIRE & OTHER SAFETY MEASURES

Below is a list of essential fire safety services that are installed and those that will be required to be installed within the building.

| Fire Safety Measure | Standard | BCA Clause(s) | Existing Fire Safety Measures | Proposed Fire Safety Measures |
|---|---|---|---|---|
| Automatic fail safe devices (fire trip of any card reader or secured doors) | - | D2.21 | ☐ | ☒ |
| Automatic fire detection & alarm systems | AS 1670.1 – 2004 | Spec E2.2a | ☐ | ☒ |
| Emergency lighting | AS 2293.1 – 2005 | E4.2, E4.4 | ☐ | ☒ |
| Building Occupant Warning system | AS 1670.1 – 2004 | - | ☐ | ☒ |
| Exit signs | AS 2293.1 – 2005 | E4.5, NSW E4.6 & E4.8 | ☐ | ☒ |
| Fire hose reel systems | AS 2441 – 2005 | E1.4 | ☒ | ☒ |
| Fire hydrant systems (external) | AS 2419.1 – 2005 | E1.3 | ☒ | ☒ |
| Lightweight construction (fire rated plasterboard) | - | C1.8, Spec C1.8 | ☐ | TBA |
| Mechanical air handling systems & fire trip shutdown | AS 1668.2 – 1991 | Part F4 & E2.2 | ☐ | ☒ |
| Portable fire extinguishers & fire blankets | AS 2444 – 2001 | E1.6 | ☒ | ☒ |
| Smoke doors | - | Spec C3.4 | ☐ | TBA |
| Wall wetting sprinklers & drencher systems | AS 2118.1 | - | ☒ | ☒ |
| Warning and operational signs | - | E3.3 | ☐ | ☒ |
| Other Measures: | | | | |
| Paths of Travel | - | D1.6 | ☐ | ☒ |
| Signage to Subfloor Area “No Storage in this Area” | - | - | ☐ | ☒ |
| Fire Safety Engineers report issued by TBA, dated TBA at CC Stage | - | TBA at CC Stage | ☐ | ☒ |

Note: those items TBA are to be advised at the CC stage when a fire engineer will have been engaged to prepare an alternative solution for these items of non-compliance and may require these additional fire measures in the building

Based on my experience those items listed to be address by a fire safety engineers solution are reasonable and should be able to be addressed by a grade C10 fire safety engineer, however should these solutions not be able to be justified then a Section 96 or Section 77W amendment may be required for any major changes of the design.

# 9. RECOMMENDATIONS

Those measures listed in Section 4 of this report, under the Upgrade Section are to be included in the design of the building, to ensure an appropriate level of fire and life safety is provided for the building.

Those measures listed Section 6 of this report, under the Fire Engineering Section are deemed to be reasonable, and considered to be justifiable through Fire Engineering analysis for a building of this type and size, as such this will need to be undertaken prior to the Construction Certificate stage to ensure compliance is capable of being achieved and is not a requirement of the Development Consent stage as an undertaking to achieve compliance is proposed and it's for the Accredited Certifier and PCA to assess as part of the Construction Certificate for this building.

# Appendix 1

BCA Provisions

The following is a clause-by-clause assessment of the architectural drawings against the deemed-to-satisfy provisions of the BCA 2010.

Notes:

| | |
|---|---|
| ✓ | The building complies with this clause or new works be able to achieve compliance to this clause. |
| **CA** | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| **?** | Further documentation required. |
| **CR** | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| **N/A** | This clause is not applicable to this project. |
| **AS** | Alternative Solution using Performance Requirements proposed to justify this measure. |
| **Noted** | This clause is for information. |

## Section A: General Provisions

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***A3*** | ***Classification of buildings and structures*** | |
| ✓ | | The classification of a building is determined by the purpose for which it is designed, constructed or adapted. | Class 5 & 9b |
| | ***A3.3*** | ***Multiple classification*** | |
| Noted | | Each part must be classified separately:<br>(a) Classified to the major use if not more than 10% of the floor area of the storey.<br>(b) Plant rooms are classified as the same part. | |
| | ***A4*** | ***PART A4 – UNITED BUILDINGS*** | |
| | ***A4.1*** | ***When buildings are united*** | |
| N/A | | Two or more buildings adjoining each other form one united building if they are connected through openings in the walls dividing them and both buildings comply with the requirements of the BCA as though they are a single building. | The adjoining buildings are proposed to be demolished and as such will be more than 6m away from the building, as such are not considered united buildings |

## Section B: Structural Provisions

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***B1.1*** | ***Resistance to actions & Loads*** | |
| | ***B1.2*** | ***Determination of individual actions*** | |
| *CR* | | The building or structure must resist loads determined in accordance with the following:<br>(a) Dead and live load combinations: AS 1170.1<br>(b) Wind loads AS 1170.2<br>(c) Snow loads AS 1170.3<br>(d) Earthquake loads AS 1170.4 | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***B1.3*** | ***Materials and forms of construction*** | |
| *CR* | | The building or structure must resist loads determined in accordance with the following:<br>(a) Dead and live load combinations: AS 1170.1<br>(b) Wind loads AS 1170.2<br>(c) Snow loads AS 1170.3<br>(d) Earthquake loads AS 1170.4 | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***B1.4*** | ***Materials and forms of construction*** | |
| *CR / CA* | | New materials and forms of construction are to be designed to the following Australian Standards as applicable:<br>(a) AS 3700<br>(b) AS 3600<br>(c) AS 4100<br>(d) AS 1288 or AS 2047<br>(e) AS 1562.1<br>(f) AS 1720.1<br>(g) AS 3660.1 | Note – all new installations / works will comply<br><br>All existing glazing and works etc are not proposed to be upgraded due to the heritage nature of the building |

# Section C: Fire Provisions

## Part C1 – Fire Resistance and Stability

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C1.1*** | ***Type of construction*** | |
| ✓ | | Type of Construction required is determined by the Table C1.1 | |
| | ***C.1.2*** | ***Calculation of rise in storeys*** | |
| ✓ | | The rise in storeys is the greatest number of storeys at any part of the external walls of the building above the finished ground next to that part. | The sub floor area is defined as that and is not included as a floor level for the purpose of the BCA assessment – as such the RIS are as follows:<br>A Rise in Storeys of Three (3) is assessed for this building |
| | ***C1.3*** | ***Building of multiple classification*** | |
| *Noted* | | The Type of construction required is determined on the basis that the classification of the top storey applies to all storeys. | |
| | ***C1.4*** | ***Mixed types of construction*** | |
| *Noted* | | Building may be of mixed Types of Construction where it is separated in accordance with C2.7 | |
| | ***C1.5*** | ***Two storey Class 2 or 9c buildings*** | |
| *N/A* | | Class 2 or 3 of two storeys may be Type C construction if each SOU has:<br>1. Access to at least 2 exits; or<br>2. Its own direct access to a road or open space. | |
| | ***C1.6*** | ***Class 4 parts of a building*** | |
| *Noted* | | Class 4 part of a building requires same FRL as that required by a Class 2 in similar circumstances. | |
| | ***C1.7*** | ***Open spectator stands and indoor sports stadium*** | |
| *N/A* | | May be of Type C construction if it contains only 1 tier and is of non-combustible material. | |
| | ***C1.8*** | ***Lightweight construction*** | |
| *CR* | | Lightweight construction may be used if it is in compliance with Specification C1.8. | For any lightweight fire rated plasterboard proposed for the buildings fire ratings as detailed |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C1.10*** | ***Fire hazard properties*** | |
| *CR / CA* | | Materials and assemblies used in the building must comply with the requirements of Specification C1.10. In the case of a sarking material the Flammability Index shall not be more than 5.<br>**House**<br>Floor materials – Critical Radiant Flux of not less than 2.2<br>Wall and Ceiling materials – Either Group 1 or 2 material (**note**: timber finishes may not achieve a group 1 or 2 requirement) | New installations will need to achieve compliance<br>Existing linings are not to be upgraded nor where new linings are installed to patch/repair existing linings as these are related to the heritage finishes of the buildings and are not proposed to be upgraded |
| | ***C1.11*** | ***Performance of external wall in fire*** | |
| *N/A* | | In buildings of up to two storeys, any concrete external walls that could collapse as complete panels to comply with specification C1.11. | |
| | ***C1.12*** | ***Non-combustible materials*** | |
| Noted | | The following materials may be used where non-combustible materials are required:<br>1. Plasterboard.<br>2. Perforated gypsum.<br>3. Fibrous-plaster sheeting to AS 2185.<br>4. Fibre-reinforced cement sheeting.<br>5. Pre-finished metal sheeting.<br>6. Bonded laminated materials. | |

## Part C2 – Compartmentation and Separation

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C2.2*** | ***General floor area limitations*** | |
| ✓ | | Table C2.2 limits the size of fire compartments to:-<br>• Class 5 or 9b<br>Type A, 8,000m$^2$ & 48,000m$^3$<br>Type B, 5,500m$^2$ & 33,000m$^3$<br>Type C, 3,000m$^2$ & 18,000m$^3$<br>See Section 3,4 or 5 of Specification C1.1 for specific fire rating requirements (a brief table of FRL's is included in the appendix for information – detailed requirements in abovementioned section of the BCA) | Buildings are less than the max fire compartment sizes for these classes |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C2.3*** | ***Large isolated buildings*** | |
| *N/A* | | A fire compartment may exceed that specified in Table C2.2. Buildings under of exceeding 18,000m$^2$ in floor area to be provided with specific requirements<br><br>Generally a sprinkler system complying with Specification E1.5 provided with a perimeter vehicular access complying with C2.4 (b) – additional measures may include a smoke exhaust system in accordance with Specification E2.2b or smoke-and-heat vents in accordance with Specification E2.2c. | |
| | ***C2.4*** | ***Requirements for open spaces and vehicular access*** | |
| *N/A* | | Requirements for open spaces and vehicular access capable of supporting emergency vehicles, 6m wide not more than 18m from the building.<br><br>Part a – 18m wide open space without any buildings or obstructions whatsoever, and must also comply with part b of this section. | |
| | ***C2.5*** | ***Class 9a & 9c buildings*** | |
| *N/A* | | Class 9a & 9c Fire Compartmentation and separation requirements | |
| | ***C2.6*** | ***Vertical separation of openings in external walls*** | |
| *N/A* | | Only applicable to a building of Type A Construction, that is not sprinkler-protected. – no requirement is applicable for spandrel separation of a Sprinkler protected building.<br><br>If not Sprinkler protected either 900mm vertical spandrel required, or 1m horizontal projecting spandrel – specific details in this clause of the BCA | None of the buildings are Type A due to the sub floor area being not classified as a storey |
| | ***C2.7*** | ***Separation by fire walls*** | |
| *N/A* | | A part of a building separated by firewall construction may be considered a separate building for the purposes of Parts C, D and E. (Must continue directly from on ground floor slab straight up through the building to top) | |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C2.8*** | ***Separation of classifications in the same storey*** | |
| *N/A* | | If a building has parts of different classifications located alongside one another in the same storey—<br><br>(a) each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; **OR**<br><br>(b) the parts must be separated in that storey by a fire wall having—<br><br>(i) the higher FRL prescribed in Table 3 or 4; or<br><br>(ii) the FRL prescribed in Table 5,<br><br>of Specification C1.1 as applicable, for that element for the Type of construction and the classifications concerned; **OR**<br><br>(c) where one part is a carpark complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a fire wall complying with the appropriate Table. | The building is not proposed to be separated for the different classifications as this is not required by this clause of the BCA.<br><br>Compliance with section a) of this clause of the BCA is proposed, therefore fire wall separation is not required<br><br>As Class 5 and Class 9b require the same FRL's of elements no fire wall separation is required<br><br>Please Note: this Class 9b is not an "Entertainment Venue" as defined by the BCA; as such 1 hour separation is not required for this building.<br><br>Note: Place of Public Entertainment (POPE) is no longer listed in the BCA, this has been replaced by the term Entertainment Venue and narrows the requirements that used to apply to POPE uses. |
| | ***C2.9*** | ***Separation of classifications in different storeys*** | |
| *N/A* | | If parts of different classification are situated one above the other in adjoining storey's they must be separated as follows:<br><br>(a) Type A construction — The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey.<br><br>(b) Type B or C construction — If one of the adjoining parts is of Class 2, 3 or 4, the floor separating the part from the storey below must—<br><br>(i) be a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or<br><br>(ii) have an FRL of at least 30/30/30; or<br><br>(iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal. | Not required – no Class 2, 3 or 4 in this building. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C2.10*** | ***Separation of lift shafts*** | |
| *CR* | | The lift is to be enclosed in a fire-isolated shaft if it connects more than two storeys or three storeys if provided with a sprinkler system. | New lift to the building is to comply in regards to the fire rating of the shaft FRL required to be 120/120/120 (load bearing), -/120/120 (non-load bearing)<br>Door to the lift is to be a 1 hour fire rated lift door |
| | ***C2.11*** | ***Stairs and lift in one shaft*** | |
| *N/A* | | Not to be within the same shaft if either is required to be fire isolated. | |
| | ***C2.12*** | ***Separation of equipment*** | |
| *CA* | | Equipment comprising lift motors and control plant, emergency generators or central smoke control plant; boilers or batteries are required to be separated from the remainder of the building by construction achieving a FRL of 120/120/120. | Should Lift motors and control plant provided, require 120/120/120 fire separation for this part |
| | ***C2.13*** | ***Electricity supply system*** | |
| *N/A* | | A substation located within a building or main switchboard, which sustains emergency equipment, must be separated from the remainder of the building by construction achieving a FRL of not less than 120/120/120. | No Substation or main switchboard that sustains emergency equipment is proposed – as such No requirement. |
| | ***C2.14*** | ***Public corridors in Class 2 & 3 buildings*** | |
| *N/A* | | In a Class 3 building, a public corridor, if more than 40m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Cl. 2 of Spec C2.5. | |

## Part C3 – Protection of Openings

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C3.2*** | ***Protection of opening in external walls*** | |
| **CA** | | Openings in the external walls are to be protected in accordance with C3.4 if:-<br>❑ less than 3m to side or rear boundary<br>❑ less than 6m from the far boundary of a road if not located at or near ground level<br>❑ **less than 6m from another building on the same allotment.** | As the adjacent buildings will be removed or provided such that they are more than 6m away from the existing buildings compliance is achieved<br>If the remaining building stays within 6m then this is an existing situation not proposed to be upgraded as part of these works |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C3.3*** | ***Separation of external walls and associated openings in different fire compartment*** | |
| ✓ | | External walls of a different fire compartment to be separated by a fire wall of not less than FRL 60/60/60 or any openings must be protected in accordance with Clause C3.4 if within the distance set out in Table C3.3. | |
| | ***C3.4*** | ***Acceptable methods of protection*** | |
| *Noted* | | Where exposed to be protected by external or internal drenchers (side of protection specified by relevant clause that calls up protection), fire doors, windows or shutters. | |
| | ***C3.5*** | ***Doorways in fire walls*** | |
| *N/A* | | Doorways in a fire wall which are not part of a horizontal exit, must not exceed ½ the length of the fire wall, and:<br>1. have the FRL required for the fire wall, and<br>2. be self-closing or automatic-closing. | |
| | ***C3.6*** | ***Sliding fire doors*** | |
| *N/A* | | If utilised must fail safe in the closed position, be suitably signposted with an audible alarm, signage and directional arrow to indicate direction to slide door to open when in the closed position. | |
| | ***C3.7*** | ***Doorways in horizontal exits*** | |
| *N/A* | | To be suitably protected by fire doors with FRL of not less than that required for the fire wall, and be self-closing or automatic-closing. And must swing in the direction of travel (this may be both ways if so either two doors or a multi directional swing fire door is required ) | |
| | ***C3.8*** | ***Openings in fire isolated exits*** | |
| *N/A* | | To be automatic magnamatic or self closing -/60/30 fire doors. | |
| | ***C3.9*** | ***Service penetrations in fire isolated exits*** | |
| *N/A* | | Fire exits must not be penetrated by services other than electrical wiring associated with lighting, stair pressurisation or the intercommunication system & hydrant system. | |
| | ***C3.10*** | ***Openings in fire rated lift shafts*** | |
| *CR* | | ❑ Doors to be - /60/ - fire doors to AS1735.11.<br>❑ Lift indicator panels to be backed by - /60/60 construction if exceeding 35,000mm$^2$ in area. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***C3.11*** | ***Bounding Construction; Class 2, 3 & 4 buildings*** | |
| *N/A* | | Doorway to each SOU to be protected;<br>• -/60/30 in Type A construction<br>• Self-closing, tight fitting, solid core door, not less than 35mm thick in Type B or C construction | |
| | ***C3.12*** | ***Openings in floors for services*** | |
| *Noted* | | To be enclosed in a fire rated shaft with a FRL in accordance with Specification C1.1 or protected by Clause C3.15 of BCA | |
| | ***C3.13*** | ***Openings in shafts*** | |
| *Noted* | | Openings in ventilating, pipe, garbage or other service shaft to be protected by:-<br>-/60/30 fire doors / hoppers / access panel. | |
| | ***C3.15*** | ***Openings for service installations*** | |
| *CA/ CR* | | Electrical, plumbing mechanical ventilation shafts etc not to impair the FRL of rated members. | As the floors are not fire rated or separated the services are not proposed to be fire sealed<br>Between attic and ground floor walls and doors may be required to be smoke sealed to ensure no smoke spread to the top level as part of fire engineering (Smoke dampers, smoke seals etc depending on the service penetrating these walls) |

## Specification C1.1 – Fire Resisting Construction

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***4*** | ***Type B Fire Resisting Construction – Graythwaite House*** | |
| *CA/ AS* | ***1*** | ***The building is to be designed to comply with Table 4.***<br>External Loadbearing Walls within 1.5m of the boundary require a FRL of 120/120/120.<br>External Loadbearing Walls within 3m to less than 9m of the boundary require a FRL of 120/30/30.<br>Internal Loadbearing Walls and Columns require an FRL of 120/-/- (see concession under 4.1(g)).<br>Floors below the class 9b portion / function room require a fire protective covering (13mm fire grade plaster), an FRL of 30/30/30, or Resistance to Incipient Spread Ceiling of 60mins | As the building is heritage this will not be upgraded, although the external walls are solid Sandstone and as such are assumed to achieve compliance no upgrading is proposed for the fire ratings of the building<br>The area under the Class 9b function area is sub floor and is not going to be used for storage, as such the underside of the floor is not required to be fire rated<br>All other floors are acceptable as the building is Type B construction.<br>Structural Engineers is to assess fire ratings of the load bearing walls and columns and the like to determine compliance of existing elements, should a non-compliance exist this is to be justified by the fire safety engineer. |
| | ***5*** | ***Type C Fire Resisting Construction*** | |
| *CA* | ***5.1*** | ***The building is to be designed to comply with Table 5.***<br>External Loadbearing Walls within 1.5m of the boundary (or other fire source feature) require a FRL of 90/90/90.<br>External Loadbearing Walls between 1.5m and 3m of the boundary (or other fire source feature) require a FRL of 60/60/60.<br>Fire Walls require an FRL of 90/90/90. | As the building is heritage the building is not proposed to be upgraded to comply. Due to the location of the building compliance is achieved. But for this clause no upgrading is proposed for the fire ratings of the building. |

## Specification C1.10 – Early Fire Hazard Indices

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***4*** | ***Class 2, 3 and 9 Buildings*** | |
| *N/A* | | Further specific provisions relate to POPE for NSW for closed back seats, screens, curtains, blinds or similar decor. | See C1.10/a in report for floor and wall lining requirements for new wall linings |

### Specification C1.10a – Fire Hazard Properties – Floors, Walls and Ceilings

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***4*** | ***Lift cars*** | |
| *CR* | | In a lift car, the floor materials and floor coverings must have a Critical radiant heat flux not less than 2.2 and wall and ceiling linings must be a Group 1 or Group 2 material in accordance with Clause 3(b). | New lift will need to comply with these requirements<br>Note: Timber lining is generally a Group 3 material and would not achieve compliance |

## Section D: Access and Egress

### Part D1 – Provision for Escape

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D1.2*** | ***Number of exits required*** | |
| ✓ | | The number of exits is to be designed to satisfy performance standard DP4 of the BCA.<br>A minimum of one exit is required from all buildings, and<br>Two (2) exits for each storey are required for buildings over 25m, class 9b areas that exceed 50 persons. | Design achieves compliance |
| | ***D1.3*** | ***When fire isolated exits are required*** | |
| *AS* | | Every stair in a building must be fire isolated unless it does not connect or pass through more than 3 consecutive floors in a sprinkler protected building or 2 storeys in a non-sprinkler protected building.<br>Class 9a & 9c buildings require stairs to be fire isolated.<br>Those stairs not requiring fire isolating must discharge at a level of road or open space | See Non-compliances section of the report for details |
| | ***D1.4*** | ***Exit travel distances*** | |
| *AS* | | No point on the floor must be more than 20m to an exit or a point in which travel in different directions to 2 exits is available, in which case, the maximum distance to 1 exit cannot exceed 40m.<br>Class 5 or 6 buildings with only one exit, and opening to road or street may have greater distance of up to 30m to that single exit. | See non-compliances section of the report for details |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| ✓ | | Class 2 and 3 & 4 buildings -<br>(i) The entrance doorway of any sole occupancy unit must be not more than:<br>(A) 6m from an exit or from a point from which travel in different directions to 2 exits is available; or<br>(B) 20m from a single exit serving the storey at the level of egress to a road or open space; and<br>(ii) No point on the floor of a room which is not in a sole occupancy unit must be more than 20m from an exit or from a point at which travel in different directions to 2 exits is available. | |
| | ***D1.5*** | ***Distance between alternative exits*** | |
| *N/A* | | To be no less than 9m or more than 45m in a Class 2, 3, and 9a, or 60m in all other classes, uniformly distributed with access to 2 exits if required and not converge so they become less than 6m apart. | |
| | ***D1.6*** | ***Dimensions of exits and paths of travel*** | |
| *CA* | | (a) height – minimum 2m: doorways 1980mm<br>(b) width 1m minimum<br>(c);(d) Width change based upon populations – generally for populations up to 100 persons require 1m of egress, up to 200 2m and then varies according to use over 200 person per floor / storey.<br>(f) door width minimum 800mm clear opening<br>(g) not to diminish in direction of travel.<br>Note: see also re number of exits for certain uses Clause D1.2 as may require additional exits no matter the population of the storey. | The main stair of the building is existing and has heritage significance – the ceiling heights over the stair however are non-compliant, down to 1.6m in head height at the top level<br>No upgrading is proposed to these exits and paths of travel due to the heritage nature of the building and the impact on the structure that would occur should compliance be imposed.<br>However, the area served by this low head height is proposed to be used as admin filing / ancillary areas and no day to day office duties carried out, as such it is not deemed to be a problem for this pinch point at the top of the stairway of the building |
| | ***D1.7*** | ***Travel by fire isolated stairs*** | |
| *N/A* | | Must provide independent egress and discharge to road or open space or complying covered area. | |
| | ***D1.8*** | ***External stairs or ramps in lieu of fire isolated exits*** | |
| *N/A* | | External stairs or ramps may be used in lieu of a fire-isolated stair or ramp to a building under 25m in effective height. | |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D1.9*** | ***Travel by non fire isolated stairs*** | |
| ✓ | | Travel by Non-Fire Isolated Stairs:-<br>(c) The distance from any point on the floor to a point of egress not to exceed 80m.<br>(e) The stairway not to discharge at a point more than:<br>(i) 20m to an exit<br>(ii) 40m to one of 2 exits. | |
| | ***D1.10*** | ***Discharge from exits*** | |
| ✓ | | An exit must not be blocked nor be capable of being blocked at its point of discharge.<br>Ramp to a grade of 1:8 is required to connect with open space. | |
| | ***D1.11*** | ***Horizontal exits*** | |
| *N/A* | | May be counted as required exits if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartments which has at least one required exit which is not a horizontal exit.<br>Cannot be utilised in some classes or areas of buildings details to be assessed to ensure compliance with specific clause | |
| | ***D1.12*** | ***Non required stairs*** | |
| *CA* | | May connect 2 levels in a non-sprinkler protected building. Within a sprinkler protected building may serve 3 storeys. | The former staff stair (stair 2) and widows' walk stair are heritage and are to be retained, however these are not required for use of the occupants, so are proposed to be retained for heritage purposes only and not for functional use. |
| | ***D1.13*** | ***Number of persons accommodated*** | |
| ✓ | | To be in accordance with Table D1.13 of the BCA or count seats. | Mansion Building – 18 Staff, and 76 Guests for the Function room area |
| | ***D1.16*** | ***Plant rooms and lift motor rooms: Concessions*** | |
| *N/A* | | (a) Where a plant room or lift motor room has a floor area:<br>(i) Not more than 100m$^2$ a ladder may be used in lieu of a stairway.<br>(i) More than 100m$^2$ but less than 200m$^2$ where two or more points of egress are provided a ladder may be used in lieu of a stairway from all but one of those points.<br>(c) A ladder to the plant room is to comply with AS 1657 and the ladder to the lift motor room is to comply with AS 1735.2. | |

## Part D2 – Construction of Exits

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D2.2*** | ***Fire isolated stairs*** | |
| *N/A* | | Must be in a fire resisting shaft and be constructed of non-combustible materials and if there is local failure not cause structural damage or impair the fire resistance of the shaft. | |
| | ***D2.3*** | ***Non fire isolated stairs*** | |
| *CA* | | Non fire isolated stairways must be constructed of either:-<br>(a) reinforced or pre stressed concrete<br>(b) 6mm thick steel<br>(c) 44mm thick timber | New works are to achieve compliance |
| | ***D2.4*** | ***Separation of rising and descending stairs flights*** | |
| *N/A* | | A required fire isolated stair cannot connect above and below ground flights unless separated by fire and smoke separation. | |
| | ***D2.5*** | ***Open access ramps and balconies*** | |
| *N/A* | | Open access ramp or balcony is provided to meet the requirements of smoke hazard management E2.2a, it must;<br>1. have ventilation openings to the outside air; &<br>2. not be enclosed on its open sides above height of 1m. | |
| | ***D2.6*** | ***Smoke lobbies*** | |
| *N/A* | | Smoke lobby required by D1.7 must;<br>1. have a floor area not less than 6sqm; and<br>2. be separated by walls impervious to smoke; and<br>3. be fitted with smoke doors; and<br>4. be pressurised if the exit is required to be. | |
| | ***D2.7*** | ***Installations in exits and paths of travel*** | |
| *CR* | | (b) No openings to ducts conveying hot products of combustion permitted.<br>(c) Gas or fuel services not permitted in required exits.<br>(d) Electric or services equipment not permitted unless in a non-combustible and smoke sealed enclosure. | Any new installations to achieve compliance and any existing EDB 's or the like are to be upgraded to be within non-combustible enclosures suitably smoke sealed. |
| | ***D2.8*** | ***Enclosure of space beneath stairs*** | |
| *CA* | | (a) in a fire stair no cupboards are permitted under the stair<br>(b) the space beneath the non-fire isolated stairs are not to be enclosed unless in 60/60/60 construction with 60/60/30 fire doors. | The existing stair to the building is provided with a sub floor access stair, this is under the main egress stair.<br><br>It is not proposed for this to be upgraded as it is no different to the timber floor which is also not protected. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D2.9*** | ***Width of stairs*** | |
| *Noted* | | When a measurement taken the width is to be measured clear of all obstructions and the stair must extend a minimum 2.0m above nosings. (unless specified elsewhere to require a greater height) | |
| | ***D2.10*** | ***Pedestrian ramps*** | |
| *CR* | | Pedestrian ramp to be installed in accordance with AS 1428.1, and not have a gradient steeper than 1:8, and be finished with a non-slip surface. | New Access ramps are proposed to be provided to achieve compliance for access to the building – Disabled Access consultant is to advise on requirements for this item |
| | ***D2.11*** | ***Fire-isolated passageways*** | |
| *N/A* | | To attain the same FRL as the fire isolated stair | |
| | ***D2.12*** | ***Roof as open space*** | |
| *N/A* | | If an exit discharges to a roof of a building, the roof must;<br>1. have an FRL 120/120/120; &<br>2. not have roof lights or other openings within 3m of the path of travel. | |
| | ***D2.13*** | ***Treads and risers*** | |
| *CA* | | (a) minimum 2 risers / maximum 18 in each flight<br>(b) risers 115mm min 190 mm max - going 250mm min 355mm max - 2R+G 550mm min 700mm max.<br>(c) goings and risers to be constant.<br>(d) risers not to permit 125mm sphere to pass through<br>(e) treads to be non slip<br>(h) no stepped quarter landings | New works/stairs are to achieve compliance |
| | ***D2.14*** | ***Landings*** | |
| ✓ | | Maximum gradient not to exceed 1:50 and be a minimum 750 long measured from the inside edge of the landing. | |
| | ***D2.15*** | ***Thresholds*** | |
| ✓ | | No step or ramp at any point closer to the door than the width of the door leaf.<br>Generally doors opening to outside are able to be provided with a maximum 190mm step or 50mm if Class 9b POPE | |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D2.16*** | ***Balustrades*** | |
| *CA* | | A continuous balustrade or barrier must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, veranda, mezzanine, access bridge or the like and along any side of any access path to a building if it is not bounded by a wall and the level above the floor or ground surface is more than 4m where it is possible to fall through an open window or 1m in any other case.<br><br>**Note**: Frameless glass balustrades are no longer a feasible option to achieve compliance with the BCA – see AS 1288-2006 for details of balustrade to ensure design achieves compliance. | New works will achieve compliance – existing are as per detail in main non-compliance section of the report<br><br>The existing balustrade to the main stair of the building achieves compliance.<br><br>The verandah balustrade is to achieve compliance/ upgrade to achieve compliance |
| | ***D2.17*** | ***Handrails*** | |
| ✓ | | Required along one side and on both sides of stairs over 2m in width, 865mm above nosings and be continuous. | The stairs / steps on level 1 are to be provided with handrails as required to achieve compliance, at least one side for BCA compliance and to both sides if required by the disabled access consultant |
| | ***D2.18*** | ***Fixed platforms, walkways, stairways and ladders*** | |
| *N/A* | | Treads, risers, handrails and balustrades in plant rooms etc must comply with AS 1657 | |
| | ***D2.19*** | ***Doorways and doors*** | |
| *CR* | | Must not be revolving door, roller shutter or tilt door. Can be fitted with a sliding door if it leads directly to open space and can be opened manually under a force of not more than 110N and be fitted with a fail-safe device if the door is power operated. | New works will achieve compliance |
| | ***D2.20*** | ***Swinging doors*** | |
| *CA* | | Must not encroach more than 500mm into the required width of the stair or 100mm when fully open and swing in the direction of travel.<br><br>Note: Class 9b POPE doors and smoke doors must swing in the direction of egress – if multi exit required then the doors must swing in both directions | Main Entry door to the Mansion Building is to be re swung to open outwards as this forms the main exit for the building , the door from the proposed function area is also required to swing outwards<br><br>Should this be an issue from a heritage point of view it is to be justified by a Fire Engineer at the CC stage |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D2.21*** | ***Operation of latch*** | |
| *CR* | | To be located 900mm to 1100mm above the floor and be openable with a single-handed downward action.<br>Fail safe unlock is permitted as long as linked to the base building fire alarm system.<br>Class 9b doors if to be secured must be provided with panic bars only (fail safe option does not comply) | New works to achieve compliance – Heritage latching is to be retained but secured open to enable compliance for the exit doors in the building |
| | ***D2.22*** | ***Re-entry from fire-isolated exits*** | |
| *N/A* | | Every door in a fire stair must not be locked from inside the fire- isolated stairway to prevent re-entry to the storey or room it services for any stair that serves a storey over 25m in height.<br>Specific details of compliance are defined in this clause of the BCA – the doors all must unlock on fire trip, if needed to be locked may be provided with alarm to allow re entry in a non-fire situation | |
| | ***D2.23*** | ***Signs on doors*** | |
| *N/A* | | To fire doors signage required to alert persons that blockage, obstruction or being chocked open is not allowable | |

## Part D3 – Access for People with Disabilities

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***D3.2*** | ***Access to building in general*** | |
| *CA* | | a) From the boundary to main points of entry<br>b) From a disabled car space<br>c) Other buildings on the allotment<br>d) Through the principal public entrance.<br>Access to and within the building must comply with AS 1428.1 and Part D3 of the BCA. | Disabled Access Consultant to provide requirements/comment on compliance requirements |
| | ***D3.3*** | ***Parts to be accessible*** | |
| *Noted* | | a) (i) (A) To sanitary compartment:<br>(B) To areas normally used by occupants (excluding plant and service areas)<br>(iii) Every lift to comply with E3.6. | |
| | ***D3.4*** | ***Concessions*** | |
| *N/A* | | It is not necessary to provide access for people with disabilities to:<br>a) more than 30% of the public space in Class 6 restaurant, café, bar<br>b) any area if access would be inappropriate due to use. | |
| | ***D3.5*** | ***Car parking*** | |
| *N/A* | | Spaces provided as to AS 2890.1<br>Disabled car spaces must be provided within the carpark at the ratio of 1 disabled car space per 50 /100 spaces. | |
| | ***D3.6*** | ***Signage regarding disabled access*** | |
| *CA* | | To be provided at entrance, lifts and sanitary accommodation. | Disabled Access Consultant to provide requirements/comment on compliance requirements |
| | ***D3.7*** | ***Hearing augmentation*** | |
| *N/A* | | Where an inbuilt amplification system other than an EWIS is provided a hearing augmentation system is to be provided in the following locations:-<br>• Conference room with a floor area greater than 100m$^2$,<br>• Judicatory room,<br>• Auditorium in a Class 9b building,<br>• Ticket office, reception area where the public is screened from the service provider. | No inbuilt hearing augmentation proposed |
| | ***D3.8*** | ***Tactile indicators*** | |
| *CR* | | Required to public stairs and ramps in accordance with AS 1428.4. | Disabled Access Consultant to provide requirements/comment on compliance requirements |

# Section E: Services and Equipment

## Part E1 – Fire Fighting Equipment

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***E1.3*** | ***Hydrants*** | |
| *CR* | | a) System to be provided to serve whole building:-<br>(i) Floor area exceeds 500m$^2$<br>b) (i) Installed to AS 2419.1-2005<br>(iii) Pump set to AS 2419.1. | To be upgraded to achieve compliance for the building – Hydraulic Engineer to ensure compliance at CC stage |
| | ***E1.4*** | ***Hose reels*** | |
| *CR* | | a) System to be provided to serve whole building:-<br>(i) Where hydrants installed internally or to serve any fire compartment greater than 500m$^2$:<br>b) (i) Installed to AS 2441-2005<br>(iii) Hose to reach every part<br>(iv) (A) Located externally or,<br>(B) Within 4m of exit or,<br>(C) Adjacent to hydrant (not within fire isolated exit). | To be upgraded to achieve compliance for the building – Hydraulic Engineer to ensure compliance at CC stage<br>Will involve new FHR installations and relocation of existing on ground floor of building to comply (within 4m of exit door to outside) |
| | ***E1.5*** | ***Sprinklers*** | |
| *N/R* | | System may be required to be provided to serve the entire building to AS 2118.1 and Spec E1.5 as applicable, see Table E1.5 for details when required | |
| | ***E1.6*** | ***Portable fire extinguishers*** | |
| *CR* | | To be installed to Table E1.6 and AS 2444. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E1.8*** | ***Fire control centres*** | |
| *N/A* | | A fire control centre facility is required for a building that exceeds 18,000m$^2$ in total floor space or where the building exceeds 25m effective height.<br>A Building that exceeds 50m in height is required to be provided with a dedicated fire control room that complies with Spec E1.8 | |

## Part E2 – Smoke Hazard Management

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***E2.2*** | ***General requirements*** | |
| *CR* | ***E2.2a*** | Automatic smoke detection and alarm system to Spec E2.2a and AS 1670.1-2004 | To be installed / upgraded to achieve current compliance |
| *CR* | ***E2.2b*** | All Class 9b Buildings are required to be provided with automatic shutdown of any mechanical ventilation or air conditioning systems on fire trip. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E2.3*** | ***Provision for special hazards*** | |
| *N/A* | | Additional smoke hazard management measures may be necessary due to the:<br>a) Special characteristics of the building | |

## Part E3 – Lift Installations

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***E3.2*** | ***Stretcher facility in lifts*** | |
| *N/A* | | (a) Must be provided with:<br>(i) at least 1 emergency lift required by E3.4<br>(ii) where emergency lift is not required, in at least 1 passenger lift in buildings over 12m.<br>(b) Not less than 600mm wide and 2,000mm long x 1,400mm height. | |
| | ***E3.3*** | ***Warning against use of lift in fire*** | |
| *CR* | | Warning signs are required at each lift landing located near every call button in accordance with Figure E3.3. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E3.4*** | ***Emergency lifts*** | |
| *N/A* | | Required to buildings over 25m in effective height, complying with AS 1735.2. | |
| | ***E3.6*** | ***Facilities for people with disabilities*** | |
| *CR* | | Where required by D3.3 (a) every lift must be installed to meet requirements of AS 1735.2 and AS 1735.12. | Disabled Access Consultant to provide requirements/comment on compliance requirements |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***E3.7*** | ***Fire service controls*** | |
| *CR* | | All passenger lift cars require fire service controls in accordance with AS 1735.2 | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |

## Part E4 – Emergency Lighting, Exit and Warning Systems

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***E4.2*** | ***Emergency lighting*** | |
| *CR* | | Required in every path of travel to an exit and any room having a floor area more than 100m$^2$ that does not open to a corridor or space with emergency lighting and any room having a floor area in excess of 300m$^2$ required in every required non fire isolated stair.<br>Emergency signage to be installed to AS 2293.1 | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E4.3*** | ***Measurement of distance*** | |
| *CR* | | Distances other than vertical rise must be measured along the shortest path of travel whether by straight lines, curves or a combination of both. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E4.4*** | ***Design and operation of exit signs*** | |
| *CR* | | Every required exit sign must comply with AS 2293.1 | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E4.5*** | ***Exit signage*** | |
| *CR* | | Required above egress doors and doors from an enclosed stair to open space. Directorial signs required to designate paths of travel.<br>Exit signage to be installed to AS 2293.1 | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***E4.6*** | ***Direction signs*** | |
| *CR* | | Where an exit is not apparent, exit signs with directional arrows are required.<br>Class 9b POPE must have exit signs external to the building to show the way to the road if not apparent when in the open space. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E4.7*** | ***Class 2, 3 and 4 parts: Exemptions*** | |
| *Noted* | | E4.5 does not apply to-<br>1. Class 2 building if the word "EXIT" is placed on the side of door remote from an exit,<br>2. An entrance door of a SOU in Class 2, 3 or 4. | |
| | ***E4.8*** | ***Design and operation of exit signs*** | |
| *CR* | | Every required exit sign must -<br>(a) Comply with AS 2293.1; and<br>(b) Be clearly visible at all times when the building is occupied. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***E4.9*** | ***Sound systems and intercom systems for emergency purposes*** | |
| *N/A* | | Sound systems and intercom systems for emergency purposes required to comply with AS 1670.4-2004;<br>1. Class 9b used as a school with RIS of more than 3, or public Hall/POPE with floor area over 1000m2 or RIS of more than 2. | The Class 9b function area is less than 1000m2 so not applicable for the building<br>BOWS is required by AS 1670.1-2004 for the Building |

# Section F: Health and Amenity

## Part F1 – General

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***F1.1*** | ***Stormwater Drainage*** | |
| *CR* | | Stormwater drainage must comply to AS 3500.3.2 | New works are to achieve compliance |
| | ***F1.5*** | ***Roof Covering*** | |
| *CA* | | Roof covering must comply with required Australian Standard. | New works are to achieve compliance<br>There are some issues with the existing building, and due to the heritage nature of the building the works are to be upgraded /refurbished to achieve the most compliant outcome, however full compliance may not be achieved with this clause or to the current Australian standards |
| | ***F1.6*** | ***Sarking*** | |
| *CR* | | Sarking used for weather proofing of roofs must comply with AS/NZS 4200. | New works are to achieve compliance |
| | ***F1.7*** | ***Water Proofing of Wet Areas in Buildings*** | |
| *CR* | | Water proofing of wet areas within a building to comply with AS 3740. | New works are to achieve compliance |
| | ***F1.9*** | ***Damp-proofing*** | |
| *CR* | | Damp-proofing where required to be installed in accordance with AS/NZS 2904 or AS 3660.1 | New works are to achieve compliance<br>There are some issues with the existing building, and due to the heritage nature of the building the works are to be upgraded to achieve the most compliant outcome, however full compliance may not be achieved to these requirements |
| | ***F1.10*** | ***Damp-proofing of Floors on the Ground*** | |
| *CR* | | Damp-proofing where required to be installed in accordance with AS 2870 | New works are to achieve compliance<br>There are some issues with the existing building, and due to the heritage nature of the building the works are to be upgraded to achieve the most compliant outcome, however full compliance may not be achieved. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***F1.11*** | ***Provision of Floor Wastes*** | |
| *CR* | | In a Class 2, 3 or 4 part of a building, the floor of each bathroom and laundry located at any level above a sole-occupancy unit or public space must be graded to permit drainage to a floor waste. | New works are to achieve compliance<br>There are some issues with the existing building, and due to the heritage nature of the building the works are to be upgraded to achieve the most compliant outcome, however full compliance may not be achieved |
| | ***F1.12*** | ***Sub-floor Ventilation*** | |
| *CR* | | The sub-floor space between a suspended floor of a building and the ground must be in accordance with the requirements of this clause. | New works are to achieve compliance<br>There are some issues with the existing building, and due to the heritage nature of the building the works are to be upgraded to achieve the most compliant outcome, however full compliance may not be achieved |
| | ***F1.13*** | ***Glazed assemblies*** | |
| *CR* | | Glazed assemblies in an external wall to comply with AS 2047 requirements for resistance to water penetration | New works are to achieve compliance |

## Part F2 – Sanitary and Other Facilities

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***F2.1/3*** | ***Sanitary facilities in Class 3-9 buildings*** | |
| | | The number of sanitary facilities must be based upon the number of person accommodated calculated in accordance with D1.13<br>See Table F2.3 for details of number of toilets, washbasins and Urinals required. | Class 5 Admin office portion (caters for pop 18)<br>1 Male WC ,1 urinal and 1 basin<br>1 Female WC and 1 basin<br><br>Class 9b Function room use (caters for pop of 76)<br>1 Male WC, 1 urinal and 1 basin<br>2 Female WC's and 1 basin<br>1 Disabled unisex accessible facility will also be required. |
| | ***F2.4*** | ***Facilities for persons with disabilities*** | |
| *CR* | | One wheelchair accessible disabled facility is required within the building. Layout of each facility must comply with AS 1428.1.<br>If more than one facility proposed they must be alternative layouts for left or right handed usage.<br>Doors to disabled toilets are required to be provided with Lift off hinges to the doors irrespective of size, and must be provided with a shelf | 1 Unisex Disabled Facility in the Building will achieve compliance – details of location and compliance are to be provided at the CC stage |
| | ***F2.5*** | ***Construction of sanitary compartments*** | |
| *CR* | | Where clear space between closet pan and doorway is less than 1.2m, doors must open outwards, slide or be readily removable from outside.<br>Doors to disabled toilets are required to be provided with Lift off hinges to the doors irrespective of distance between pan and doorway | New works are to achieve compliance |

## Part F3 – Room Sizes

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***F3.1*** | ***Height of Rooms*** | |
| *CA* | | Room heights to be a minimum of 2.4m and 2.1m in corridors.<br>Class 9b POPE requires ceiling heights of 2.7m if more than 100 persons in the storey or area | See Non-compliances main section of the report |

## Part F4 – Provision of Natural Light

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***F4.1*** | ***Provision of Natural Light*** | |
| *N/A* | | Class 2 buildings and Class 4 parts – to all habitable rooms. | |
| | ***F4.4*** | ***Artificial Lighting*** | |
| *CR* | | Required to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress.<br>Artificial lighting system is to comply with AS 1680.0<br>**Note**: See also Section J for details of energy efficiency of lighting required. | Design statement (or other means) required from appropriate persons that the new works will comply with this clause at the design stage & also certified on completion of the project. |
| | ***F4.5*** | ***Ventilation of Rooms*** | |
| *CR* | | A mechanical ventilation or air conditioning system complying with AS 1668.2 is required.<br>**Note**: See also Section J for details of energy efficiency of Ventilation / Mechanical Ventilation/Air-conditioning required. | To be advised by the mechanical consultant for compliance at the CC stage |
| | ***F4.11*** | ***Car Parks*** | |
| *N/A* | | Every storey of a car park, except an open deck car park, must have a system of ventilation complying with AS/NZS 1668.1 and AS/NZS 1668.2. | |

### Part F5 – Sound Transmission and Insulation – Residential Facilities

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***F5.3*** | ***Sound Insulation of floors between units*** | |
| *N/A* | | A floor separating sole occupancy units must have an $R_W$ (sound reduction index) not less than 45. | |
| | ***F5.4*** | ***Sound Insulation of walls between units*** | |
| *N/A* | | A wall must have an $R_W$ not less than 45 if it separates:<br>(a) sole occupancy units; or<br>(b) a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, hallway or the like. | |
| | ***F5.5*** | ***Walls between a bathroom, sanitary compartment, laundry or kitchen and a habitable room in adjoining unit*** | |
| *N/A* | | Walls must have:<br>(i) an $R_W$ of not less than 50; and<br>(ii) provide a satisfactory level of insulation against impact sound; and<br>(iii) not incorporate a duct which reduces the $R_W$ of the wall to less than 50. | |

## Section G: Ancillary Provisions

### Part G1 – Minor Structures and Components

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***NSW G1.101*** | ***Provision for Cleaning of Windows*** | |
| *N/A* | | Provision is to be made for the cleaning of windows either within the building or to the OH& S Act 2000 for any windows three (3) or more above the ground. | |

## Section H: Special Use Buildings

### Part NSW H101 – Place of Public Entertainment

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***NSW H101.2*** | ***Fire Separation*** | |
| *N/A* | | The "**Entertainment Venue**" is required to be separated from the remainder of the building by construction that achieves an FLR of not less than 60/60/60, and any doors in the separating construction must achieve an Fire rating of -/60/30<br>"**Entertainment Venue**" is defined as a building used as a cinema, theatre or concert hall or an indoor sports stadium | It has been assumed that the function centre will not be provided with a Dance floor or Live music shows as a predominant use and as such the Entertainment Venue requirements of the NSW BCA part H have not been applied in this assessment |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***NSW H101*** | ***Stage Size*** | |
| *N/A* | | If the stage or performance areas in any of the POPE places / rooms exceed 50m2 in floor area then automatic smoke exhaust would be required directly over the stage area in order to achieve compliance | |
| | ***NSW H101.16*** | ***Storerooms*** | |
| *N/A* | | Storerooms must be separated from other parts of the building by fire rating of not less than 60/60/60 with doors self closing and achieving -/60/30 | |
| | ***NSW H101.19*** | ***Electric Mains Installation*** | |
| *N/A* | | The Switchboard containing the main isolation switch must be located in a position that is readily accessible to authorised persons and the fire brigade, and is required to be enclosed in construction achieving an FLR of 60/60/60 | |
| | ***NSW H101.19.2.3*** | ***Circuit Protection & Separate Sub-mains*** | |
| *N/A* | | Protection of the final sub circuit originating at a switch board or DB must be by means of a circuit breaker<br>Where a place of public entertainment (POPE) has its main supply in common with that of another part of the building, the POPE must be served by its one and independent sub-main, each such sub main must be protected against fire by protection that achieves protection for 2 hours fire protection | |
| | ***NSW H101.20*** | ***Lighting Switches / controls*** | |
| *N/A* | | Where during normal use the lighting is dimmed or switched off there must be an override switch installed in the theatre area that is accessible by the management/staff to switch on all of the general lighting in the theatre is required | |

# Section I: Maintenance

## Part I1 – Equipment and Safety Installations

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***NSW I1.1*** | ***Essential Services Measures*** | |
| *Noted* | | Essential fire or other safety measures must be maintained and certified on an ongoing basis in accordance with the provisions of the Environmental Planning & Assessment Regulation 2000. | |

# Section J: Energy Efficiency

## Part J1 to J8 – Building Fabric

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J1.1*** | ***Application of Part*** | |
| *CA* | | This part apply to building elements forming an envelope of a Class 2 to 9 building other than –<br><br>Class 7, 8 or 9b building that does not have a conditioned space or an atrium that is separated by an envelope. | New works are to achieve compliance<br><br>There are numerous non-compliances with the existing building, and due to the heritage nature of the building the works are to be upgraded to achieve the most compliant outcome, however full compliance may not be achieved – see compliance section at front of the report<br><br>Section J will be behind Heritage considerations and it's expected that the Section J upgrading will be limited or non-existing in this building |
| | ***J1.2*** | ***Thermal Construction General*** | |
| | | Where required, *insulation* must comply with AS/NZS 4859.1 and be installed so that it:<br><br>• Abuts or overlaps adjoining insulation and forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that contribute to the thermal barrier; | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| | | Where required, *reflective insulation* must be installed:<br><br>• With the required air space to achieve the R-Value between the reflective side and the cladding. Closely fitted against penetrations, door or window openings and supported by framing members. Each sheet overlapped not less than 50mm or taped together; | |
| | | Where required, *bulk insulation* must be installed:<br><br>• Maintain its thickness, other than where it crosses roof batten, water pipes, electrical cabling and the like; and in ceiling where there is no bulk insulation or reflective insulation in the wall, overlaps by 50mm | |
| | ***J1.3*** | ***Roof and Ceiling Construction*** | |
| | | A roof or ceiling in Climate Zone 5 is to achieve a Total R-Value in the UPWARD direction of heat flow of not less than:<br><br>• 3.2 – for a roof or ceiling generally; | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J1.4*** | ***Roof Lights*** | |
| | | Roof lights that form part of the envelope of a Class 5, 6, 7, 8 or 9 building must satisfy:<br>(a) If the area of the roof light is between 1.5%-10% of the floor area of the room they must comply with **Table J1.4.**<br>(b) roof light may exceed 10% of the floor area of the room, where -<br>compliance with the natural lighting requirements of Part F4 can only be achieved by the roof light; and the transparent and translucent elements, achieve:<br>- an SHGC not more than 0.25; and<br>- total U-Value of not more than 1.3. | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| | ***J1.5*** | ***Walls*** | |
| *CA* | | External walls within Climate Zone 5 achieve:<br>• A Total R-Value of 2.8; or<br>• A surface density of not less than 220kg/$m^2$ | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| | ***J1.6*** | ***Floors*** | |
| *CA* | | A suspended floor that is part of a buildings envelope to comply with Specification J1.6 | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

## Part J2 – External Glazing

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J2.1*** | ***Application of Part*** | |
| *CA* | | This part of the BCA does not apply to a Class 7, 8 or 9b building that does not have a conditioned space. | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J2.2*** | ***Applicable glazing provisions*** | |
| *CA* | | Glazing in a Class 5, 7, 8, 9a and 9b building must be designed and installed in accordance with Clause J2.4 of the BCA. | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| | ***J2.4*** | ***Glazing*** | |
| *CA* | | (a) the glazing in each storey of the building facing each orientation must be assessed separately in accordance with (b) and (c);<br>Refer to Glazing Calculator by ABCB to assess compliance with Clause J2.4 (Method 2) of the BCA. | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

## Part J3 – Building Sealing

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J3.1*** | ***Application of Part*** | |
| *CA* | | Applies to elements forming the envelope of a class 2-9 building (doors, windows, walls, roof/ceilings etc).<br>Except for buildings in climate 1,2,3 or 5 where the only means of cooling is by an evaporative cooler or<br>A permanent building ventilation opening for safe operation of a gas appliance<br>A class 6, 7, 8 or 9b building that does not have a conditioned space<br>A building or space where the mechanical ventilation provides sufficient pressurisation to prevent infiltration | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| | ***J3.2,3,5*** | ***Chimneys, Roof lights, exhaust fans*** | |
| *CA* | | Chimneys or flues must be provided with a damper or flap that can be closed to seals the chimney or flu when not in use<br>Roof lights must be sealed by a diffuser or shutter system unless required as a building window for light<br>Miscellaneous Exhaust fans must be provided with a damper that self closes when the fan is not in use | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J3.4*** | ***External Windows and Doors*** | |
| *CA* | | A seal to restrict air infiltration must be fitted to each edge (top, bottom and sides) of an external door or window or the like when serving a conditioned space or for habitable rooms in climate zones 4,6,7 & 8.<br>Excluding:<br>- Windows that comply with AS 2047<br>- fire doors<br>Roller shutter doors or security doors installed for out of hours security only<br>External louver door, windows or other such openings | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

## Part J5 – Air Condition & Ventilation Systems

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***Part J5*** | ***Air Con and Mech Vent system design*** | |
| *CA* | | Ductwork for supply and return air must be insulated<br>Design of the system must achieve com0pliance with all parts of Part J5 of the BCA | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

## Part J6 – Artificial Lighting & Power

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***Part J6.1*** | ***Application of part*** | |
| *CA* | | This part of the BCA does not apply to a Class 2 or 4 buildings or parts within the Sole occupancy unit/s. | The building does not comply with this clause and is not proposed to be upgraded unless a specific DA condition is imposed to require it to be upgraded. |
| | ***J6.2*** | ***Interior artificial lighting*** | |
| *CA* | | The Design Illumination power load must not exceed the sum of the allowances achieved by multiplying the area of the space by the maximum illumination power density in Table J6.2b | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J6.5*** | ***Artificial lighting around the perimeter of a building*** | |
| *CA* | | Exterior lighting must be controlled by either a daylight sensor or a time switch in accordance with Spec J6 to turn off when natural light is effective or during daylight hours and Total perimeter lighting load that exceeds 100w must –<br>- have an average light source efficacy of not less than 60 lumens/W or<br>- be controlled by a motion detector in accordance with Spec J6 | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |
| | ***J6.6*** | ***Boiling water and chilled water units*** | |
| *CA* | | Power supply to these units (Billy units) must be controlled by a time switch that complies with Spec J6 | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

## Part J7 – Hot Water Supply

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| | ***J7.2*** | ***Hot Water Supply*** | |
| *CA* | | Hot water supply for food preparation and sanitary purposes must comply with Section 8 of AS/NZS 3500.4<br>Solar systems in climate zones 1,2 and 3 do not need to comply with this requirement | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

## Part J8 – Access for Maintenance

| Icon | Clause | Reference | Comment |
|---|---|---|---|
| *CA* | | Access for Maintenance must be provided to all services and components, including<br>• Time switches and motion detectors<br>• Room temp thermostats<br>• Plant thermostats such as on boilers or refridge units<br>• Outside air dampers<br>• Reflectors, lens and diffusers of light fittings<br>• Heat transfer equipment<br>• Adjustable or motorised shading devices | The building does not comply with this clause and is not proposed to be upgraded unless a specific condition of consent is imposed to require it to be upgraded. |

# Appendix 2

Fire Resistance Provisions

## Table 4 – Type B Construction: FRL of Building Elements

| **Building Element** | **Class of Building – FRL** (in minutes) **Structural Adequacy/Integrity/Insulation** | | | |
|---|---|---|---|---|
| | **Class 2, 3 or 4 part** | **Class 5, 7a or 9** | **Class 6** | **Class 7b or 8** |
| ***External Wall*** (including any column and other building element incorporated therein) or other external building element, where the distance from and fire-source feature to which it is exposed is: | | | | |
| *For Loadbearing Parts:* | | | | |
| Less than 1.5m | 90/ 90/ 90 | 120/120/120 | 180/180/180 | 240/240/240 |
| 1.5m to less than 3m | 90/ 60/ 30 | 120/ 90/ 60 | 180/120/ 90 | 240/180/120 |
| 3m to less than 9m | 90/ 30/ 30 | 120/ 30/ 30 | 180/ 90/ 60 | 240/ 90/ 60 |
| 9m to less than 18m | 90/ 30/ - | 120/ 30/ - | 180/ 60/ - | 240/ 60/ - |
| 18m or more | -/-/- | -/-/- | -/-/- | -/-/- |
| *For Non-Loadbearing Parts:* | | | | |
| less than 1.5m | - / 90/ 90 | - /120/120 | - /180/180 | - /240/240 |
| 1.5m to less than 3m | - / 60/ 30 | - / 90/ 60 | - /120/ 90 | - /180/120 |
| 3m or more | - / - / - | - / - / - | - / - / - | - / - / - |
| ***Common Walls and Fire Walls***: | 90/ 90/ 90 | 120/120/120 | 180/180/180 | 240/240/240 |
| ***Internal Walls*** – Fire Resisting lift and stair shafts: | | | | |
| Loadbearing | 90/ 90/ 90 | 120/120/120 | 180/120/120 | 240/120/120 |
| Non-Loadbearing | - / 90/ 90 | - /120/120 | - /120/120 | - /120/120 |
| Bounding ***Public Corridors*** public lobbies and the like: | | | | |
| Loadbearing | 60/ 60/ 60 | 120/ - / - | 180/ - / - | 240/ - / - |
| Non-Loadbearing | - / 60 / 60 | - / - / - | - / - / - | - / - / - |
| Between or Bounding ***Sole Occupancy Units***: | | | | |
| Loadbearing | 60/ 60/ 60 | 120/ - / - | 180/ - / - | 240/ - / - |
| Non-Loadbearing | - / 60 / 60 | - / - / - | - / - / - | - / - / - |
| ***Other Loadbearing Internal Walls, Internal Beams, Trusses and Columns***: | | | | |
| | 60 / - / - | 120/ - / - | 180/ - / - | 240/ - / - |

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