METRO BUILDING CONSULTANCY

PROPOSED SENIORS HOUSING DEVELOPMENT STAGE 3 COPPERFIELD DRIVE, ROSEMEADOW NSW 2560

BUILDING CODE OF AUSTRALIA 2019 AMENDMENT 1 REPORT APRIL 2021

Report prepared for	Land & Housing Corporation Level 4, 10 Valentine Avenue Parramatta NSW 2150 Attention: Cameron Yeates
Report prepared by	Metro Building Consultancy Suite 102, 12 Mount Street, North Sydney NSW 2060 Consultant: Sean Moore
Report reference	20200R03
Job number	20200
Date	14th April 2021

METRO BUILDING CONSULTANCY

CONTENTS

DOCUMENT ACCEPTANCE

Company	Name	Signed	Date
Metro Building Consultancy	Sean Moore		14/04/2021

REVISION HISTORY

Description	Prepared by	Revision No.	Date
BCA Report	Annika Green	R03	14/04/2021
BCA Report	Annika Green	R02	09/04/2021
BCA Report	Annika Green	R01	22/02/2021

1.0 Fire Engineered Performance Solutions

The version of the BCA applicable to the development is the version that is in place at the time of application for Construction Certificate. BCA 2019 Amendment 1 applies to the proposed works.

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant performance requirements of the BCA. As the design progresses the Fire Engineer will need to schedule the specifics of these non-compliances. The below table addresses the following non-compliances that are proposed to be addressed as a fire engineered performance solution to be included in the Fire Engineering Report (FER).

DTS Clause	Description of Non-Compliance	Performance Requirement	Status
D1.4	**Exit Travel Distances** Travel to an exit from apartment entry doors exceeds 6m across all three levels (worst case 9m to an exit)	DP4 & EP2.2	To be included in the FER
D2.12	**Roof as Open Space** Openings within 3m of the path of travel of people using the exit to reach road or open space	DP4 & DP6	likely will require inclusion in the fire engineering report
E1.3	**Fire Hydrants** 1. Booster location unlikely to be more than 10m from the building 2. Hydrant pump room does not open to road or open space and does not open into a fire-isolated stair.	EP1.3	To be included in the FER unless design is amended

144 Referral of certain plans and specifications to New South Wales Fire Brigades

(1) This clause applies to the following buildings, or parts of buildings, that are the subject of an application for erection, rebuilding, alteration, enlargement or extension—

(b) a building (other than a class 9a building) that is proposed to have a fire compartment with a total floor area of more than 2,000 square metres, where the plans and specifications for the work provide for a performance solution to meet the performance requirements contained in any one or more of the Category 2 fire safety provisions,

(d) a class 2, class 3 or class 9 building of 2 or more storeys, or the class 4 part of any class 9 building of 2 or more storeys, where—

(i) the plans and specifications for the work provide for a performance solution to meet performance requirement CP2 in Volume 1 of the *Building Code of Australia*, to the extent that it relates to external combustible cladding, and

(ii) the performance solution does not apply the verification method CV3 in Volume 1 of the *Building Code of Australia* in its entirety,

Category 2 fire safety provision means the following provisions of the *Building Code of Australia*, namely, CP9 (perimeter access), EP1.3 (fire hydrants), EP1.4 (sprinklers), EP1.6 (fire control centres & rooms), EP2.2 (smoke hazard management) and EP3.2 (emergency lifts) in Volume One of that Code.

2.0 Introduction and Documentation

Introduction

LAHC have requested Building Code of Australia advice in relation to the Rosemeadow Seniors Housing development of new residential apartments located at Copperfield Drive, Rosemeadow. The proposed development comprises of the following:

- Underground basement carpark and storage area
- 3 levels of residential accommodation with associated soft and hard landscaping

The information submitted to date has been reviewed for compliance with the deemed-to-satisfy provisions of Section C, D, E and F excluding Part F5 sound transmission and insulation, Part G and Part H of the Building Code of Australia 2019 Amendment 1.

The methodology is principally a desktop review of the drawings provided as listed in Appendix A. This report is for the exclusive use of LAHC and cannot be used for any other purpose without the prior permission of Metro Building Consultancy. The report is only valid in its entire form.

Application of Building Code of Australia 2019 Amendment 1

Clause 98 (3) 'Compliance with Building Code of Australia and insurance requirements under the Home Building Act 1989' of the Environmental Planning and Assessment Regulation 2000 states:

In this clause, a reference to the Building Code of Australia is a reference to that Code as in force on the date the application is made for the relevant:
(a) development consent, in the case of a temporary structure that is an entertainment venue, or
(b) construction certificate, in every other case.

This report has been based on the adoption of BCA 2019 Amendment 1. Further reviews of the proposed drawings will be carried out prior to the Construction Certificate. Applicant to note that the CC Application date may affect the BCA year of adoption.

3.0 Use and class of building

The proposed buildings, as taken from the drawings provided, has the following characteristics:

Storey	Use	Classification
Basement	Carparking and storage	7a and 7b
Ground Level	Apartments, ancillary bin store rooms, hard and soft landscaping	2
Level 1 - 2	Apartments	2

Rise in Storeys and Effective Height of the proposed building

The building has a Rise in Storeys of 3. The effective height is less than 12m (approx. 6.20m)

4.0 Construction and fire resistance ratings

The proposed building has a classification of 2 and 7a with a rise in storeys of 3 is required to comply with the Building Code of Australia's Type A construction requirements as seen in Appendix B. Note, the FRL's specified in Appendix B for an external column also apply to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a fire source feature.

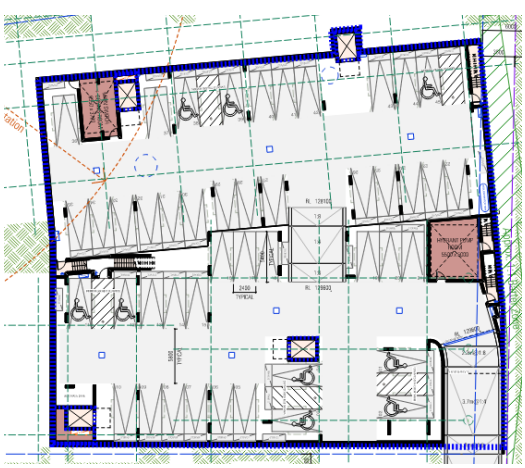
Exposure to a fire source feature

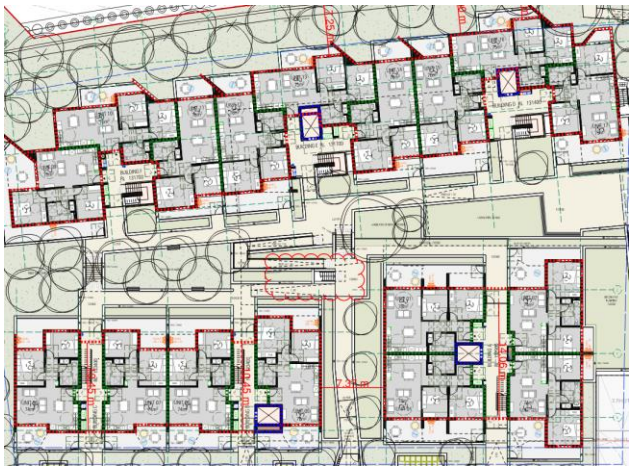
A part of a building element is exposed to a fire-source feature if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that has an FRL of not less than 30/–/–.

Fire-source feature means—
(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.

The loadbearing parts of the external wall are required to be provided with the fire resistance level in the table in Appendix B. these are as specified as below:

- Basement level – External walls to have a FRL of 120/60/30 shown in blue below
- Ground Level to Level 2 – External walls to have a FRL of 90/60/30 shown in red below





Fire protection for a support of another part

(a) Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part, subject to (b), must –
  (i) Have an FRL not less than that required by other provisions of this specification; and
  (ii) If located within the same compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required –
    (A) For the supporting part itself; and
    (B) The part it supports; and
  (iii) Be non-combustible –
    (A) If required by other provisions of this Specification; or
    (B) If the part it supports is required to be non-combustible.

(b) The following building elements need not comply with (a)(ii) and (a)(iii)(B):
  (i) An element providing lateral support to an external wall complying with Clause 5.1(b) or C1.11
  (ii) An element providing support within a carpark and complying with Clause 3.9, 4.2 or 5.2
  (iii) A roof providing lateral support in a building –
    (A) Of Type A construction if it complies with Clause 3.5(a), (b) or (d); and
  (iv) A column providing lateral support to a wall where the column complies with Clause 2.5(a) and (b)
  (v) An element providing lateral support to a fire wall or fire-resisting wall, provided the wall is supported on both sides and failure of the element on one side does not affect the fire performance of the wall.

Compliance readily achievable. Structural Engineer to note the abovementioned requirements and ensure the overall design complies.

Lintels

A lintel must have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and –

(a) It spans an opening in
  (i) A wall of a building containing only one storey; or
  (ii) A non-loadbearing wall of a Class 2 or 3 building; or

(b) It spans an opening in masonry which is not more than 150mm thick and –
  (i) Not more than 3m wide if the masonry is non-loadbearing; or
  (ii) Not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall

Compliance achievable – Structural Engineer to note the requirements where applicable.

General concessions

Structures on roofs – a non-combustible structure situated on a roof need not comply with the other provisions of this Specification if it only contains –

(i) Lift motor equipment; or

(ii) One or more of the following –

(A) Hot water or other water tanks

(B) Ventilating ductwork, ventilating fans and their motors

(C) Air-conditioning chillers

(D) Window cleaning equipment

(E) Other services that are non-combustible and do not contain flammable or combustible liquids or gases.

Architect to note the requirements for the proposed photovoltaic panels proposed.

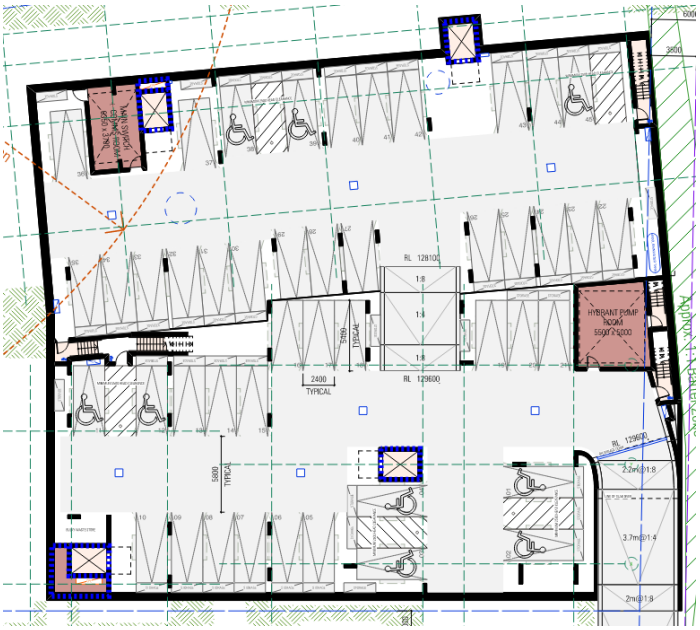
Enclosure of shafts

Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building, except that these provisions need not apply to:

- the top of a shaft extending beyond the roof covering, other than one enclosing a fire-isolated stairway or ramp; or
- the bottom of a shaft if it is non-combustible and laid directly on the ground

This applies to fire stair shafts, lift shaft and any services shafts eg mechanical services shafts, they must be enclosed at the top with the same FRL as the walls of the shaft or extend above the roof. Note that where proposed, a garbage chute shaft must be enclosed at its base (ie the garbage room) in construction that achieves an FRL of not less than -/90/90.

In a building of multiple classifications, the Type of Construction required for the building is the most fire-resisting Type resulting from the application of Table C1.1 on the basis that the classification applying to the top storey applies to all storeys. Architect to note that the lift shafts must achieve a FRL of 120/120/120 (shown in blue below) as they connect the class 7a carpark with the Class 2 apartment levels. Compliance readily achievable – Architect and Structural Engineer to note and provide plans noting the required FRL's to all walls required to be provided with a FRL.



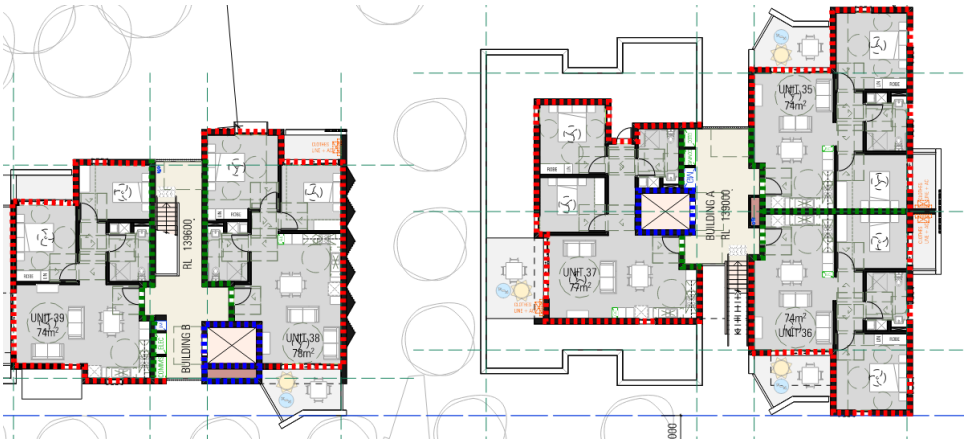
Internal fire rated walls (eg apartment bounding walls)

All internal walls bounding and separating the proposed apartments are to achieve a FRL of 90/90/90 shown in green below for reference. All internal fire rated walls must extend to—

- the underside of the floor next above; or
- the underside of a fire rated roof; or
- if the roof is not required to be fire rated, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or
- a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space between the ceiling and the roof of not less than 60 minutes.

Note a loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be constructed from concrete or masonry

Note the abovementioned construction requirements of internal fire rated walls applies to all internal walls that are required to have a FRL, not just the apartment bounding walls. Architect and Structural Engineer to note the maximum batten size that is permissible to pass through the fire walls as the design progresses.

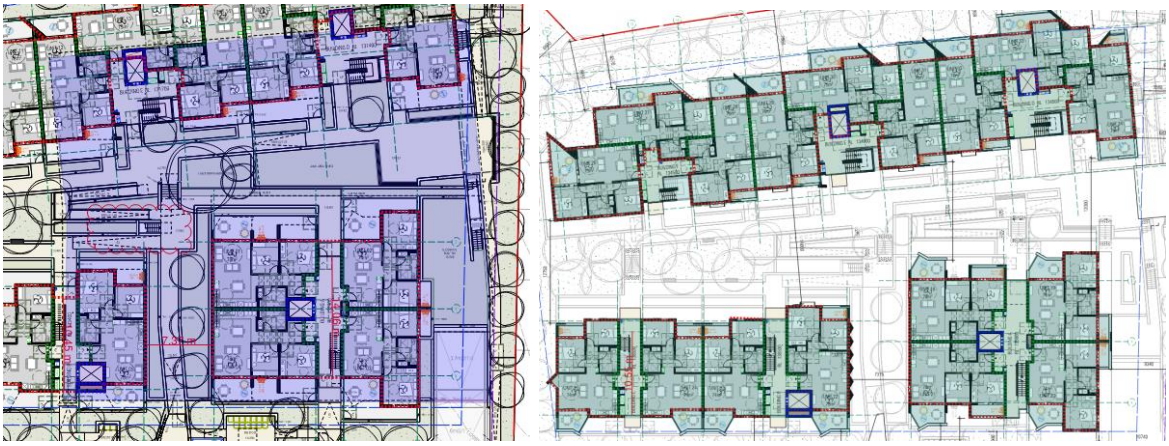


Compliance readily achievable and to be documented in the Construction Drawings. Architect to provide plans showing the FRL's to the walls separating and bounding the apartments. Additionally, details of the relationship between the walls and the roof are to be detailed prior to the issue of the relevant Construction Certificate.

Floors

All floors within the proposed development must comply with BCA Specification C1.1 and achieve the nominated FRL's specified with Table 4 of Specification C1.1. these are as follows:

- Floor between basement and ground level – 120/120/120 shown in blue below
- Apartment levels – 90/90/90 – shown in green below



Roof

The BCA states that the roof of a building of Type A Construction is not required to be provided with an FRL of 120/60/30 as long as its covering is non-combustible and the building—

(a) has a sprinkler system complying with Specification E1.5 installed throughout; or
(b) has a rise in storeys of 3 or less; or
(c) is of Class 2 or 3; or
(d) has an effective height of not more than 25 m and the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of not less than 60 minutes

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

The proposed roof to the apartment levels is required to be non-combustible as per the above definition and evidence of compliance is required prior to the completion of the design development and prior to the issue of the Construction Certificate.

The floor between the basement carpark and the ground floor will be required to have a FRL of 120/120/120 as required by BCA Clause D2.12. Structural Engineer to validate the roof of the basement car park will achieve this rating.

Internal walls & columns

For a building with an effective height of not more than 25m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than fire walls and shaft walls may have in a class 2 building, an FRL of 60/60/60.

Structural Engineer to note the requirements of this clause.

Lightweight construction

Lightweight construction required to have an FRL must comply with Specification C1.8 of the Building Code of Australia.

Non-combustible building elements

In a building required to be of Type A construction, certain elements and their components must be deemed non-combustible in construction. This includes:

- External walls
- Flooring and floor framing of lift pits
- Loadbearing and non-loadbearing internal walls where they are required to be fire-resisting
- Shafts

Note the following elements are not required to be non-combustible:

- Gaskets
- Caulking
- Sealants
- Termite management systems
- Glass, including laminated glass
- Thermal breaks associated with glazing systems
- Damp-proof courses

The external walls of the proposed building are required to be non-combustible i.e. be constructed of a material that is not deemed combustible by AS1530.1 1994 or has a CodeMark Certificate of Conformity confirming compliance to BCA CP2 and CP4. Note this will also apply to the basement carpark walls where any proposed permanent formwork systems such as Dincel is proposed. Architect to confirm if this is the case and provide copies of the CodeMark certificates of the proposed systems prior to the issue of the relevant Construction Certificate.

Compliance readily achievable with further details to be provided as the design progresses. Architect to note and document all external finishes including sarking, window packers, framing, insulation etc and provide the CodeMark Certificates of Conformity for review prior to the completion of the design development and prior to the issue of the Construction Certificate.

Fire Hazard Properties

The following materials are required to comply with the requirements of BCA Clause C1.10 and Specification C1.10 –

- Floor linings and floor coverings
- Wall linings and ceiling linings
- Air handling ductwork
- Lift cars
- Sarking type materials (note the non-combustibility requirements of BCA Clause C1.9 where installed in an external wall or an internal wall required to be fire resisting)
- Other materials including insulation materials other than sarking (note the non-combustibility requirements of BCA Clause C1.9 where installed in an external wall or an internal wall required to be fire resisting)

Compliance readily achievable. Architect to nominate the proposed materials to be utilised throughout the building and provide a finishes schedule for review and comment prior to the relevant Construction Certificate. Fire hazard tests data reports are required to be provided prior to the issue of any Occupation Certificate.

Ancillary elements

An ancillary element (i.e. an element that is secondary to and not an integral part of another element to which it is attached) must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is also non-combustible or one of the permitted elements listed under BCA clause C1.14.

Note that one of the permitted exception to the ancillary element is an awning, sunshade, canopy, blind or shading hood that—
(i) meets the requirements of Table 4 of Specification C1.10 as for an internal element (ie the columns are required to have an FRL of not less than 120/-/-); and
(ii) serves a storey—
(A) at ground level; or
(B) immediately above a storey at ground level; and
(iii) does not serve an exit, where it would render the exit unusable in a fire.

Architect to note and ensure any attachments to the internal parts or the external face of an external wall are required to be non-combustible by means of AS1530.1 or CodeMark Certification. Note this includes any kitchen or cupboard joinery etc. that is proposed to be attached to the internal parts of the external wall.

Compartmentation

The Building Code of Australia 2019 Amendment 1 compartmentation requirements for the carpark parts of the buildings is that each fire compartment must not exceed 8000m2.The size of the fire compartments do not exceed the maximum limits imposed by the BCA.

The BCA does not have a fire compartment limit for the apartments.

Vertical separation of openings in external walls (spandrels)

Spandrels are required to be provided to the building if it is not provided with a sprinkler system. Note BCA Clause C2.6(c) states that “for the purposes of C2.6, windows or other openings means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater”. Therefore all parts of the external wall, windows included, are considered as openings where the required FRL is not achieved.

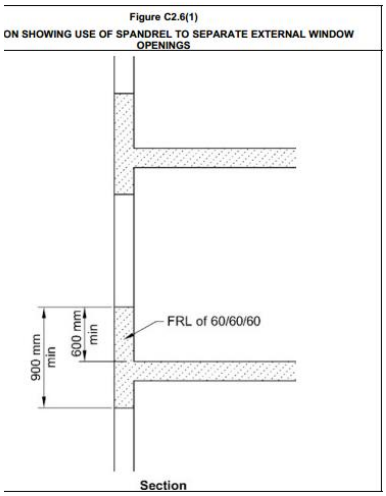
The spandrels are required to comply with the requirements of Clause C2.6 of the Building Code of Australia and must be provided with a fire resistance level of at least 60/60/60.

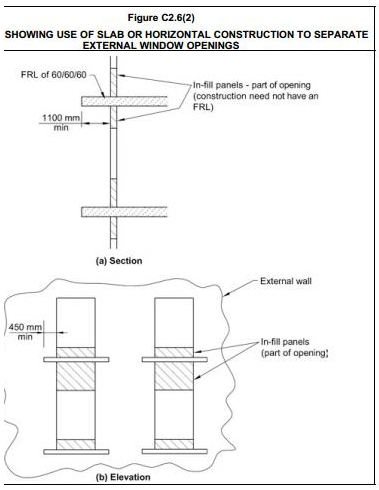
Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955

Vertical spandrels have required to have a height of at least 900mm and extend at least 600mm above floor level and horizontal spandrels are required to have a depth of at least 1100mm and extend at least 450mm past the opening that it protects.

There must be no openings within these fire rated spandrel panels eg for services penetrations or air bricks etc.

Note that will all critical dimensions eg 1100mm deep spandrels, a construction tolerance should be added eg 1150mm.



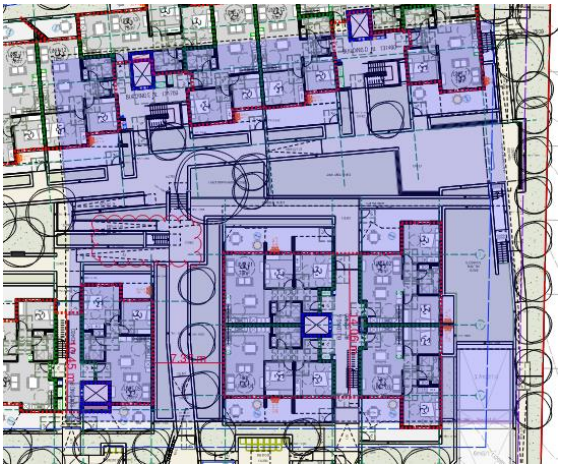


Separation of classifications in the same storey

If parts of different classifications are situated one above the other in adjoining storeys they must be separated as follows for 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.

Compliance readily achievable and to be documented in the construction documentation. Architect to note the required FRL to the floor between the carpark and the ground floor of apartments is required to have a FRL of 120/120/120. Structural Engineer to validate the proposed floor will achieve the nominated FRL.



Separation of lift shaft

Any lift connecting more than 2 storeys must be separated from the remainder of the building by enclosure of the shaft which has the relevant FRL's prescribed by Specification C1.1. The lift shafts are required to be provided with a 2-hour fire resistance level as they connect the Class 7a basement with the Class 2 apartment levels.

Boilers

Any rooms that contain proposed boilers must be fire separated from the remainder of the building by construction that achieves an FRL of at least 2 hours.

All services and equipment are to be assessed by the relevant services engineers to validate if the equipment needs fire rated protection where proposed to be installed in any plant or server room.

Boiler means a vessel or an arrangement of vessels and interconnecting parts, wherein steam or other vapour is generated, or water or other liquid is heated at a pressure above that of the atmosphere, by the application of fire, the products of combustion, electrical power, or similar high temperature means, and—
(a) includes superheaters, reheaters, economisers, *boiler* piping, supports, mountings, valves, gauges, fittings, controls, the *boiler* settings and directly associated equipment; but
(b) excludes a fully flooded or pressurised system where water or other liquid is heated to a temperature lower than the normal atmospheric boiling temperature of the liquid.

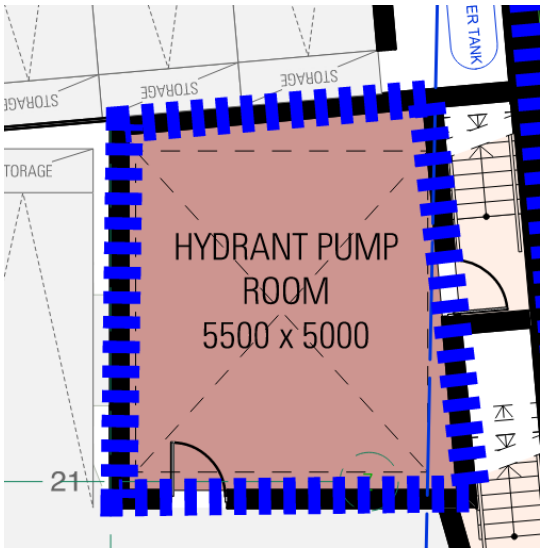
Battery Rooms

Any rooms that contain a proposed battery or batteries that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours (e.g. UPS) must be fire separated from the remainder of the building by construction that achieves an FRL of at least 2 hours.

All services and equipment are to be assessed by the relevant services engineers to validate if the equipment needs fire rated protection where proposed to be installed in any plant or server room. Furthermore, client to confirm if there is to be any battery system meeting the abovementioned parameters or any generator system is proposed to be installed in the precinct. Where this is the case, the plant / server rooms will be required to be fire separated from the remainder of the building.

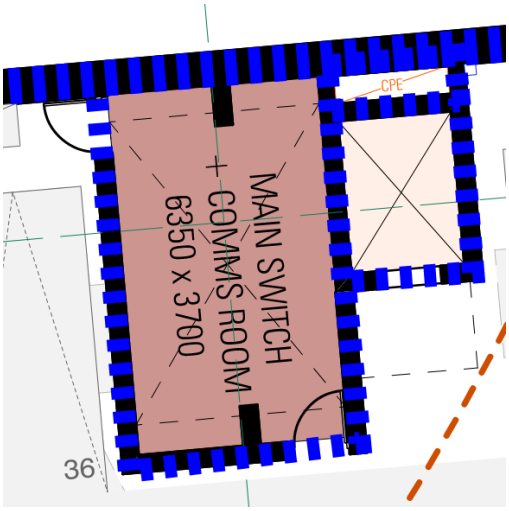
Fire hydrant pump room

The proposed fire hydrant pump room in the basement must be fire separated from the remainder of the building by construction that achieves an FRL of at least 2 hours. Architect and Structural Engineer to note and provide further details of the proposed wall types and verify the proposed construction method will achieve the nominated fire rating.



Electricity supply equipment

If the main switchboard sustains emergency equipment operating in the emergency mode it must be separated by construction having an FRL of not less than 120/120/120 and have any door protected with a self-closing fire door having an FRL of not less than -/120/30. Please confirm if this is the case to the proposed Main Switch Room located at the Basement level.



Note, emergency equipment operating in the emergency mode include fire hydrant pumps, fire hose reel pumps and the fire indicator panel etc.

Lift motor room

Any lift motor room must be fire separated from the remainder of the building by construction with an FRL of not less than 120/120/120. The construction between the lift shaft and the lift motor room need only have an FRL of not less than 120/-/-.

Public corridors in Class 2 buildings

In a Class 2 building, a public corridor, if more than 40 m in length, must be divided at intervals of not more than 40 with smoke proof walls complying with Clause 2 of Specification C2.5

The corridors are open and not bounded by construction and are therefore not considered as enclosed and are not required to be smoke separated in lengths of 40m.

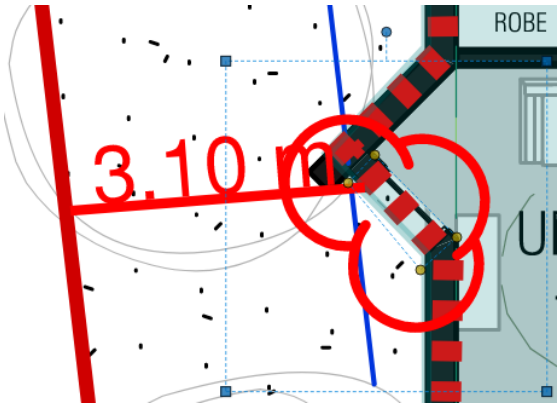
Protection of openings in external walls

Openings in an external wall that is required to have a FRL must –

(a) If the distance between the opening and the fire source feature to which it is exposed is less than –
- (i) 3m from a side or rear boundary of the allotment; or
- (ii) 6m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or
- (iii) 6m from another building on the allotment that is not class 10,

Be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally

Architect to note the requirements for protection of openings. The northern window to Unit 25 is just over 3m from the side boundary with little construction tolerance allowed for. This will need to be measured progressively throughout construction to ensure the window does not encroach within 3m of the side boundary. Where the window encroaches, protection will be required to be provided as per Clause C3.4 of the BCA.



Acceptable methods of protection

(a) Where protection is required, doorways, windows and other openings must be protected as follows:
- (i) Doorways –
  - (A) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
  - (B) -/60/30 fire doors that are self closing or automatic closing
- (ii) Windows –
  - (A) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position
  - (B) -/60/- fire windows that are automatic closing or permanently fixed in the closed position; or
  - (C) -/60/- automatic closing fire shutters
- (iii) Other openings –
- (iv) (A) excluding voids – internal or external wall-wetting sprinklers, as appropriate; or
- (v) Construction having an FRL not less than -/60/-

(b) Fire doors, fire windows and fire shutter must comply with Specification C3.4

Note - Architect to nominate the proposed method of protection of openings where protection is required to be provided.

Doorways in fire walls

The aggregate width of openings for doorways in a fire wall, which are not part of a horizontal exit, must not exceed ½ the length of the fire wall, and each doorway must be protected by a single fire door or fire shutter which has a FRL of not less than that required by Specification C1.1 for the fire wall except that each door or shutter must have an insulation level of at least 30.

The fire door or fire shutter must be automatically closing or self-closing.

Compliance readily achievable and to be detailed in the next phase of design. Architect to provide details of the door schedules with the nominated FRLs.

Openings in fire-isolated lift shafts

- Doorways — If a lift shaft is required to be fire-isolated, an entrance doorway to that shaft must be protected by –/60/– fire doors that—
  - (i) comply with AS 1735.11; and
  - (ii) are set to remain closed except when discharging or receiving passengers, goods or vehicles.

- Lift indicator panels — A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift shaft must be backed by construction having an FRL of not less than –/60/60 if it exceeds 35 000 mm2 in area.

Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955

Doorways in bounding construction in apartments

A door from a Class 2 sole-occupancy-unit (apartments) to a public corridor, public lobby or the like must be self-closing and have an FRL of at least -/60/30.

If a door in a Class 2 building provides access from a room not within a sole-occupancy-unit (apartment) to a public corridor it must be self-closing and have an FRL of at least -/60/30.

Public corridor means an enclosed corridor, hallway or the like which—
(a) serves as a means of egress from 2 or more *sole-occupancy units* to a *required exit* from the *storey* concerned; or
(b) is *required* to be provided as a means of egress from any part of a *storey* to a *required exit*.

Compliance readily achievable. Architect to note and provide details within the door schedule for further review prior to the issue of the relevant Construction Certificate.

Openings in floors and ceilings for services

Where a service passes through a floor that is required to have an FRL with respect to integrity and insulation the service must be protected by a shaft or in accordance with BCA Clause C3.15 and Specification C3.15. Alternatively, the services shafts serving the apartment buildings may be fire separated from the remainder of the building and act as a shaft. Compliance readily achievable – Architect to note and confirm the proposed method of compliance.

Opening in shafts

An opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by a self-closing -/60/30 fire door or hopper, or an access panel having an FRL of not less than -/60/30 or if it is a garbage shaft a door or hopper that is non-combustible.

This applies to any proposed garbage chute and electrical and communication services cupboards on each floor if they are housed in a shaft.

Openings for service installations

All services penetrations within fire rated walls, floors and ceilings are to be treated in accordance with Clause C3.15 of the Building Code of Australia 2019 Amendment 1. Compliance readily achievable. Architect and Services Consultants to note where applicable.

Construction joints

Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS1530.4 to achieve the required FRL.

Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955

5.0 Egress

Principles

The buildings egress is required to be designed to ensure compliance with the following minimum requirements:

- The exit stairs serving the proposed building are not required to be a fire isolated stair.
- The apartment entry doors must not be more than 6m from an exit or from a point from which travel in different directions to two exits is available.
- The maximum distance between alternative exits serving the apartment levels is 45m.
- No point in the building, which is not an apartment, must be more than 20m from an exit or from a point at which travel in different directions to two exits is available, in which case the maximum distance to one of those exits must not exceed 40m.
- The maximum distance between alternative exits serving the basement is 60m.
- Exits that are required as alternative means of egress must be distributed as uniformly as practicable within or around the storey served.
- Exits that are required as alternative means of egress must be not less than 9m apart and not more than 45m apart.
- Exits that are required as alternative means of egress must be located so that alternative paths of travel do not converge such that they become less than 6m apart.
- The unobstructed height throughout an exit (eg fire stair) must be not less than 2m except for doorways which may be reduced to not less than 1980mm.
- The unobstructed widths of each path of travel to an exit must be not less than 1m except for doorways which may be reduced to not less than 750mm. (Please see the requirements for disabled access below.)
- Each stair must provide independent egress from each storey served and discharge directly to a road or open space or into a covered area that adjoins a road or open space.
- The discharge point of alternative exits must be located as far apart as practical.
- The doors to the electrical, data and communication services cupboards must have a non-combustible lining and be smoke separated from the lobby. The cupboards must be smoke separated from the corridor so that there is no connection between the cupboard and any false ceiling over the lobby.
- The construction and discharge of exits, landings, thresholds, balustrades and handrails are required to comply the requirements of the BCA.
- Exit doors should swing in the direction of travel and should be free passage from the side that a person is seeking egress.
- All exit doorways must have level thresholds on either side of the doorway or be provided with a threshold ramp.
- Handrails in the stairs are required to be designed and constructed to comply with clause 12 of AS 1428.1 2009.

Number of exits required

- All buildings – every building shall have at least one exit from each storey – complies
- Basements – in addition to any horizontal exit, not less than 2 exits must be provided from any storey if egress from that storey involves a vertical rise within the building of more than 1.5m – complies
- Access to exits – without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to an exit – complies

When fire-isolated stairways and ramps are required

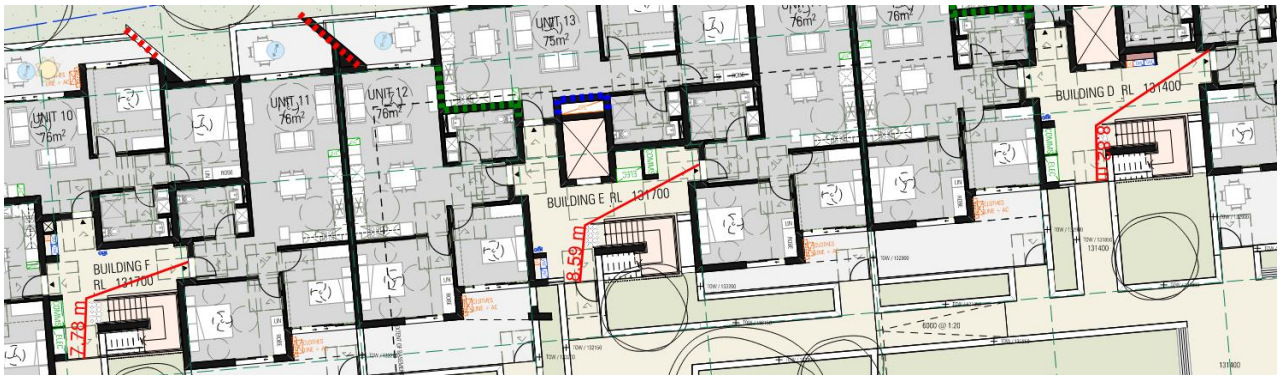
Note that the required exits do not pass through more than 3 consecutive storeys in a Class 2 building and are therefore not required to be fire-isolated.

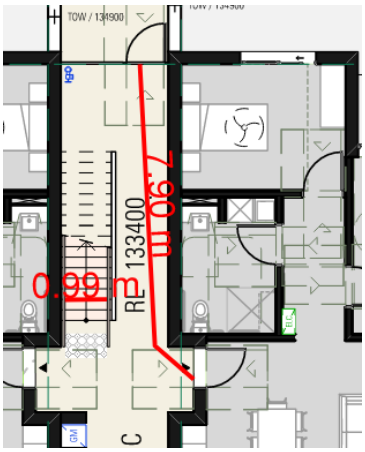
Exit Travel Distances
The following deviations from the deemed-to-satisfy provisions are as follows:

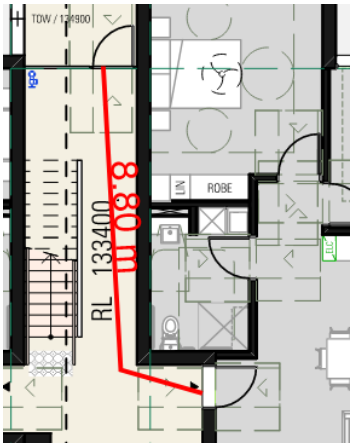
Ground Floor

- Building A – approx. 9m to an exit in lieu of 6m
- Building B – approx. 9m to an exit in lieu of 6m
- Building C – approx. 8m to an exit in lieu of 6m
- Building D – approx. 9m to an exit in lieu of 6m
- Building E – approx. 9m to an exit in lieu of 6m
- Building F – approx. 8m to an exit in lieu of 6m

A Fire Engineered Performance Solution will be required to be provided where re-design is not possible. Fire Engineer to include in the FER and provide further details prior to the issue of the Construction Certificate.



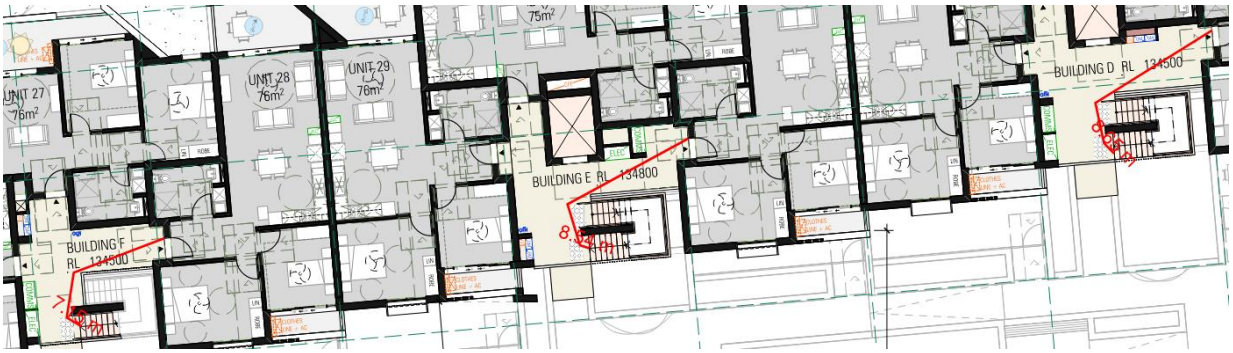




First Floor

- Building A – complies
- Building B – approx. 9m to an exit in lieu of 6m
- Building C – approx. 8m to an exit in lieu of 6m
- Building D – approx. 9m to an exit in lieu of 6m
- Building E – approx. 9m to an exit in lieu of 6m
- Building F – approx. 8m to an exit in lieu of 6m

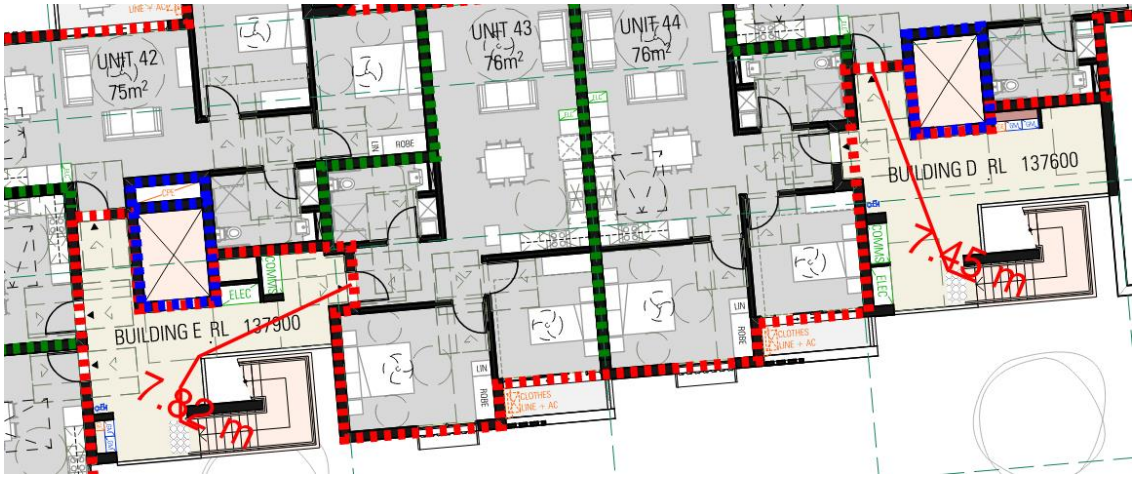
A Fire Engineered Performance Solution will be required to be provided where re-design is not possible. Fire Engineer to include in the FER and provide further details prior to the issue of the Construction Certificate.

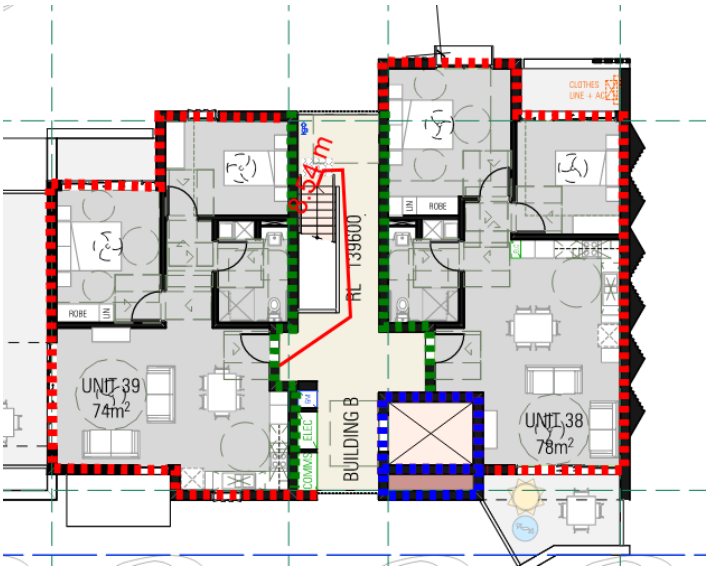


Second Floor

- Building A – complies
- Building B – approx. 9m to an exit in lieu of 6m
- Building C – N/A
- Building D – approx. 8m to an exit in lieu of 6m
- Building E – approx. 8m to an exit in lieu of 6m
- Building F – N/A

A Fire Engineered Performance Solution will be required to be provided where re-design is not possible. Fire Engineer to include in the FER and provide further details prior to the issue of the Construction Certificate.





Distance between alternative exits

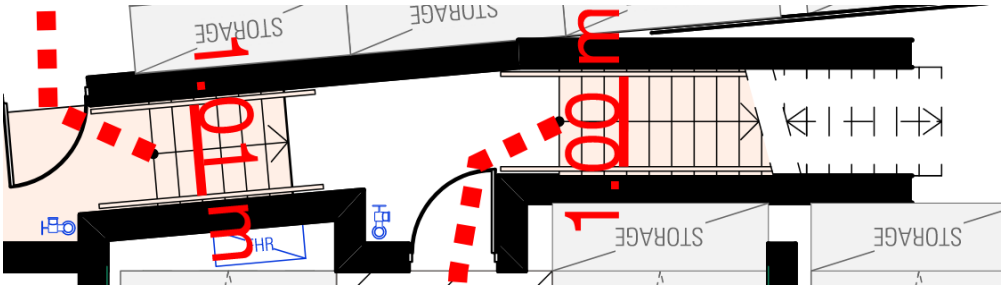
Exits that are required as alternative means of egress must be –
(a) Distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including the lift lobby areas; and
(b) Not less than 9m apart; and
(c) Not more than 60m apart; and
(d) Located so that alternative paths of travel do not converge such that they become less than 6m apart.

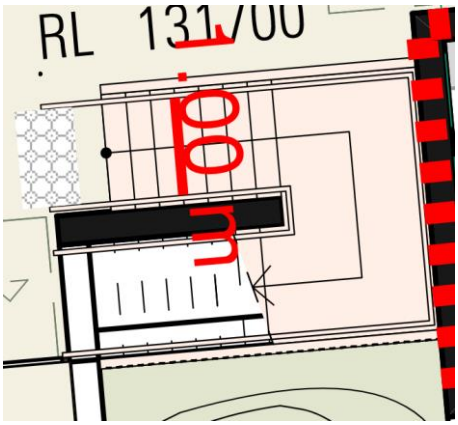
Current design to the basement complies.

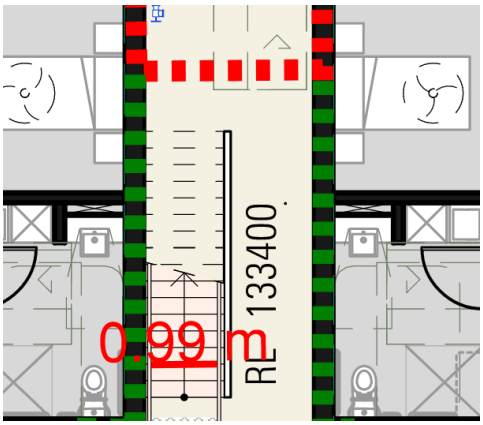
Dimensions of exits

All paths of travel in the building are required to have a minimum clear width of 1m.

Compliance readily achievable. It is noted that all required egress stairs throughout are dimensioned at 1m when measured between the handrails. There is very little construction tolerance allowed for and will need to be measured progressively throughout construction.







Travel by non-fire-isolated stairways or ramps

- A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided.
- In a Class 2 building, the distance between the doorway of a room or sole-occupancy unit and the point of egress to a road or open space by way of a stairway or ramp that is not fire-isolated and is required to serve that room or sole-occupancy unit must not exceed 60m
- In a Class 5, 6, 7, 8 or 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80 m.
- In a Class 2 building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than—
  (i) 15 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or
  (ii) 30 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.
- In a Class 5 to 8 or 9b building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than—
  (i) 20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or
  (ii) 40 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.

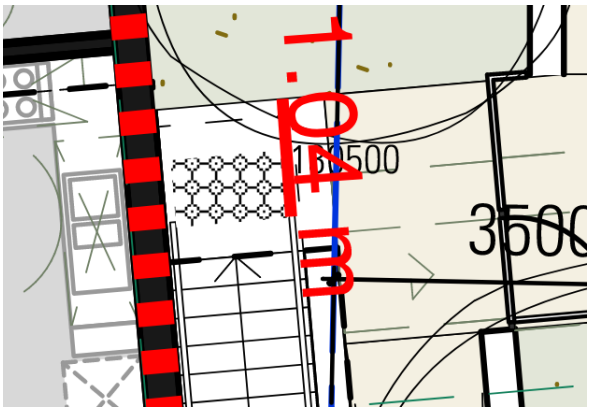
Current design complies.

Discharge from exits

The BCA states that an exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it.

Where the required exit leads to open space, the path of travel to the road must have an unobstructed width throughout of not less than 1m.

Compliance readily achievable. Architect to note the above requirements and ensure that all paths of travel to the road are a minimum 1m wide. The Southern walkway is currently dimensioned at 1m. Ensure that a minimum 1m is achieved during construction.



As the exits discharges to open space which is at a different level than the public road to which it is connected, the path of travel to the road must be by a ramp or other incline having a gradient not steeper then 1:8 at any part, or not steeper than 1:14 if required to be accessible.

Proposed design currently complies.

Non-fire-isolated stairways and ramps

In a building having a rise in storeys of more than 2, required stairs and ramps (including landings and any supporting building elements) which are not required to be within a fire-resisting shaft, must be constructed according to D2.2, or only of—
(a) reinforced or prestressed concrete; or
(b) steel in no part less than 6 mm thick; or
(c) timber that—
(i) has a finished thickness of not less than 44 mm; and
(ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and
(iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

Compliance readily achievable. Architect to note and provide the proposed details of all non-fire-isolated stairs as the design progresses.

Installation in paths of travel

Electrical, comms or mechanical distribution boards installed along a path of travel to an exit are required to be enclosed by non-combustible construction or a fire protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure.

Compliance readily achievable – Services Consultants to note and ensure the design complies.

Enclosure of space under stairs and ramps

Non fire-isolated stairways and ramps — The space below a required non fire-isolated stairway (including an external stairway) or non fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless—
(i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and
(ii) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door.

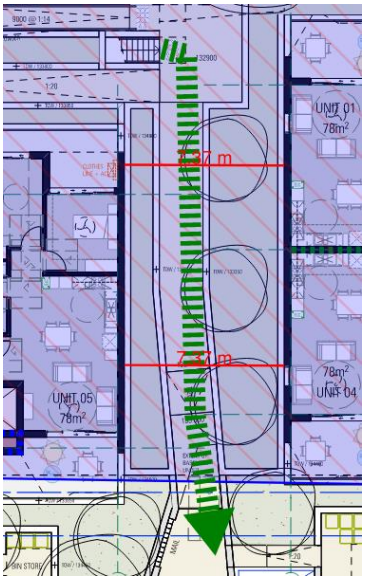
Compliance readily achievable. Architect to note the above-mentioned requirements where it is proposed to enclose the space under the stairs.

Roof as open space

Where an exit discharges to a roof of a building, the roof must have an FRL of not less 120/120/120 and not have any roof lights or other openings within 3m of the path of travel of persons using the exit to reach a road or open space.

Note that the basement stairs currently discharge to the roof of the carpark, and therefore the slab above of the carpark must achieve a FRL of 120/120/120 as shown below. Structural Engineer to validate the car park roof will comply.

The path of travel from the roof to open space between buildings A and B currently comply, however there is little tolerance allowed between the two buildings. This will need to be checked progressively throughout the design. Where openings encroach within 3m of the path of travel, they will need to be relocated or a performance solution will need to be considered.



Stairs

The proposed stairs are required to be provided with risers and goings that have a constant dimension throughout the flight and that comply with the formula 2R+G = 550-700.

The treads and landings in the stairs must have a surface with a slip-resistance classification not less than P3 or R10 when tested in accordance with AS 4586 2013 or a nosing strip or landing edge strip with a slip-resistance classification not less than P3 when tested in accordance with AS 4586 2013.

Compliance readily achievable – Architect to verify that the design complies and provide further details of all stairs within the complex for further review and comment prior to the issue of the Construction Certificate.

Landings

Landings are required to have a maximum gradient of 1:50 and must be not less than 750mm long, and where this involves a change in direction, the length is measured 500mm from the inside edge of the landing.

Landings must have a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586 or a strip at the edge of the landing with a strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586, where the edge leads to a flight below.

Compliance readily achievable and to be further documented in the next stage of design. Architect to note and provide further details for further assessment prior to the issue of the Construction Certificate.

Door thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless it is provided with a threshold ramp or step ramp in accordance with AS1428.1 2009.

The doorways from the building to the outside must not have a step in the door threshold. Any level change must be made up by a ramp complying with AS1428.1 2009.

Compliance readily achievable and to be further documented as the design progresses. Architect to note and provide all details of any threshold ramps for further assessment prior to the issue of the Construction Certificate.

Barriers to prevent falls

A continuous barrier must be provided along the side of a stairway, ramp, floor, corridor, hallway, balcony, deck, verandah or the like where the trafficable surface is 1m or more above the surface beneath.

Barrier heights must be a minimum 1m high along all non-fire isolated stairs providing egress to the Class 2 building as well as to the sole-occupancy verandahs on Levels 1 and 2.

As the stairs are all non-fire-isolated, all barrier openings must be less than 124mm, measured above the nosing line of the stair treads.

All stair barriers and balconies must have no horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing.

Compliance readily achievable. Architect to note the above-mentioned requirements and provide details of all stair and balcony barriers for further assessment. Once available workshop drawings are to be provided for further assessment.

Structural Engineers input will also be required to validate the balustrade design will meet the loading requirements of AS1170.1-2002.

Handrails

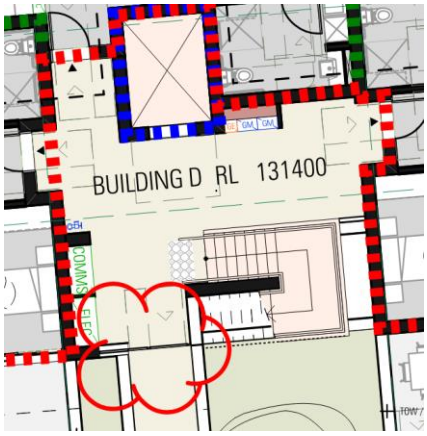
Handrails must be provided to both sides of all stairs. The handrails must be fixed at a height between 865 – 1000mm measured above the nosings of stair treads and the floor surface of ramp, landing, or the like and be continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand-hold.

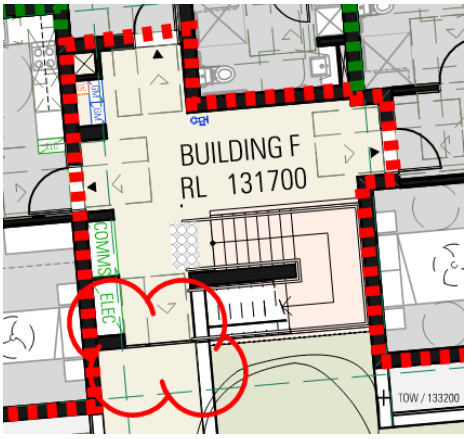
As the stairs serving both the basement carpark and the apartment levels are required to be accessible, they must be designed and constructed to comply with Clause 12 of AS4128.1.

Compliance readily achievable. Architect to note above mentioned requirements and provide details of all handrails including those within the landscaped areas for further assessment. Note all handrails are to comply with the requirements of AS1428.1-2009 (i.e. handrails provided to both sides of the stairs and ramps, handrail extensions and turn downs), refer to the accessibility section of this report for further information. Once available workshop drawings are to be provided for further assessment.

Exit door swing

Exit doors are required to swing in the direction of travel ie outwards. Compliance readily achievable and to be documented as the design progresses. Architect to confirm and provide details of the door type to the ground levels of Buildings D and F for further assessment.





Operation of Latch

The door hardware to all proposed doors must be readily openable without a key from the side that faces a person seeking egress by:

- a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch and have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45mm or
- a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor.

The door hardware to the sole occupancy unit doors other than accessible sole occupancy unit doors, are not required to comply with D2.21 as per concession listed in D2.1 of the Building Code of Australia 2019 Amendment 1.

Compliance readily achievable. Architect to note and provide further details of the proposed door hardware for further assessment.

Protection of openable windows

- A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath a bedroom in a Class 2 building.
- Where the lowest level of the window opening is less than 1.7 m above the floor, the window opening must comply with the following:
    - The openable portion of the window must be protected with—
        - a device capable of restricting the window opening; or
        - a screen with secure fittings.
    - the device or screen must—
        - not permit a 125 mm sphere to pass through the window opening or screen; and
        - resist an outward horizontal action of 250 N against the—
            - window restrained by a device; or
            - screen protecting the opening; and
        - have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.
- A barrier with a height not less than 865 mm above the floor is required to have a child resistant release mechanism in addition to window protection. The window barrier must not permit openings greater than 124mm and not have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor to facilitate climbing.

Architect to note the above requirements and provide details for further assessment prior to the relevant Construction Certificate.

5.0 Disabled Access

All new works should comply with the requirements of Part D3 of Building Code of Australia 2019 Amendment 1 and the relevant parts of AS1428.1 2009, these include:

- All doors to rooms that are not apartments (except accessible rooms) should be a minimum of 850mm clear width.
- At least one leaf of all double doors must have a clear width of 850mm.
- All doors to rooms that are not apartments (except accessible rooms) should have adequate circulation spaces as per the requirements of figure 31 of AS1428.1 2009.
- All doors are to have a luminous contrast of at least 30% between the door leaf and door jamb as per clause 13.1 of AS1428.1 2009.
- All switches, card readers etc should be placed at a height of between 900-1100mm from floor level and not less than 500mm from any internal corner.
- The accessible carspaces are to comply with the requirements of AS NZS 2890.6-2009 Parking facilities - Off-street parking for people with disabilities.
- All new floor surfaces or finishes are to be slip resistant.

Disabled access comments

All common use facilities are to be accessible and disabled access is required to be provided to the entry door of each apartment on one level to the entrance doorway of each sole-occupancy unit located on that level. No less than 3 accessible sole-occupancy units must be provided as required by BCA Clause D3.1 and Table D3.1.

An accessway must be provided to a building required to be accessible -

- From the main points of a pedestrian entry at the allotment boundary; and
- From another accessible building connected by a pedestrian link; and
- From any required accessible carparking space on the allotment

All apartment buildings are required to be accessible and an accessway must be provided through the principal pedestrian entrance.

Braille & tactile signage is required to identify any room with a hearing loop system, each male, female, ambulant and accessible toilet not within a sole-occupancy unit.

Braille and tactile signage complying with BCA Specification D3.6 must be provided to all exit door (eg door into the fire stairs and external doors) stating 'Exit' and 'Level' followed by the floor level number.

Tactile indicators are required to be provided to all stairs and are required to be designed and installed in accordance with the requirements of BCA Clause D3.8 and AS1428.4.1 2009.

All internal and external floor finishes are required to be slip resistant in accordance with AS1428.1 2009. Provide details for review prior to the issue of the Construction Certificate.

The services locations should be coordinated with the headroom clearance requirements for the accessible car spaces.

All services are required to be coordinated with the architectural drawings and with the disabled access requirement for doors to be provided with the appropriate circulation spaces. Fire hose reel, fire extinguishers etc are not permitted to be placed with the accessible door's circulation spaces.

Accessible carparking

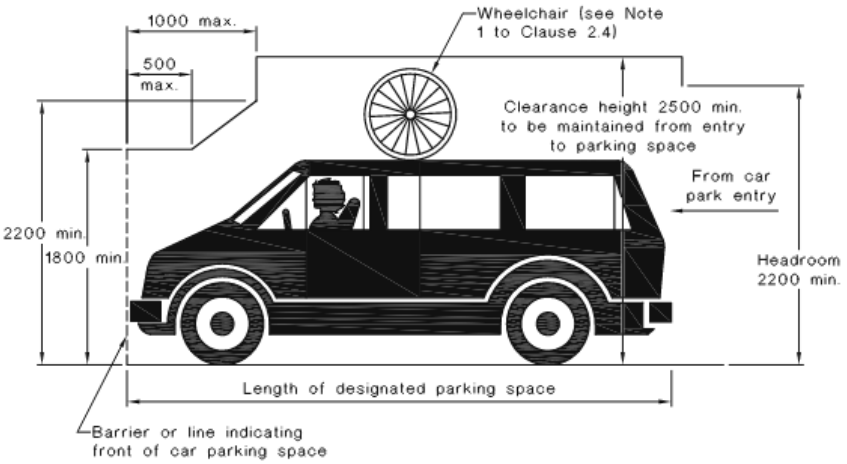
Accessible carparking spaces must be provided in accordance with BCA Clause D3.5 and Table D3.5 in a car parking area on the same allotment as a building required to be accessible. Car parking spaces must comply with AS/NZS 2890.6 Note the path of vehicular travel from the car park entrance to all parking spaces for people with disabilities and from those spaces to the car park exit shall have a minimum headroom of 2200mm.

The headroom above each dedicated space and adjacent shared area, measured from the level of the dedicated space shall be a minimum of 2500 mm. For an angle parking space the headroom of the front of the space and its adjacent shared area may be reduced to lie within the profile.

The accessible carspaces is required to comply with the requirements of AS/NZS 2890.6 2009 which includes the following requirements:

- A minimum width of 2.4m and minimum length of 5.4m to the carspace;
- A minimum width of 2.4m and minimum length of 5.4m to the shared space;
- The dedicated space and the shared area are required to be at the same level;
- A bollard is required to be provided in the shared space 750-850mm from the front of the shared space and along the centre line;
- The accessible carspace and related walking and wheelchair unloading areas are required to comprise a firm plane surface with a fall not exceeding 1:40 in any direction (1:33 if the surface is a bituminous seal and the parking space is out of doors). These areas shall have a slip-resistant surface.
- Where kerb ramps are to be provided they are required to be placed at a front or rear corner of the parking space;
- Each dedicated space shall be identified by means of a white symbol of access between 800mm and 1000mm high placed on a blue rectangle with no side more than 1200mm, placed as a pavement marking in the centre of the space between 500mm and 600mm from its entry point.
- Dedicated parking spaces shall be outlined with unbroken non slip yellow lines 80-100mm wide on all sides excepting any side delineated by a kerb, barrier or wall;
- Shared areas shall be outlined with unbroken non slip yellow lines 80-100 mm wide on all sides excepting any side delineated by a kerb, barrier or wall, and marked with diagonal stripes 150-200 mm wide with spaces 200-300mm between stripes. The stripes shall be at an angle of 45 ±10 degrees to the side of the space.

Services consultants to note and ensure no bulkheads and the like reduce the required head heights within the accessible car spaces.



Continuous accessible paths of travel

The minimum unobstructed height of a continuous accessible path of travel is required to be 2m or 1.98m at doorways and the minimum width is required to be 1m and 850mm at doorways.

Fixtures and fittings such as lights, awnings, operable parts of windows, telephones, skirtings, essential fixtures and fittings such as fire hose reels, fire extinguishers and switchboards are not permitted to intrude into the minimum unobstructed width.

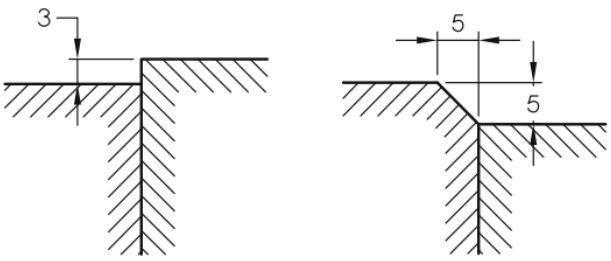
1.8m wide x 2m long passing spaces are required to be provided within 20m intervals on those parts of an accessway where a direct line of sight is not available.

Turning spaces complying are required to be provided within 2m of the end of accessways where it is not possible to continue travelling along the accessway and at maximum 20m intervals along the accessway.

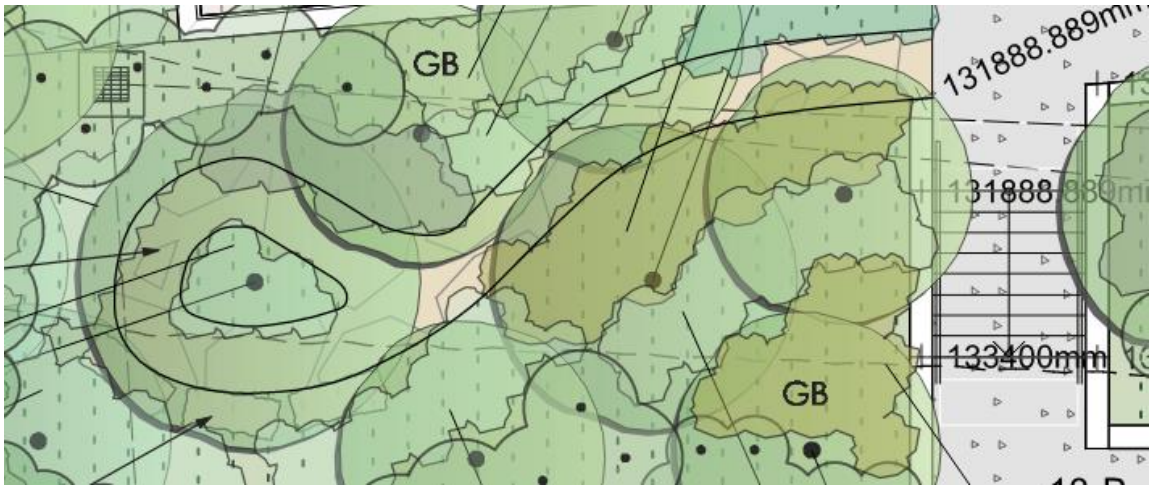
Floor or ground surfaces on continuous accessible paths of travel and circulation spaces

The access requirements include a requirement that the abutment of surfaces shall have a smooth transition. Design transition shall be 0 mm. Construction tolerances shall be 0 ±3 mm for vertical changes in level and 0 ±5 mm provided the edges have a bevelled or rounded edge to reduce the likelihood of tripping.

Compliance readily achievable and to be further documented as the design develops. Note this also applies to the landscaped area on ground floor. Any changes in pavers or floor materials shall have a smooth transition. This applies where the proposed sensory walkway adjoins the concrete walkways.



(a) Change in level



The pile height or pile thickness of carpet is required to not exceed 11mm and the carpet backing thickness shall not exceed 4 mm.

Grates provided along a continuous accessible path of travel and in circulation spaces are required to comply with the following:

- Circular openings shall be not greater than 13 mm in diameter.
- Slotted openings shall be not greater than 13 mm wide and be oriented so that the long dimension is transverse to the dominant direction of travel.

Slip resistance

A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with an ambulant or sensory disability. The following table lists the minimum slip resistance classifications for common locations.

Location	Wet pendulum test	Oil-wet inclining platform test
External ramps steeper than 1:14	P5	R12
External ramps and walkways not steeper than 1:14	P4	R11
Wet areas within schools eg toilets	P3	R10
Transitional areas within schools	P2	R9
Dry areas within schools	P1	R9
Stair tread or landing surface - Dry	P3	R10
Stair tread or landing surface - Wet	P4	R11
Stair nosing or landing edge strip - Dry	P3	-
Stair nosing or landing edge strip - Wet	P4	-

Provide the test results for the slip resistance of the proposed floor finishes prior to their purchase for review.

Walkways

Where provided walkways are required to be provided with landings at all changes in direction and at every doorway, gate, or similar opening.

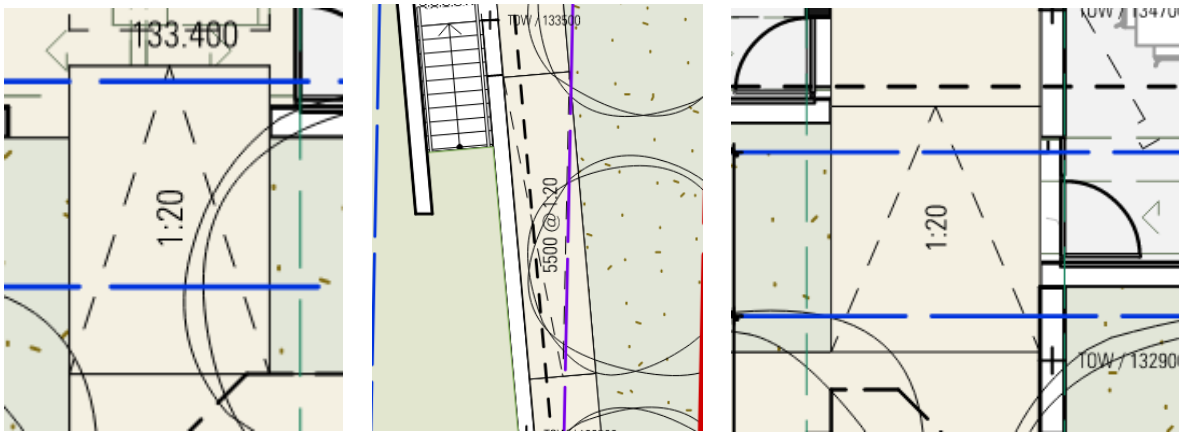
Landings are required to have a minimum length of 1200mm where there is no change in direction.

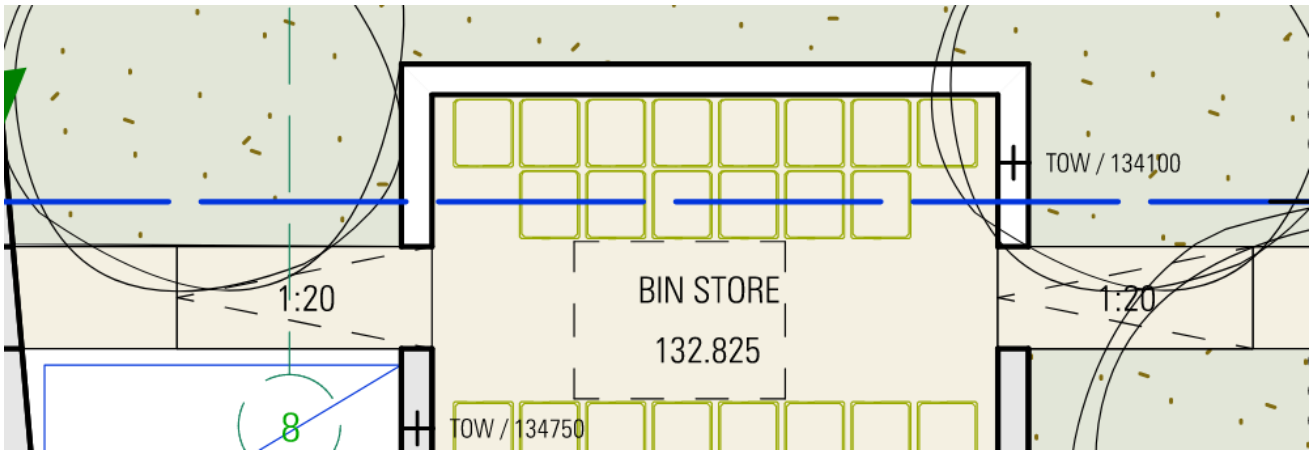
The floor or ground surface abutting the sides of the walkway are required to be provided with a firm and level surface of a different material to that of the walkway at the same level of the walkway, follow the grade of the walkway and extend horizontally for a minimum of 600 mm unless one of the following is provided to both sides of the walkway:

- A kerb with a minimum height of 65mm; or
- A kerb rail and handrail; or
- A wall not less than 450 mm in height.

Architect to note and provide details of the walkways including gradients. Assessed drawings appear to indicate that kerbs are provided to all external walkways interconnecting the buildings. Architect to provide details of the kerbs for further assessment.

Architect to note the following walkways that are not shown to have kerbs. Please confirm the proposed method of complying with the requirements of this clause (i.e. kerbs, kerbrail and handrails or walls).





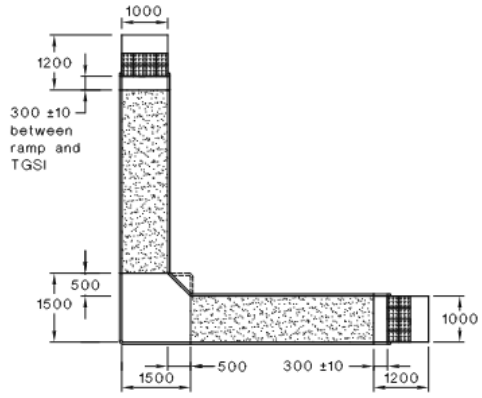
Ramps

Ramps are required to be provided with landings at all changes in direction and at every doorway, gate, or similar opening.

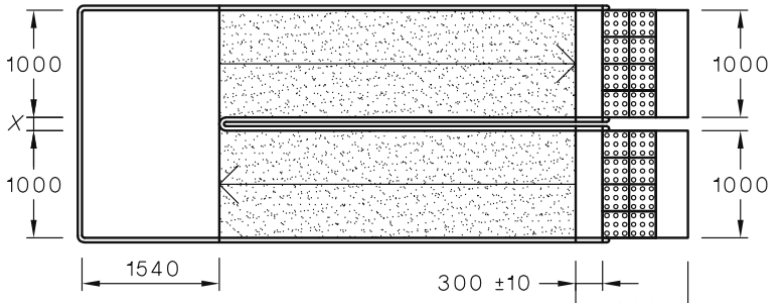
Ramps are required to be provided with landings at intervals of not greater than 9m for ramp gradients of 1:14 and at intervals of not greater than 15m for ramp gradients steeper than 1:20.

For ramp gradients between 1:14 and steeper than 1:20, at intervals that shall be obtained by linear interpolation.

Landings provided for ramps with a change of direction of 90º are required to have a minimum length of 1500mm as shown below.



Landings provided for ramps with a change in direction of 180° are required to have a minimum length of 1540mm as seen below.



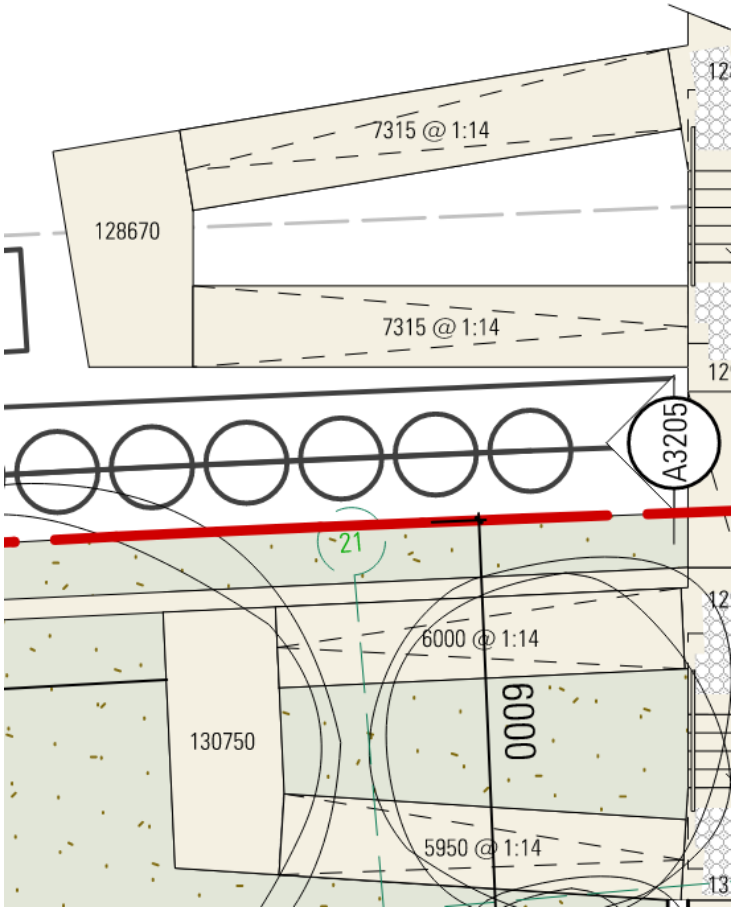
The widths of landings are required to be measured clear of handrails and kerbrails.

Ramps shall have a handrail on each side of the ramp. The handrails are required to extend at least 300mm past the top and bottom of the ramp and have a turndown of 180° or be returned to the ground and are required to be continuous around landings.

Ramps and intermediate landings are required to be provided with kerbs or kerb rails on both sides that:

- Have a minimum height above the finished floor of 65mm.
- Have a height of the top of the kerb or kerb rail that is not within the range 75mm to 150mm above the finished floor.
- The kerb or kerb rail is not permitted to have longitudinal gaps or slots greater than 20mm within the range 75mm to 150mm above the finished floor.

Architect to note and show handrails and kerbrails to the proposed ramps shown below



Ramp handrails with a height of 865-1000mm (900mm recommended) are required to be installed on both sides of the ramp, are to be continuous throughout the ramp flight and, where practicable, around landings.

The cross-section of handrails is required to be circular or elliptical, not less than 30mm or greater than 50mm in height or width for not less than 270° around the uppermost surface.

Compliance readily achievable. Architect to note and provide further details of the ramp, its handrails and kerbrails prior to the relevant Construction Certificate.

Stairs

All external and internal stairs shall have opaque risers. Tactiles are required to be designed and installed in accordance with AS1428.4.1. They are required to be installed at the top and bottom of each stair and any intermediate landing.

Each stair tread nosing is required to be provided with a strip not less than 50mm and not more than 75mm deep across the full width of the path of travel. This applies to general communication stairs as well as fire stairs only used for egress.

The strip may be set back a maximum of 15mm from the front of the nosing and is required to have a minimum luminance contrast of 30% to the background.

Stair handrails with a height of 865-1000mm (900mm recommended) are required to be installed on both sides of the stairs and are to be continuous throughout the stair flight and, where practicable, around landings.

The cross-section of handrails is required to be circular or elliptical, not less than 30mm or greater than 50mm in height or width for not less than 270° around the uppermost surface.

Where a handrail terminates at the bottom of a flight of stairs, the handrail is required to extend at least one tread depth parallel to the line of nosings plus minimum of 300mm horizontally from the last riser. The handrail is required to extend a minimum of 300mm horizontally past the nosing on the top riser

Provide further details of the stairs to the pool for review eg handrails, nosing strips, dimensions etc for further assessment prior to the relevant Construction Certificate.

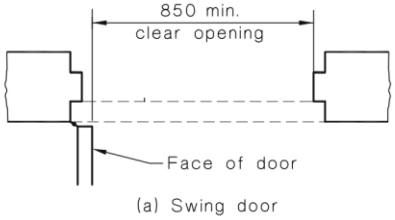
Doorways

Doorways are required to be provided with a minimum luminance contrast of 30% between:

- door leaf and door jamb;
- door leaf and adjacent wall;
- architrave and wall;
- door leaf and architrave; or
- door jamb and adjacent wall.

The minimum width of the area of luminance is required to be 50mm. Note that frameless glazed doors will not comply with this requirement and should not be specified.

Doorways are required to be provided with a minimum clear opening width of 850mm and where sliding doors are provided the clear opening width must allow for a minimum 60mm gap between the door handle and the door frame when the door is open and closed.



(a) Swing door

At least one leaf of all double doors is required to have a minimum clear width of 850mm.

Circulation spaces are required to be provided at every doorway, gate, or similar entry way, on a continuous accessible path of travel. The circulation space required will depend on the type of door ie swing or sliding and the angle of approach ie side or front on etc.

Where possible the required circulation space should be provided with a construction tolerance and the required dimension of any latch side wall should be stated on the drawings.

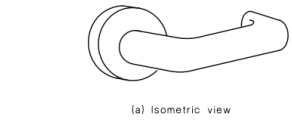
Door handles and related hardware are required to be of the type that allows the door to be unlocked and opened with one hand. The handle is required to be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch. ‘D’ type handles shall be provided on sliding doors.

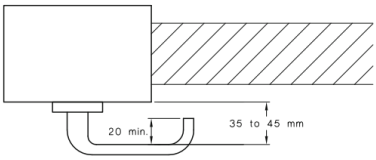
The clearance between the handle and the back plate or door face at the centre grip section of the handle is required to be not less than 35mm and not more than 45mm.

Where snibs are installed, they shall have a lever handle of a minimum length of 45mm from the centre of the spindle.

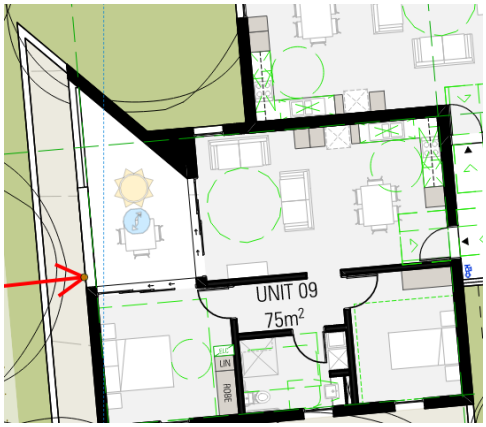
For doors other than fire doors where a door closer is fitted, the force required at the door handle to operate the door shall not exceed 20N. Note that this applies particularly to the proposed large sliding doors.

Where an outward opening door is not self-closing, a horizontal handrail or pull bar is required to be fixed on the closing face of a side-hung door.

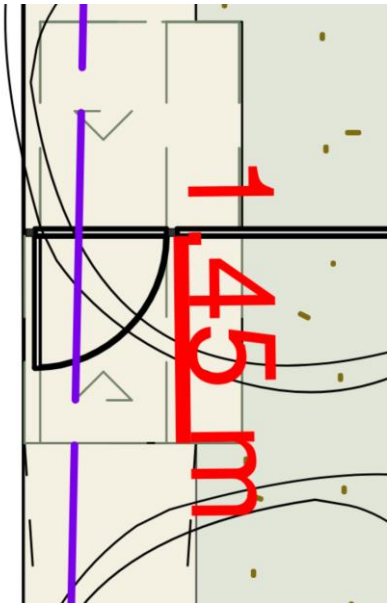




Compliance readily achievable. Architect to note the requirements and provide further details on the proposed door hardware for further assessment prior to the issue of the relevant Construction Certificate. Additionally, Architect to confirm the nominated accessible sole-occupancy units for further review as it appears that some sliding doors providing access to the balconies will not achieve the required latchside clearance due to the current configuration.



Architect to note the landing to the external gate at the western end of the complex does not achieve a minimum of 1540mm circulation length and the plans will be required to be amended to comply.



Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955

Switches & Controls

All switches and controls on an accessible path of travel, other than general purpose outlets, are required to be located not less than 900 mm nor more than 1100mm above the plane of the finished floor and not less than 500mm from internal corners.

This applies to light switches, intercoms, card readers etc and this requirement should be stated on the architectural and services drawings.

Exemptions

The following areas are not required to be accessible:
- An area where access would be inappropriate because of the particular purpose for which the area is used.
- An area that would pose a health or safety risk for people with a disability.
- Any path of travel providing access only to an area exempted by (a) or (b).

This generally applies to plant rooms and other areas used occasionally by maintenance personnel. It should not be used for exempting disabled access into storerooms or other areas used occasionally by staff.

Signage

Braille and tactile signage complying with the requirements of BCA Specification D3.6 is required to be provided to the exit doors serving the floors. The sign is required to state ‘Exit Ground Level’, ‘Exit level 1’ etc as required.

Where a pedestrian entrance is not accessible directional signage incorporating the international symbol of access must be provided to direct a person to the location of the nearest accessible pedestrian entrance.

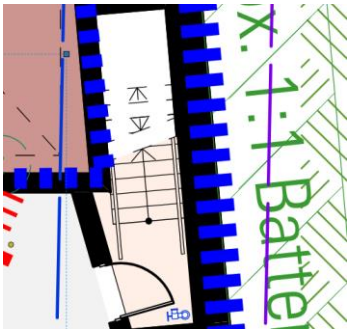
Tactile indicators

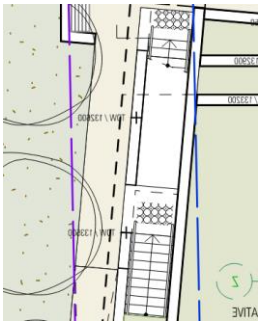
Tactile indicators comply with AS1428.4.1 2009 must be provided to:
- a non-fire rated stairway used for general communication; and
- the underside of an overhead obstruction (eg stair soffit) unless a suitable barrier (eg handrail) is provided.

Tactile indicators are required to have a luminance-contrast to the base surface as follows:
- Where the integrated TGSIs are of the same colour as the underlying surface—not less than 30% across its entire area.
- Where discrete TGSIs—not less than 45%.
- Where discrete TGSIs are constructed using two colours or materials, the raised surface shall have a section that has 60% luminance contrast for a diameter of 25 ±1 mm tested as required below.

Compliance readily achievable and further details are to be provided prior to the issue of the Construction Certificate. Architect to provide details of the proposed tactiles to be used throughout.

Architect to note that tactiles are required to be provided at the bottom of the basement stairs.





Glazing on an accessway

All frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line.

The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level.

Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.

7.0 Services and Equipment

The following is a status of the services and equipment required to be provided to the building.

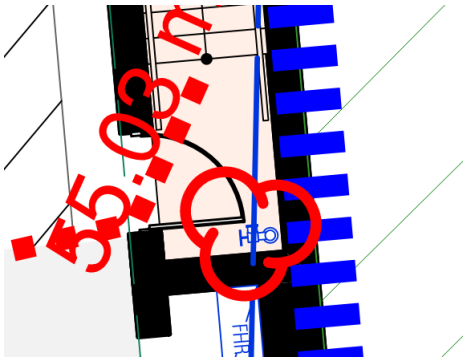
Fire Hydrants

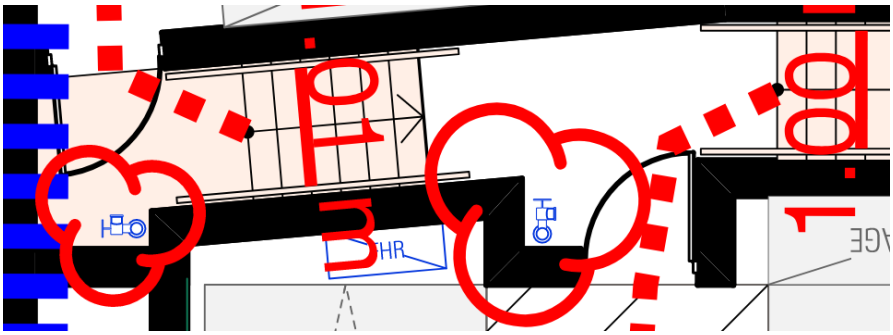
Fire hydrant coverage in accordance with BCA Clause E1.3 and AS2419.1 2005 must be provided to the building as the floor area is greater than 500m2.

Where internal fire hydrants are provided, they must serve only the storey on which they are located except that a sole-occupancy unit in a Class 2 building may be served by a single fire hydrant located at the level of egress from that sole-occupancy unit.

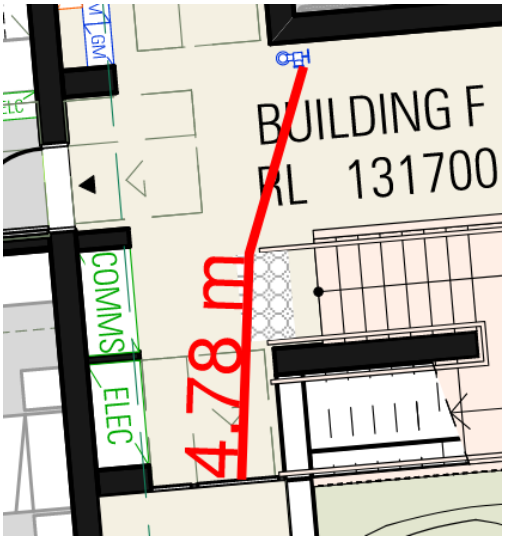
All points on a floor shall be within reach of a 10 m hose stream issuing from a nozzle at the end of a 30m hose length. The hose is required to extend a minimum 1m into the area that the hose reel is providing coverage to. Where non-fire-isolated exits are provided, the fire hydrant shall be located within 4m of the required exit.

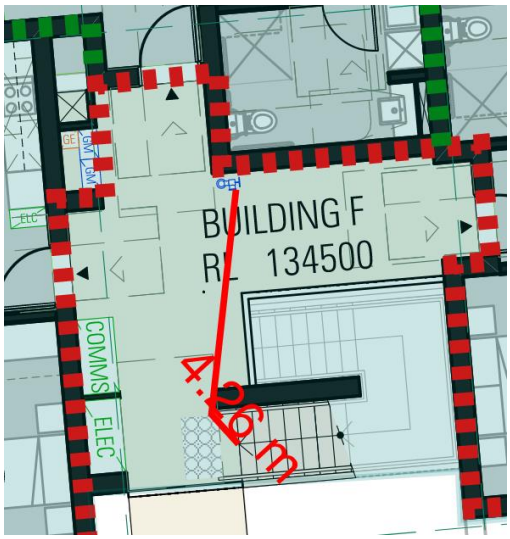
Architect to note and amend the plans to show the internal hydrant points to be outside the non-fire isolated stairs and within 4m of the exit within the basement level.





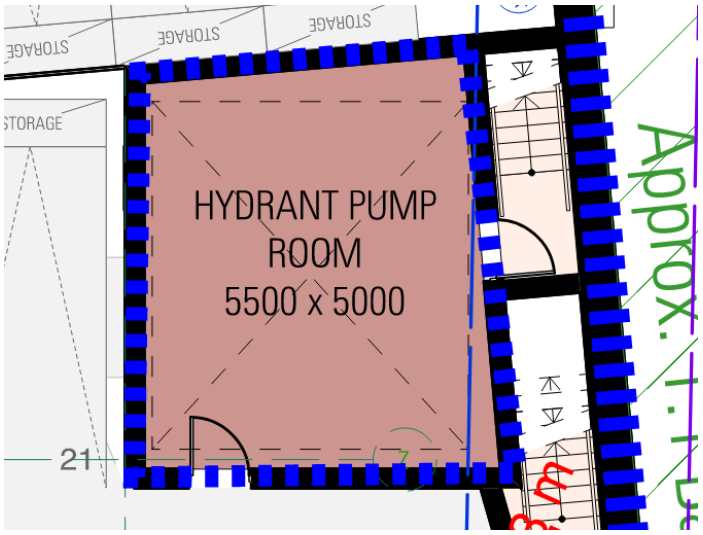
Architect to note the internal hydrant serving Building F on ground floor and Level 1 is not within 4m of the required exit. Note the required exit on the Ground floor point is the door providing egress to open space. Please amend the plans to comply.





Fire hydrant pumprooms located within a building shall have –
(a) A door opening to a road or open space, or a door opening to a fire-isolated passage or stair which leads to a road or open space; and
(b) Except where the building is sprinkler protected in accordance with AS2118.1, enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classification served by the fire hydrant system.

The hydrant pump room does not open into a fire-isolated stair, not does it open out to open space. Architect to note the non-compliances and amend the plans to comply. Where redesign is not possible, a fire engineered performance solution may be considered.



Fire brigade booster assemblies shall be located so that they meet the following requirements:
(a) They are readily accessible to firefighters
(b) They are operable by fire brigade pumping appliances located within 8m
(c) If within, or affixed to, the external wall of the building, the booster shall be –
    (i) Within sight of the main entrance to the building; and

(ii) Separated from the main building by construction with a fire resistance rating of not less than 2m each side of and 3m above the upper hose connections in the booster assembly

(d) If remote from the building, the booster shall be –
(i) At the boundary of the site and within site of the main entrance of the building;
(ii) Adjacent to the principal vehicular access to the site; and
(iii) Located not less than 10m from the external wall of any building served.

Compliance readily achievable. Fire Services Consultant to note and provide details of the proposed location of the booster assembly prior to the issue of the Construction Certificate.

Fire Hose-Reels

Fire hose-reels coverage in accordance with the BCA Clause E1.4 and AS 2441-2005 must be provided to the ground floor and basement carpark levels, they are not required to the apartment levels.

Fire hose reels must be provided to serve the whole building where one or more internal fire hydrants are installed or any fire compartment with a floor area greater than 500m^2.

Fire hose reels must be provided to serve only the storey they are located. In achieving system coverage, fire hose reels must be located adjacent to the internal fire hydrant. Fire hose reels must also be located within 4m of the exit and located so that they will not need to pass through doorways fitted with fire and smoke doors.

Architect and fire services consultant to note the above requirements. Currently the fire hose reels are not located adjacent to the internal fire hydrants required to provide coverage to the basement carpark.

Architect to note where the main communication and switch board room is required to be fire rated due to the equipment housed within it, additional fire reels will be required to be installed noting that fire reels cannot pass through doorways fitted with fire or smoke doors.

Sprinklers

A sprinkler system must be installed to any carpark that accommodates more than 40 vehicles. The carpark currently proposes 44 vehicle carspaces and will require to be sprinkler protected.

Sprinkler protection is not required to be provided to the Class 2 residential units as the rise of storeys does not exceed 4 or more and the effective height is not greater than 25m.

Sprinklers are to comply with the requirements of BCA Clause E1.5, Specification E1.5 and AS2118.1-2017. Architect and Fire Services Consultant to note that where a part of a building is not protected with sprinklers, the sprinklered and non-sprinklered areas are to be fire separated with a wall or floor of 120/120/120 fire rated construction. Architect to note and provide details on how this is proposed.

A minimum clear space of 500mm shall be maintained between the sprinkler heads and the storage cages on the basement level. Architect and Fire Services Consultant to note and ensure that 500mm clear unobstructed space is maintained to all storage cages.

Portable Fire Extinguishers

Fire extinguishers in accordance with BCA Clause E1.6 and AS 2444 2001 must be provided to the building.

Portable fire extinguishers that are required to be provided in a Class 2 building must be—
(i) an ABE type fire extinguisher; and
(ii) a minimum size of 2.5 kg; and
(iii) distributed outside a sole-occupancy unit—
(A) to serve only the storey at which they are located; and
(B) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10m.

Compliance readily achievable and to be further documented as the design progresses. Fire Services Consultant to note and provide details for further assessment prior to the issue of the Construction Certificate.

Smoke Hazard Management – Smoke Detection and Alarm System

An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must be designed and installed to operate as a smoke control system in accordance with AS 1668.1 or:

- Incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and
- Be arranged such that air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS1670.1

For the purposes of this provision, each sole-occupancy unit in a Class 2 building is treated as a separate fire compartment

Compliance readily achievable and to be documented in the next phase of design documentation. Mechanical Engineer to note where proposed and provide further details including design certification prior to the issue of the Construction Certificate.

The building must be provided with an automatic smoke detection and alarm system complying with one of the following:

- A smoke detection system complying with AS1670.1 2015 through the whole building; or
- A combination of a smoke alarm system complying with AS3786 1993 within apartments and a smoke detection system complying with As1670.1 2015 in areas not within the apartments.

Compliance readily achievable and to be further documented as the design progresses. Fire Services Consultant to confirm the proposed smoke detection system for the apartment levels.

Smoke Hazard Management – Basement Carpark

If the basement is provided with a mechanical ventilation system in accordance with AS 1668.2 2012 it must comply with clause 5.5 of AS/NZS 1668.1 2015 except that fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated.

Passenger lifts

The lifts are to be accessible and comply with the requirements of AS1735.12 1999 and BCA Clause E3.6.

All lifts which travel not more than 12m must have a lift floor dimensions of not less than 1100mm wide x 1400mm deep. Stretcher facilities are not required to be provided to the lifts.

Handrails complying with AS1735.12 1999 must be provided to both lifts.

All lift doors must have a clear opening width of not less than 900mm.

Any passenger lift must not rely on a constant pressure device for its operation if the lift car is fully enclosed.

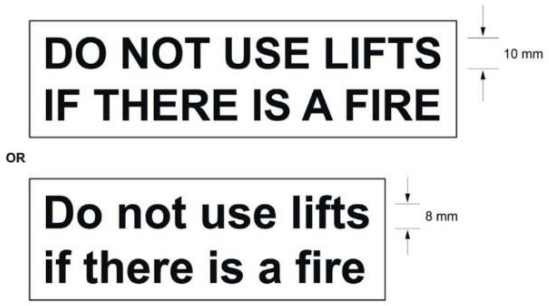
All lifts must have a passenger protection system, lighting and lift car and landing control buttons that comply with AS1735.12 1999.

All lifts serving more than 2 levels must be provided with:

- automatic audible information within the lift car to identify the level each time the car stops; and
- audible and visual indication at each lift landing to indicate the arrival of the lift car; and
- audible information and audible indication *required* by (a) and (b) is to be provided in a range of between 20–80 dB(A) at a maximum frequency of 1 500 Hz

Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received must be provided to all lifts.

Warning signs must be displayed where it can be readily seen near every passenger lift complying with Figure E3.3 as shown below.



Compliance readily achievable. Vertical Transportation Consultant to note and provide further lift drawings for assessment prior to the issue of the CC. Design Certification is also required prior to the issue of the Construction Certificate.

Emergency lighting

Emergency lighting is to be provided –

- In every storey of a Class 7 building where the storey has a floor area more than 300m^2 –
  - In every passageway, corridor, hallway or the like that forms the path of travel to an exit
  - In any room having a floor area more than 100m^2 that does not open to a corridor or space that has emergency lighting or to a road or open space
  - In any room having a floor are more than 300m^2
- In every passageway, corridor, hallway, or the like, having a length of more than 6 m from the entrance doorway of any sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building to the nearest doorway opening directly to a road or open space
- In every required non fire isolated stairway

Emergency lighting in accordance with the BCA Clause E4.2 and AS 2293.1 2005 must be provided to the building.

Compliance readily achievable and to be detailed as the design progresses. Electrical Engineer to note and provide details of the locations of all emergency lighting and exit signage for further assessment. Design Certification to also be provided prior to the issue of the Construction Certificate.

Exit signs

An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each—
(a) door providing direct egress from a storey to—
  (i) an enclosed stairway, passageway or ramp serving as a required exit; and
(b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and
(c) horizontal exit; and
(d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2.

Where an exit sign is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.

Note that exits signs do not apply to a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the exit or balcony with the word “EXIT” in capital letters 25 mm high in a colour contrasting with that of the background or by some other suitable method. Additionally, exit signs are not required at the entrance door of a sole-occupancy unit in a Class 2 building.

Compliance readily achievable and to be detailed as the design progresses. Electrical Engineer to note and provide details of the locations of all emergency lighting and exit signage for further assessment. Design Certification to also be provided prior to the issue of the Construction Certificate.

8.0 Health and Amenity

Damp & weatherproofing

A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause –
(a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and
(b) Undue dampness or deterioration of building elements

The proposed external walls are required to comply with BCA Performance Requirement FP1.4. Where a cladding is proposed it is required to have a CodeMark Certificate of Conformity confirming compliance to BCA FP1.4.

Architect to note and provide copies of all CodeMark Certificates for review prior to the issue of the relevant Construction Certificate.

Stormwater drainage

All new stormwater drainage is required to comply with AS/NZS 3500.3 2015. Compliance readily achievable – Architect and Service Engineers to note and verify the design complies and provide further details prior to the issue of the relevant Construction Certificate.

External above ground membranes

Waterproofing membranes for external above ground use must comply with AS 4654.1 and AS 4654.2.

Roof coverings

All new roofs are required to be covered with—
(a) concrete roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or
(b) terracotta roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050 2002; or
(c) cellulose cement corrugated sheeting complying with AS/NZS 2908.1 and installed in accordance with AS/NZS 1562.2; or
(d) metal sheet roofing complying with AS 1562.1; or
(e) plastic sheet roofing designed and installed in accordance with AS/NZS 4256 Parts 1, 2, 3 and 5 and AS/NZS 1562.3; or
(f) asphalt shingles complying with ASTM D3018-90 1994, Class A.

Compliance readily achievable and to be detailed as the design progresses. Architect and Structural Engineer to note and verify compliance with the design prior to the issue of the relevant Construction Certificate.

Sarking

Sarking-type material used for weatherproofing of roofs and walls must comply with AS/NZS 4200.1 and AS 4200.2.

Compliance readily achievable and to be further detailed as the design progresses. Architect to note and provide further details, noting the non-combustibility requirements of BCA Clause C1.9 for sarking materials within the external walls.

Waterproofing of wet areas

Building elements in bathroom or shower room, a sink compartment, a laundry or sanitary compartment must—
(i) be *water resistant* or *waterproof* in accordance with BCA Table F1.7; and
(ii) comply with AS 3740 2010.

Compliance readily achievable and to be further documented as the design progresses. Architect to note and verify design compliance.

Damp-proofing

Moisture from the ground must be prevented from reaching—
(i) the lowest floor timbers and the walls above the lowest floor joists; and
(ii) the walls above the damp-proof course; and
(iii) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.

Where a damp-proof course is provided, it must consist of—
(i) a material that complies with AS/NZS 2904 1995; or
(ii) impervious sheet material in accordance with AS 3660.1 2000 or 2014.

Compliance readily achievable and to be further documented as the design progresses. Architect to note and verify design compliance.

Damp-proofing of floors on the ground

If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870 2011, except damp-proofing need not be provided if—
(a) weatherproofing is not *required*; or
(b) the floor is the base of a stair, lift or similar *shaft* which is adequately drained by gravitation or mechanical means.

Compliance readily achievable and to be further documented as the design progresses. Architect to note and verify design compliance.

Floor wastes

The floor of each bathroom and laundry must be graded to permit drainage to a floor waste.

Compliance readily achievable and to be further documented as the design progresses. Architect to note and verify design compliance.

Glazed assemblies

The following glazed assemblies in an external wall, must comply with AS 2047 2014 requirements for resistance to water penetration:

- Windows.
- Sliding and swinging glazed doors with a frame, including french and bi-fold doors with a frame.
- Adjustable louvres.
- Window walls with one piece framing

Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955

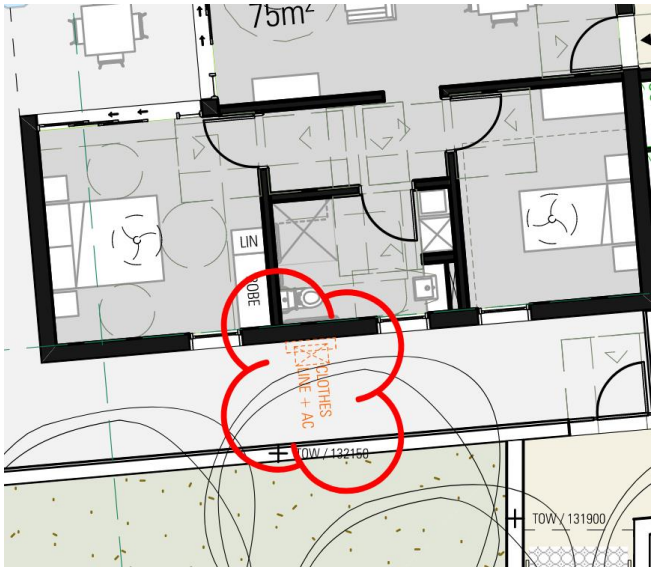
Compliance readily achievable and to be detailed as the design progresses. Architect and Façade Engineer to note the requirements and verify the design complies. Note, Certification and test reports for the building will be required to be provided upon completion of the design.

Sanitary and other facilities in residential buildings

Each apartment must be provided with the following facilities:

- a kitchen sink and facilities for the preparation and cooking of food,
- a bath or shower,
- a closet pan and washbasin,
- clothes washing facilities, comprising a washtub and space for a washing machine,
- clothes drying facilities comprising clothesline or hoist with not less than 7.5 m of line or space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facilities. A separate laundry for each 4 apartments can also be provided in lieu of individual facilities. Note: a kitchen sink or washbasin cannot be considered as a laundry washtub.

Compliance readily achievable. Architect to verify design compliance and provide details of the proposed clothesline system to validate compliance with the requirements of this clause.

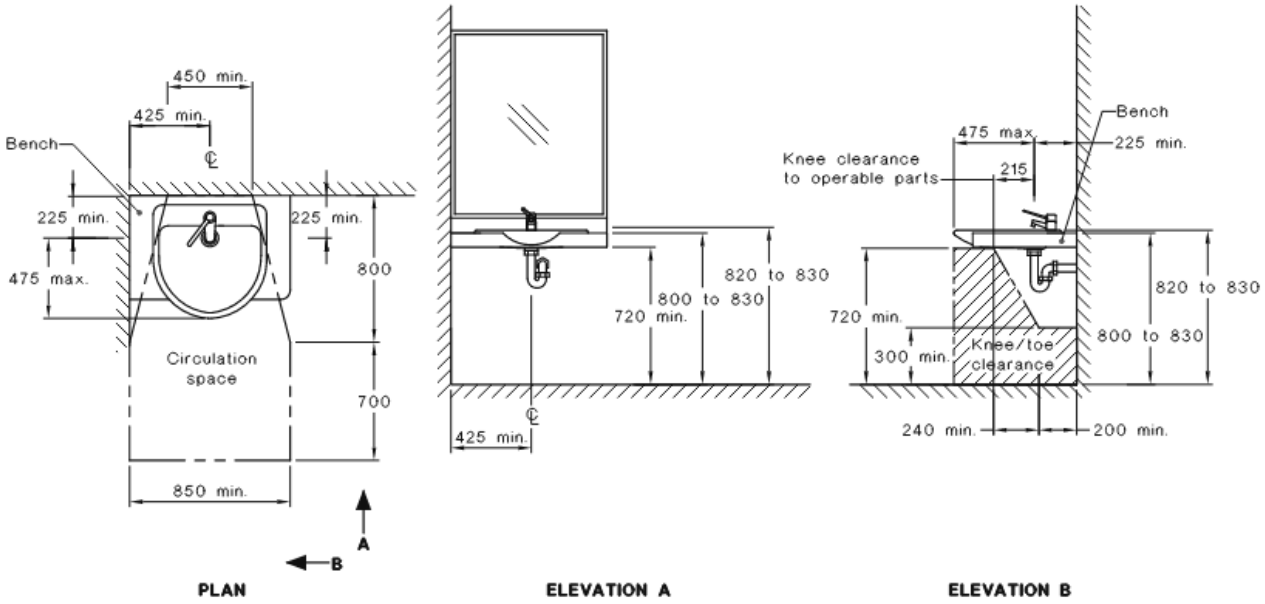


Accessible sole occupancy units

Accessible sole occupancy units shall have the following characteristics:

- The projection of the washbasin from the wall shall be a minimum 225 and the position of taps, bowl and drain outlet shall be determined in accordance with Figure 45 as shown below.
- Water supply pipes and waste outlet pipes shall not encroach on the required clear space under the washbasin
- Shelf space shall be provided adjacent to the washbasin in one of the following ways:
    - As a vanity top—
        - at a height of 800 mm to 830 mm above the floor;
        - with a minimum width of 120 mm beside the basin;
        - with a minimum depth of 300 mm from the front to the rear wall; and
        - with no encroachment into any knee and toe clearance space for a minimum width of 850 mm centred on the basin.
    - As a separate fixture—
        - within any circulation space at a height of 900 mm to 1000 mm with a minimum underside clearance of 850 mm for a width of 120 mm to 150 mm and length of 300 mm to 400 mm; and
        - external to all circulation spaces at a height of 800 mm to 1000 mm with a minimum width of 120 mm and minimum length of 400 mm.

Compliance readily achievable and to be detailed as the design develops. Architect to note the abovementioned requirements and provide details for further assessment prior to the issue of the relevant Construction Certificate.



Room Sizes

The room heights within all apartments shall be a minimum of 2.7m in accordance with the State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development.

Architect to note requirements for the required room heights within apartments noting that any mechanical or services bulkheads impeding within this height will note meet the requirements above. Where any mechanical or services bulkheads reduce the required ceiling point at any point, the complex will not comply with the requirements of SEPP 65.

> Proposed ceiling heights are 2.7m in habitable rooms and 2.4m in non-habitable rooms, with an overall floor-to-floor height of 3.1m. All living rooms and bedrooms will have ceiling fans for cooling and heat distribution.

All areas within the other parts of the building (i.e. the basement carpark) are required to have a ceiling height of at least 2.4m. Corridors, passageways, bathrooms and storerooms are required to have a minimum height of 2.1m. Architect to note any additional requirements for head heights for loading bays where provided in the carpark.

Natural Light

All habitable rooms in the apartment are required to be provided with natural light, these rooms include the bedrooms, the living room, study, dining room and kitchen.

The natural light must come from window and door openings amounting to at least 10% of the floor area of the room.

The windows providing the natural lighting must be open to the sky or face a court or other space open to the sky or an open verandah, carport or the like.

Architect to provide window details providing details of the openable area for ventilation for review prior to the issue of the relevant Construction Certificate.

Artificial light

All areas not provided with natural light must be provided with artificial lighting complying with AS/NZS 1680.0 2009. Compliance readily achievable and to be detailed in the next phase of design. Electrical Engineer to note and provide plans and design certification prior to the issue of the relevant Construction Certificate.

Ventilation

All habitable rooms (eg bedrooms, living room, dining rooms, studies etc) and other areas of the building occupied by a person for any purpose must be provided with natural ventilation complying with BCA Clause F4.6 and F4.7 or mechanical ventilation complying with AS 1668.2 2012.

Note that if ventilation is provided by operable windows and their openings are restricted to comply with the balustrade provisions the amount of air that they provided should be calculated based on the reduced size of the openings.

Compliance readily achievable and further details are to be provided in the next phase of design. Architect to note and provide details on the windows noting the openable area of each window to further calculate the natural ventilation provided into each room.

Where a mechanical ventilation system is proposed to the apartments, Mechanical Engineer to provide further details and design certification prior to the issue of the relevant Construction Certificate.

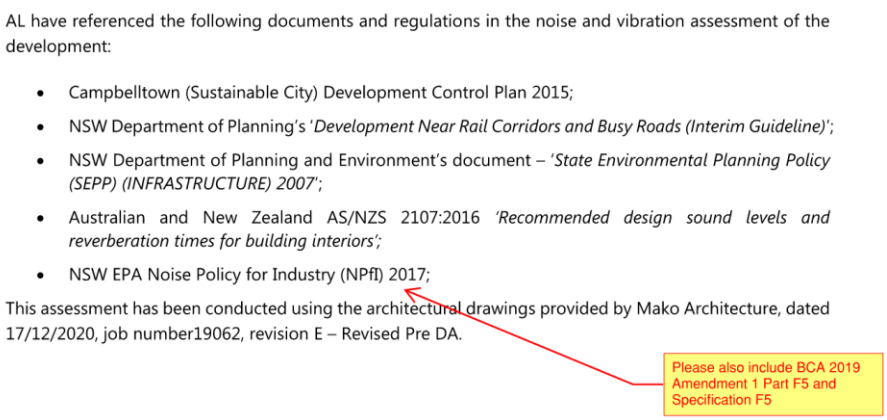
Carpark Ventilation

The carpark must have a system of mechanical ventilation complying with AS 1668.2 2012. Compliance readily achievable and to be further detailed as the design progresses. Mechanical Engineer to note and provide further details of the mechanical design and Design Certification verifying compliance prior to the issue of the relevant Construction Certificate.

Sound transmission

All walls, floors and services must comply with Part F5 and Specification F5.2 of the BCA.

Compliance readily achievable and to be further detailed as the design progresses. The Acoustic Consultants Report currently does not reference the applicable requirements of The Building Code of Australia 2019 Amendment 1 as part of the report and will need to be updated to verify compliance with the sound transmission requirements outlined in BCA Part F5 and Specification F5. Design Certification is required to be provided in conjunction with the Acoustic Report prior to the issue of the relevant Construction Certificate.



9.0 Energy Efficiency

All approved BASIX Certificate commitments made at the DA stage are required to be checked at the CC stage.

Note that the legislation states that the BASIX Certificate to be used for the Construction Certificate has to be issued no more than 3 months prior to the date of the Construction Certificate. The BASIX Certificate for the DA will need to be redated and reissued if the Construction Certificate.

The ground floor is required to comply with the energy efficiency requirements of Section J of the Building Code of Australia.

Building Fabric

If the ground floor is provided with air conditioning then the walls, floor and roof must comply with the requirements of Part J2 of the Building Code of Australia 2019 Amendment 1. Provide the Section J / BASIX report for review.

External Glazing

If the ground floor is provided with air conditioning then the external windows must comply with the requirements of Part J2 of the Building Code of Australia 2019 Amendment 1. Provide the Section J / BASIX report for review.

Building Sealing

If the ground floor is provided with air conditioning then the openable external windows and doors must be provided with a seal and an airlock or a self closing device. Provide the Section J / BASIX report for review.

Air-conditioning and ventilation system

Any mechanical air conditioning system or gas heater installed in the buildings must comply with the requirements of Part J5 of the Building Code of Australia 2019 Amendment 1.

The BCA definition of an air conditioning system includes any service (including a gas heater) that actively heats a space.

Provide the Section J / BASIX report for review.

Artificial Lighting and Power

All lighting installed in the buildings must comply with the requirements of Part J6 of the Building Code of Australia 2019 Amendment 1. Provide the Section J / BASIX report for review.

10.0 Conclusion

The building's design details provided to date has been assessed in respect to the deemed to satisfy provisions of the Building Code of Australia 2019 Amendment 1 Parts C, D, E and F excluding Part F5 sound transmission and insulation.

The design is at a point where BCA compliance has been checked and the development as designed is readily capable of meeting the requirements of the BCA 2019 Amendment 1 and its referenced standards at Construction Certificate stage.

APPENDIX A – DRAWINGS REVIEWED

Architectural drawings prepared by Mako Architecture Pty Ltd

Drawing number, title, revision	Drawing number, title, revision
A-0000 REV. G – COVER SHEET	A-2000 REV. H – BASMENT PLAN
A-2100 REV. K – GROUND FLOOR PLAN	A-2101 REV. I – FIRST FLOOR PLAN
A-2102 REV. I – SECOND FLOOR PLAN	A-2103 REV. H – ROOF PLAN
A-3100 REV. G – SECTION 1	A-3101 REV. G – SECTION 2
A-3200 REV. G – WEST ELEVATION – BUILDINGS A/B/C	A-3201 REV. G – WEST ELEVATION – BUILDINGS D/E/F
A-3202 REV. G – NORTH ELEVATION	A-3203 REV. G – EAST ELEVATION – BUILDINGS D/E/F
A-3204 REV. G – EAST ELEVATION – BUILDINGS A/B/C	A-3205 REV. G – SOUTH ELEVATION
A-3206 REV. B – COURTYARD ENTRY ELEVATION	A-5200 REV. A – STREET SECTION
A-7001 REV. B – PHOTOMONTAGE 01	A-7002 REV. B – PHOTOMONTAGE 02
A-7003 REV. B – PHOTOMONTAGE 03	A-7004 REV. B – PHOTOMONTAGE 04
A-7100 REV. C – EXTERNAL MATERIALS AND FINISHES	A-8200 REV. B – VIEW FROM SUN ANALYSIS

Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955

APPENDIX B – TYPE A CONSTRUCTION REQUIREMENTS

Building Element	FRL Required for Class 2	FRL Required for Class 7a & 9b
External wall (including any column and other building element incorporated therein) or other external building element, where the distance from any fire source feature to which it is exposed is -		
For *loadbearing* parts		
Less than 1.5m	90/90/90	120/120/120
1.5 to less than 3m	90/60/60	120/90/90
3m or more	90/60/30	120/60/30
For *non-loadbearing* parts		
Less than 1.5m	-/90/90	-/120/120
1.5 to less than 3m	-/60/60	-/90/90
3m or more	-/-/-	-/-/-
External column not incorporated in an external wall -		
For loadbearing columns	90/-/-	120/-/-
For non-loadbearing columns	-/-/-	-/-/-
Common wall and fire walls	90/90/90	120/120/120
Internal walls		
Fire resisting lift and stair shafts		
Loadbearing	90/90/90	120/120/120
Non-loadbearing	-/90/90	-/120/120
Bounding *public corridors*, public lobbies and the like		
Loadbearing	90/90/90	120/-/-
Non-loadbearing	-/60/60	-/-/-
Between or bounding *sole-occupancy units*		
Loadbearing	90/90/90	120/-/-
Non-loadbearing	-/60/60	-/-/-
Ventilation, pipe, garbage, and like shafts not used for the discharge of hot products of combustion		
Loadbearing	90/90/90	120/90/90
Non-loadbearing	-/90/90	-/90/90
Other loadbearing internal walls, internal beams, Trusses and columns	90/-/-	120/-/-
Floors	90/90/90	120/120/120
Roofs	90/60/30	120/60/30

Address: Suite 102, 12 Mount Street, North Sydney NSW 2060 | Email: admin@metrobc.com.au | Phone: (02) 9692 8477 | Fax: (02) 8209 4955