




## **FIRE SAFETY STRATEGY**

**182-198 Victoria Road & 28-30 Faversham Street  
Marrickville NSW 2204**

**Report Number: 17120-R1-V6  
Date: 11 November 2019**

**Client:  
Toga Wicks Park Developments Pty Ltd  
Level 5, 45 Jones Street  
Ultimo NSW 2007**

## AUTHORISATION

Version	Comment / reason for Issue	Issue date	Prepared by*
6	Revised issue with a minor change for revised DA submission.	11.11.19	 Peter Gardner C10 – Accredited Certifier – Fire Safety Engineering Compliance, BPB, Accreditation No. BPB0131

## REVISION HISTORY

Version	Comment / reason for Issue	Issue date	Prepared by*
1	Initial issue for review.	8.2.19	Peter Gardner
2	Revised issue for DA submission.	12.2.19	Peter Gardner
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4	Revised issue for revised DA submission.	28.10.19	Peter Gardner
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\* For and on behalf of PGA Pty Ltd.

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## EXECUTIVE SUMMARY

PGA Pty Ltd has been engaged by Toga Wicks Park Developments Pty Ltd to undertake a fire engineering analysis comprising fire engineering Performance Solutions in relation to the proposed development. This report comprises the fire safety strategy which provides initial fire engineering advice which will be further developed in the future fire engineering stages of the project comprising the Fire Engineering Brief Questionnaire (FEBQ) and Fire Engineering Report (FER).

The Performance Solutions incorporate the following matters in relation to the proposed mixed use development located at 182-198 Victoria Road & 28-30 Faversham Street, Marrickville NSW 2204:

1. Drencher-protected glazing to the fire wall separating the basement carpark from the ground floor.
2. Non-fire rating of the non-loadbearing external walls and non-protection of openings in the external walls to the eastern elevation located within 3m of the rear boundary.
3. Reduced Fire Resistance Levels (FRLs) of the building elements to the retail areas to the ground floor of 2 hours in lieu of 3 hours.
4. One exit provided to the following parts of the building in lieu of 2 exits:-
  - a) Some ground floor retail tenancies.
  - b) Ground floor residential lobbies.
  - c) Ground floor plant room.
  - d) Building 1.
  - e) Building 2.
5. The egress from the ground floor Retail 5 south exit door is not to open space as egress is to a covered colonnade in which travel to complying open space is approximately 26m.
6. The discharge of some exits involves travel via the adjoining property to the east in lieu of discharging to open space on the allotment.
7. Residential exit travel distances to the following parts of the building which are more than 6m to an exit and more than 45m apart:-
  - a) Building 1, Level 1 to 5 – Unit entry doors up to 7.5m to an exit.
  - b) Building 2, Level 1 to 5 – Unit entry doors up to 7.9m to an exit.
  - c) Building 4, Level 1 to 11 – Unit entry doors up to 8.0m to a point of choice.
  - d) Building 5, Level 1 to 11 – Unit entry doors up to 8.0m to a point of choice.
  - e) Podium, Level 1 – Up to 64m apart, in lieu of 45m apart.
8. Residential distances between alternative exits to the following parts of the building which are less than 9m apart:-
  - a) Building 4, Level 1 to 11 – Distance between alternative exits is 7.4m.
  - b) Building 5, Level 1 to 11 – Distance between alternative exits is 4.7m.
9. Carpark exit travel distances of up to 60m to an exit from Basement 01 and Basement 02, in lieu of 40m, and up to 102m apart from Basement 01 and 02, in lieu of 60m apart.
10. Retail exit travel distances of more than 40m to an exit and more than 60m apart from the large retail unit to the ground floor.
11. The discharge points of the fire-isolated stairways serving the building to the ground floor as follows:-
  - a) Building 2, FS02 – The distance to open space is 7.7m in lieu of 6m.
  - b) Building 5, FS05A – The distance to open space is 7.5m in lieu of 6m.

- c) Non-fire rating of some of the non-loadbearing external walls and non-protection of openings in the external walls located adjacent to the discharge points of some of the fire-isolated stairways serving the building to the ground floor.
  - 12. Perforated gates / roller shutters provided to the 3 main exits serving the mall to the ground floor and the operation of the automatic sliding doors from the travellers to Basement 01, based on the provision of a green push button connected to a battery backup.
  - 13. Fire hydrant system design standard utilising AS 2419.1-2017 in lieu of AS 2419.1-2005 and a possible extended distance from the boosters to a hardstand area of more than 10m.
  - 14. The fire control centre within Lobby 1 is located with a vertical rise of more than 300mm above the street.
  - 15. Natural smoke ventilation system provided to the mall in lieu of a smoke exhaust system.
  - 16. Non-provision of stair pressurisation to the fire-isolated stairways serving the basement carpark.
- The recommendations of the fire safety strategy are detailed in Section 4 "Fire Safety Strategy".

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## **1 INTRODUCTION**

### **1.1 PROJECT**

The project relates to a proposed 12 storey mixed use development.

### **1.2 CLIENT**

Toga Wicks Park Developments Pty Ltd, Level 5, 45 Jones Street, Ultimo NSW 2007.

### **1.3 PROJECT ADDRESS**

182-198 Victoria Road & 28-30 Faversham Street, Marrickville NSW 2204.

### **1.4 DESCRIPTION OF WORK**

PGA Pty Ltd has been engaged to undertake a fire engineering analysis comprising fire engineering Performance Solutions in relation to the proposed development. This report comprises the fire safety strategy which provides initial fire engineering advice which will be further developed in the future fire engineering stages of the project comprising the Fire Engineering Brief Questionnaire (FEBQ) and Fire Engineering Report (FER).

### **1.5 SCOPE AND LIMITS OF REPORT**

Chris Michaels of City Plan Services is the Authority Having Jurisdiction for the purposes of considering application for Construction Certificates relating to the subject development in accordance with the relevant statutory provisions. In consideration of the DA design of the project, the matters described in this report were identified as varying from Deemed-to-Satisfy Provisions of the Building Code of Australia.

The client has requested that these issues be addressed in accordance with appropriate methodologies and procedures.

The analysis does not specifically consider arson (other than as a source of initial ignition), multiple simultaneous ignition sources, acts of terrorism, protection of property (other than adjoining property), business interruption or losses, or personal or moral obligations of the owner/occupier.

This report is limited to the fire safety provisions of the Building Code of Australia (Sections C, D and E) and does not consider amenity, health or non-fire related issues in the building.

This report is not a Compliance Certificate in accordance with Clause 144A of the Environmental Planning & Assessment Regulation 2000.

It should be noted that it is not possible to totally eradicate the risk from fire in, or from, a building.

### **1.6 REGULATORY FRAMEWORK**

The following legislation has been considered in the formulation of this report:

- (i) NSW Environmental Planning & Assessment Act, 1979.
- (ii) NSW Environmental Planning & Assessment Regulation, 2000.
- (iii) National Construction Code 2016, Amendment 1, Volume One, Building Code of Australia Class 2 to Class 9 Buildings, Australian Building Codes Board, Second edition, March 2018 (BCA).

### **1.7 REFERENCE TEXTS**

The following texts have been used as reference documents in the formulation of this report:

- (i) International Fire Engineering Guidelines (IFEG), Australian Building Codes Board, 2005.
- (ii) Guide to NCC Volume One 2016, Amendment 1, Building Code of Australia Class 2 to Class 9 Buildings, Australian Building Codes Board, Second edition, March 2018.

## 1.8

### INFORMATION CONSIDERED FOR REPORT

The following information has been considered in the formulation of this report:

1. Building Code of Australia Assessment Report prepared by City Plan Services, Revision 06, dated 11.11.19.
2. Architectural drawings prepared by Turner dated 11.11.19 as listed in Table 1.1.

**Table 1.1 – Referenced architectural drawings**

Plan Title	Drawing No	Revision	Date
Site and Context – Site analysis plan	A-DA-003	3	11/11/19
Site and Context - Demolition plan	A-DA-004	3	11/11/19
GA Plans - Basement 2	A-DA-008	3	11/11/19
GA Plans - Basement 1	A-DA-009	3	11/11/19
GA Plans – Ground Level	A-DA-010	5	11/11/19
GA Plans – Level 1	A-DA-011	3	11/11/19
GA Plans - Level 02	A-DA-012	4	11/11/19
GA Plans - Level 03	A-DA-013	4	11/11/19
GA Plans - Level 04	A-DA-014	4	11/11/19
GA Plans - Level 05	A-DA-015	4	11/11/19
GA Plans - Level 06	A-DA-016	4	11/11/19
GA Plans - Level 07	A-DA-017	4	11/11/19
GA Plans - Level 08	A-DA-018	4	11/11/19
GA Plans - Level 09	A-DA-019	4	11/11/19
GA Plans - Level 10	A-DA-020	4	11/11/19
GA Plans - Level 11	A-DA-021	4	11/11/19
GA Plans – Roof Level	A-DA-024	5	11/11/19
GA Elevations – North Elevation - Shareway	A-DA-050	3	11/11/19
GA Elevations – West Elevation – Victoria Road	A-DA-051	3	11/11/19
GA Elevations – South Elevation – Wicks Park	A-DA-052	3	11/11/19
GA Elevations – East Elevation – Through Site Link	A-DA-053	3	11/11/19
GA Sections – Section AA	A-DA-060	3	11/11/19
GA Sections – Section BB	A-DA-061	3	11/11/19
GA Sections – Section CC	A-DA-062	3	11/11/19
GA Sections – Section DD	A-DA-063	3	11/11/19
GA Sections – Section EE	A-DA-064	3	11/11/19
Adaptable Apartment Plans	A-DA-150	3	11/11/19
Adaptable Apartment Plans	A-DA-151	3	11/11/19
Adaptable Apartment Plans	A-DA-152	3	11/11/19
Adaptable Apartment Plans	A-DA-153	3	11/11/19
Adaptable Apartment Plans	A-DA-154	3	11/11/19
Adaptable Apartment Plans	A-DA-155	3	11/11/19
Adaptable Apartment Plans	A-DA-156	3	11/11/19
Adaptable Apartment Plans	A-DA-157	3	11/11/19
Adaptable Apartment Plans	A-DA-158	3	11/11/19

## 1.9 LEGISLATIVE REQUIREMENTS

For the proposed development works, compliance with the BCA is mandated by the Environmental Planning & Assessment Regulation 2000. As noted within the referenced BCA report, the relevant BCA edition for this project is 2016, Amendment 1.

Pursuant to BCA Clause A0.1, a Building Solution will comply with the BCA if it satisfies the Performance Requirements. Pursuant to BCA Clause A0.2, compliance with the Performance Requirements can only be achieved through one of the methods listed, being as follows:

- (a) Performance Solution; or*
- (b) Deemed-to-Satisfy Solution; or*
- (c) combination of (a) and (b).*

In relation to the above, it is intended that the overall method of BCA compliance for the subject development is based on Clause A0.2(c), comprising a combination of prescriptive-based and performance-based design.

For the assessment of the Performance Solutions, BCA Clause A0.3 stipulates that the assessment must be undertaken in accordance with one or more of the methods outlined in Clause A0.5, with BCA compliance only being achieved where the Assessment Methods have been satisfied:

- (a) A Performance Solution must—*
  - (i) comply with the Performance Requirements; or*
  - (ii) be at least equivalent to the Deemed-to-Satisfy Provisions, and be assessed according to one or more of the Assessment Methods.*
- (b) A Performance Solution will only comply with the NCC when the Assessment Methods used satisfactorily demonstrate compliance with the Performance Requirements.*

The various assessment methods listed in Clause A0.5 are:

- (a) Evidence to support that the use of a material or product, form of construction or design meets a Performance Requirement or a Deemed-to-Satisfy Provision as described in A2.2.*
- (b) Verification Methods such as—*
  - (i) the Verification Methods in the NCC; or*
  - (ii) such other Verification Methods as the appropriate authority accepts for determining compliance with the Performance Requirements.*
- (c) Expert Judgement.*
- (d) Comparison with the Deemed-to-Satisfy Provisions.*



## 2 PRINCIPAL BUILDING CHARACTERISTICS

### 2.1 LOCATION AND DESCRIPTION

The proposed development is located at 182-198 Victoria Road & 28-30 Faversham Street, Marrickville NSW 2204.

The project is for a new mixed use development inclusive of the following:

- Approximately 272 residential apartments which vary in height across the site with communal space to the podium roof top and the ground floor.
- Retail areas to the ground floor.
- A 2 level basement car park housing both retail and residential parking with associated ancillary services and amenities.

### 2.2 BCA DEEMED-TO-SATISFY PROVISION REFERENCE CRITERIA

Table 2.1 below outlines key classification criteria in accordance with the Building Code of Australia 2016 in relation to the building as advised by City Plan Services.

**Table 2.1 - BCA deemed-to-satisfy provision reference criteria**

BCA clause		Description or requirement
A1.1	Effective height	36.93m.
A3.2	Occupancy classification	Class 2 residential, Class 6 retail and Class 7a carpark.
C1.1	Minimum type of construction	Type A Construction.
C1.2	Rise in storeys	Rise in storeys of 12.
C2.2	Fire compartment floor area and volume	DtS compliant.
C2.3	Large isolated building	Not applicable.

### 3

#### FIRE ENGINEERING PERFORMANCE SOLUTIONS

The variations from the DtS Provisions of the BCA, as advised by City Plan Services, are to form the basis of the fire engineering analysis and are the subject of the proposed Performance Solutions. The proposed Performance Solutions are described below.

1. Drencher-protected glazing to the fire wall separating the basement carpark from the ground floor.
2. Non-fire rating of the non-loadbearing external walls and non-protection of openings in the external walls to the eastern elevation located within 3m of the rear boundary.
3. Reduced Fire Resistance Levels (FRLs) of the building elements to the retail areas to the ground floor of 2 hours in lieu of 3 hours.
4. One exit provided to the following parts of the building in lieu of 2 exits:-
  - a) Some ground floor retail tenancies.
  - b) Ground floor residential lobbies.
  - c) Ground floor plant room.
  - d) Building 1.
  - e) Building 2.
5. The egress from the ground floor Retail 5 south exit door is not to open space as egress is to a covered colonnade in which travel to complying open space is approximately 26m.
6. The discharge of some exits involves travel via the adjoining property to the east in lieu of discharging to open space on the allotment.
7. Residential exit travel distances to the following parts of the building which are more than 6m to an exit and more than 45m apart:-
  - a) Building 1, Level 1 to 5 – Unit entry doors up to 7.5m to an exit.
  - b) Building 2, Level 1 to 5 – Unit entry doors up to 7.9m to an exit.
  - c) Building 4, Level 1 to 11 – Unit entry doors up to 8.0m to a point of choice.
  - d) Building 5, Level 1 to 11 – Unit entry doors up to 8.0m to a point of choice.
  - e) Podium, Level 1 – Up to 83m apart, in lieu of 45m apart.
8. Residential distances between alternative exits to the following parts of the building which are less than 9m apart:-
  - a) Building 4, Level 1 to 11 – Distance between alternative exits is 7.4m.
  - b) Building 5, Level 1 to 11 – Distance between alternative exits is 4.7m.
9. Carpark exit travel distances of up to 60m to an exit from Basement 01 and Basement 02, in lieu of 40m, and up to 102m apart from Basement 01 and 02, in lieu of 60m apart.
10. Retail exit travel distances of more than 40m to an exit and more than 60m apart from the large retail unit to the ground floor.
11. The discharge points of the fire-isolated stairways serving the building to the ground floor as follows:-
  - a) Building 2, FS02 – The distance to open space is 7.7m in lieu of 6m.
  - b) Building 5, FS05A – The distance to open space is 7.5m in lieu of 6m.
  - c) Non-fire rating of some of the non-loadbearing external walls and non-protection of openings in the external walls located adjacent to the discharge points of some of the fire-isolated stairways serving the building to the ground floor.

12. Perforated gates / roller shutters provided to the 3 main exits serving the mall to the ground floor and the operation of the automatic sliding doors from the travellers to Basement 01, based on the provision of a green push button connected to a battery backup.
13. Fire hydrant system design standard utilising AS 2419.1-2017 in lieu of AS 2419.1-2005 and a possible extended distance from the boosters to a hardstand area of more than 10m.
14. The fire control centre within Lobby 1 is located with a vertical rise of more than 300mm above the street.
15. Natural smoke ventilation system provided to the mall in lieu of a smoke exhaust system.
16. Non-provision of stair pressurisation to the fire-isolated stairways serving the basement carpark.

#### 4 FIRE SAFETY STRATEGY

The fire safety strategy in relation to the proposed Performance Solutions detailed in section 3, which is the subject of this fire engineering assessment, is described below.

##### 4.1 CONSTRUCTION, FIRE RESISTANCE & COMPARTMENTATION

Table 4.1 summarises the fire resistance and compartmentation construction measures that are to be implemented as part of the proposed fire safety strategy.

**Table 4.1 – Proposed construction measures**

Item no.	Measure	Description of construction measure
1.	Compliance with BCA DtS Provisions	With the exception of the proposed Performance Solutions described within this document, the proposed development is to comply with the DtS Provisions of Section C of the BCA.
2.	Medium temperature smoke seals to doors	All residential sole-occupancy unit (SOU) entry doors within the building are to be fitted with medium-temperature smoke seals. The smoke seals are to be selected such that when fitted to a fire door in accordance with AS 6905–2007 and tested to AS 1530.7–2007, a single leaf smoke door achieves a maximum total leakage rate of 25 m <sup>3</sup> /h corrected to standard temperature and pressure, at a pressure differential of 25 Pa after more than 30 minutes exposure to 200°C (as per AS 6905–2007), based on the smoke seals being provided to the top and 2 sides of the doors, ie. not to the bottom of the doors.
3.	Easement	An easement is to be created on the subject property and the adjacent property to the east containing a requirement relating to the annual submission of a fire safety statement verifying that there is no building located within 6m of the eastern external walls of the subject building.

Item no.	Measure	Description of construction measure
4.	Drencher-protected glazing	<p>Drencher-protected glazing is to be provided to the fire wall separating the basement carpark from the ground floor.</p> <p>The drencher-protected glazing is to be provided in accordance with either (i) or (ii) below:</p> <ul style="list-style-type: none"> <li>(i) A proprietary system capable of allowing the glazing to remain in place without breakage for 120 minutes, such as the Tyco Model WS drencher system described in the Tyco Model WS data sheet dated May, 2014 (NB. although glass doors are not permitted by the Tyco specification, such glazing is considered acceptable subject to the doors being either self-closing or automatically-closing upon activation of a drencher or initiation of a general fire alarm); or</li> <li>(ii) An alternative design in accordance with the following requirements: <ul style="list-style-type: none"> <li>a) the glazing is to be toughened and have a thickness of at least 6 mm;</li> <li>b) horizontal framing elements (i.e. mullions) are not permitted to the sides of the glazing containing the drenchers as the flow of water may be obstructed;</li> <li>c) glazing construction is to extend to -/120/120 FRL walls;</li> <li>d) signage with lettering a minimum of 50 mm in height is to be provided on or adjacent to the glazed barrier stating the following or words to this effect: "No storage adjacent to glazing or fixing of items to glazing", to prevent the placement of either storage or furnishings adjacent to the glazing that may obstruct the flow of water;</li> <li>e) the glass door forming part of the protected barrier is to be either self-closing or automatically-closing upon activation of a drencher or initiation of a general fire alarm; and</li> <li>f) fixed glazing is to be supported by aluminium or steel framing elements and flexible seals that provide allowance for the expansion of the glass.</li> </ul> </li> </ul>

## 4.2

### EGRESS

Table 4.2 below summarises the egress measures that are to be implemented as part of the proposed fire safety strategy.

**Table 4.2 – Proposed egress measures**

Item no.	Measure	Description of egress measure
1.	Compliance with BCA DtS Provisions	With the exception of the proposed Performance Solutions described within this document, the proposed development is to comply with the DtS Provisions of Section D of the BCA.
2.	Exit stairs	The residential parts of the building are to be served by 8 fire-isolated exit stairways and the carpark parts of the building are to be served by 4 fire-isolated exit stairways.
3.	Doors to podium	The doors between the podium to Level 1 and the residential lobbies are to be provided with a green push button connected to a battery backup that open the door in an emergency and a sign is to be provided adjacent to the push button stating EMERGENCY EXIT.

Item no.	Measure	Description of egress measure
4.	Doors to mall and traveller	The perforated gates / roller shutters to the 3 main exits serving the mall to the ground floor are to remain open during retail trading hours and they are to be provided with a green push button connected to a battery backup that opens the shutter in an emergency and a sign is to be provided adjacent to the push button stating EMERGENCY EXIT. The automatic sliding doors from the travellers to Basement 01 are to be provided with a green push button connected to a battery backup that opens the doors in an emergency and a sign is to be provided adjacent to the push button stating EMERGENCY EXIT.
5.	Easement	An easement is to be created on the adjacent property to the east containing a requirement relating to maintaining the pedestrian egress routes over the allotment between the discharge of some exits serving the building and the street.

### 4.3

#### FIRE SERVICES & EQUIPMENT

Table 4.3 below summarises the fire protection systems that are to be provided as part of the proposed fire safety strategy for the development.

**Table 4.3 – Proposed fire protection systems**

Item no.	Measure	Description of fire protection system
1.	Compliance with BCA DTS Provisions	With the exception of the proposed Performance Solutions described within this document, the proposed development is to comply with the DTS Provisions of Section E of the BCA.
2.	Automatic fire suppression system	An automatic fire sprinkler system is to be provided throughout the building in accordance with Specification E1.5 of the BCA which includes compliance with AS 2118.1–2017 and including a Grade 1 water supply system. In addition, the sprinkler system is to comply with the following:- (i) Listed, quick-response sprinkler heads in accordance with AS 4118.1.1 are to be provided throughout all occupied areas – standard response sprinkler heads may be provided to plant rooms, back-of-house storage areas, any area classified as “high-hazard” by AS 2118.1, concealed spaces and the like. (ii) Flush / concealed sprinkler heads are not permitted within the retail or carpark areas. (iii) The sprinkler design in the carparking area is not to feature extended coverage sprinkler heads. (iv) The height of any storage within the carpark is to be restricted by horizontal and vertical mesh screens to maintain the minimum clear space below the sprinklers, which is 500mm clear below the deflectors to ensure the efficient operation of the sprinkler system.

Item no.	Measure	Description of fire protection system
3.	Drencher system	<p>A wall-wetting drencher system is to be provided to the drencher-protected glazing to the fire wall separating the basement carpark from the ground floor.</p> <p>The drencher system is to be provided in accordance with either (i) or (ii) below:</p> <ul style="list-style-type: none"> <li>(i) A proprietary, wall-wetting system capable of fully wetting the glazing with no dry spots, such as the Tyco Model WS drencher system described in the Tyco Model WS data sheet dated May 2014; or</li> <li>(ii) An alternative design that is capable of fully wetting the glazing with no dry spots in accordance with the following requirements: <ul style="list-style-type: none"> <li>a) the minimum drencher head flow and pressure is to meet the criteria nominated by the manufacturer's data sheet for the selected drencher;</li> <li>b) the drenchers are to be fed from the sprinkler system with the incoming flow and pressure to consider the operation of the drenchers to one side of the drencher-protected glazing and the sprinkler system operating concurrently;</li> <li>c) full coverage of the glazing is to be achieved by the suitable location of drenchers in consideration of the spray pattern of the heads described in the manufacturer's data sheet; and</li> <li>d) drenchers are to be closed-head and fast-response, with a temperature rating of not less than 30°C above the highest anticipated temperature condition but no higher than this in order to avoid unnecessary activation delay (this should generally be a maximum of 68°C).</li> </ul> </li> </ul>
4.	Fire hydrant system	<p>With the exception of the proposed Performance Solution described within this document, a fire hydrant system is to be provided in accordance with Clause E1.3 of the BCA and AS 2419.1–2017 and including a fire hydrant ring main.</p> <p>All couplings in the system are to be fitted with Storz hermaphrodite hose couplings manufactured in accordance with FRNSW Guide Sheet No. 4 – Fire brigade hose couplings.</p> <p>Fire hydrant block plans are to include the location of all main entrances and are to be provided to the following locations:-</p> <ul style="list-style-type: none"> <li>(i) Fire control centre containing the FIP.</li> <li>(ii) Sub FIPs.</li> <li>(iii) Fire brigade booster assembly.</li> <li>(iv) Fire pump room.</li> </ul>
5.	Fire hose reel system	<p>A fire hose reel system is to be provided to the non-residential parts of the building in accordance with Clause E1.4 of the BCA, which includes compliance with AS 2441–2005.</p>
6.	Portable fire extinguishers	<p>Portable fire extinguishers are to be provided in accordance with Clause E1.6 of the BCA and AS 2444–2001 which includes the following:-</p> <ul style="list-style-type: none"> <li>(i) an ABE type fire extinguisher; and</li> <li>(ii) a minimum size of 2.5 kg; and</li> <li>(iii) distributed outside a sole-occupancy unit — <ul style="list-style-type: none"> <li>(A) to serve only the storey at which they are located; and</li> <li>(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.</li> </ul> </li> </ul>
7.	Fire control centre	<p>With the exception of the proposed Performance Solution described within this document, a fire control centre is to be provided to the ground floor in accordance with Specification E1.8 of the BCA.</p>

Item no.	Measure	Description of fire protection system
8.	Automatic fire detection system	<p>An automatic fire detection and alarm system is to be provided throughout the building in accordance with Table E2.2a, Table E2.2b, and Specification E2.2a of the BCA.</p> <p>In addition, the detection system is to comply with the following:-</p> <ul style="list-style-type: none"> <li>(i) The system is to comply with Clause 5 of Specification E2.2a of the BCA and AS 1670.1 (extended spacing) within the mall and large retail unit to the ground floor.</li> <li>(ii) The system is to comply with AS 1670.1 within all residential lobbies / corridors to the building.</li> <li>(iii) A FIP is to be provided to the fire control centre to the ground floor.</li> <li>(iv) A sub FIP which will also contain the amplifiers for the SSISEP, is to be provided within the entry lobby of each tower.</li> <li>(v) Strobes externally mounted to indicate the building of alarm origin are to be provided adjacent to the entry lobby of each tower.</li> <li>(vi) Copies of the block plans are to be provided at each fire panel.</li> <li>(vii) The alarm signalling equipment is to have multiple inputs that designate the building of alarm origin, allowing the fire brigade to respond directly to the building where the alarm has originated.</li> <li>(viii) Emergency services information package and tactical fire plans are to be provided within the fire control centre in accordance with FRNSW guideline: <a href="https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/guidelines_E_SIP_and_TFP.pdf">https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/guidelines_E_SIP_and_TFP.pdf</a></li> </ul>
9.	Sound system and intercom system for emergency purposes (SSISEP)	A SSISEP is to be provided throughout the building in accordance with Clause E4.9 of the BCA, which includes compliance with AS 1670.4–2015.
10.	Natural smoke ventilation system	<p>A natural smoke ventilation system is to be provided to the mall to the ground floor comprising:-</p> <ul style="list-style-type: none"> <li>(i) A void to the roof of the mall providing permanent natural ventilation.</li> <li>(ii) Three main entries with perforated gates / roller shutters providing permanent natural ventilation.</li> </ul>
11.	Smoke exhaust system	A smoke exhaust system is to be provided to the large retail unit to the ground floor in accordance with Specification E2.2b of the BCA which includes compliance with AS/NZS 1668.1–2015.
12.	Stair pressurisation system	With the exception of the proposed Performance Solution described within this document, all fire-isolated exit stairways serving any storey above an effective height of 25 metres are to be provided with a stair pressurisation system in accordance with Table E2.2a of the BCA, which includes compliance with AS/NZS 1668.1–2015.
13.	Emergency lifts	Emergency lifts are to be provided in accordance with Clause E3.4 of the BCA.
14.	Emergency lighting	Emergency lighting is to be provided within the building in accordance with AS 2293.1–2005 to the locations nominated by Part E4 of the BCA.
15.	Exit signage	Exit signage is to be provided within the building in accordance with AS 2293.1–2005 to the locations nominated by Part E4 of the BCA.



## **5 CONCLUSION**

### **5.1 GENERAL**

This report comprises the fire safety strategy which provides initial fire engineering advice which will be further developed in the future fire engineering stages of the project comprising the Fire Engineering Brief Questionnaire (FEBQ) and Fire Engineering Report (FER).

In all other respects, the building is to comply with the prescriptive, fire-safety-related DtS provisions of the BCA.

The fire engineering Performance Solutions for the development as detailed in this report can be readily addressed and it is expected that the proposed development will readily achieve compliance with the relevant fire safety-related provisions of the Building Code of Australia 2016.

The proposed Performance Solutions will be subject to a staged engineering process involving a Fire Engineering Brief phase, where consultation will be required with the relevant stakeholders (including Fire and Rescue NSW) and a Fire Engineering Report phase, where the engineering assessment and calculations are to be undertaken to determine that the design meets the agreed fire safety objectives. Implementation of the final design will be subject to the approval of the Authorities Having Jurisdiction, which includes the Certifying Authority and Fire and Rescue NSW.

### **5.2 RECOMMENDED FIRE SAFETY STRATEGY**

A description of the proposed fire safety strategy for the development is outlined within Section 4 "Fire Safety Strategy".

### **5.3 ENGINEERING JUDGEMENT**

Engineering judgement has been used in the fire safety engineering analyses to determine and undertake appropriate methods to assess in qualitative terms the fire safety engineering issues relevant to this project.

## **6 VALIDITY, DISCLAIMER AND CONDITIONS OF USE**

This report is prepared for the proposed mixed use development located at 182-198 Victoria Road & 28-30 Faversham Street, Marrickville NSW 2204 and should not be applied to other buildings.

Any modifications or changes to the building, fire safety management system, or building usage from that described may invalidate the findings of this report. Should such changes occur, a re-assessment should be sought.

Arson has been shown statistically to contribute to fire. This report has addressed the incidence of minor forms of arson as a single ignition source; however, major arson involving accelerants and/or multiple ignition sources are beyond the scope of this analysis and therefore have been excluded from the report.

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