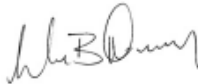



# Marrickville Metro

## BCA Assessment Report for Development Application – Concept Stage

REPORT 2012/1356 R1.2

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## **EXECUTIVE SUMMARY**

Marrickville Metro Shopping Centre is located at 34 Victoria Road, Marrickville. The existing shopping centre fronts Victoria Road to the north, Murray Street to the east and Smidmore Street to the south and is adjoined by single storey residential dwellings to the west.

AMP Capital Investors proposes to expand Marrickville Metro Shopping Centre to accommodate additional retail floor space, improved facilities and services, as well as enhance convenience and accessibility for the community.

The project involves the redevelopment of the industrial site at 13-55 Edinburgh Road to accommodate a new two level retail centre including car parking above.

## **TABLE OF CONTENTS**

<b>1.</b>	<b>INTRODUCTION</b>	<b>4</b>
<b>2.</b>	<b>PURPOSE</b>	<b>4</b>
<b>3.</b>	<b>SCOPE AND LIMITATIONS</b>	<b>4</b>
3.1.	SCOPE	4
3.2.	LIMITATIONS	4
<b>4.</b>	<b>STATUTORY FRAMEWORK</b>	<b>5</b>
4.1.	NEW WORK	5
<b>5.</b>	<b>DESCRIPTION OF PROPOSED DEVELOPMENT</b>	<b>5</b>
<b>6.</b>	<b>ASSESSMENT DATA SUMMARY</b>	<b>5</b>
6.1.	ASSUMPTIONS	5
6.2.	INTERPRETATIONS	5
6.3.	BUILDING CHARACTERISTICS	5
6.3.1.	CLASSIFICATION	5
6.3.2.	SUMMARY OF CONSTRUCTION DETERMINATION	6
6.4.	FLOOR AREAS AND VOLUMES	6
6.5.	NOMINATED FIRE COMPARTMENTS	6
6.6.	POPULATION AND REQUIRED EXIT WIDTH	6
<b>7.</b>	<b>BCA ASSESSMENT</b>	<b>7</b>
7.1.	SECTION B: STRUCTURE	7
7.2.	SECTION C: FIRE RESISTANCE	7
7.3.	SECTION D: ACCESS AND EGRESS	7
7.4.	SECTION E: SERVICES AND EQUIPMENT	8
7.5.	SECTION F: HEALTH AND AMENITY	8
7.6.	SECTION J: HEALTH AND AMENITY	9
<b>8.</b>	<b>CONCLUSION</b>	<b>9</b>
<b>9.</b>	<b>APPENDIX A – REFERENCED DOCUMENTATION</b>	<b>10</b>
<b>10.</b>	<b>APPENDIX B – STATUTORY FIRE SAFETY MEASURES</b>	<b>11</b>

## 1. INTRODUCTION

This report presents the findings of an assessment of the design of against the Deemed-to-Satisfy (DTS) provisions of the relevant sections of the Building Code of Australia (BCA).

## 2. PURPOSE

This report has been prepared on behalf of AMP Capital Investors to accompany an application to modify the existing Concept Plan Approval under Section 75W of the Environmental Planning & Assessment Act 1979. This application seeks to modify the existing Major Project Approval No. 09\_0191, relating to the Stage 1 development of the Marrickville Metro Shopping Centre.

Concept Plan Approval was granted on 19 March 2012 for:

*“...use of the existing building for retail premises and business premises, and expand the Marrickville Metro Shopping Centre including a first floor addition to the existing building at 34 Victoria Road, a new 2 level retail building at 13-55 Edinburgh Road and two levels of rooftop parking above each building.”*

The proposed modifications relate only to Stage 1 of the project involving the redevelopment of the existing industrial land south of Smidmore Street (13-55 Edinburgh Road) to create a two level free-standing retail addition to the shopping centre with roof top car parking.

The proposed modifications seek to refine the approved design, enhancing its design quality both internally and externally and its relationship with the public domain. There is no proposed increase in floor area arising from the proposed modifications and vehicle egress locations will remain unaltered. While the building design and façade composition will be amended, the overall height of the approved development will be marginally reduced in scale.

## 3. SCOPE AND LIMITATIONS

### 3.1. SCOPE

The scope of this assessment is limited to the design documentation referenced in Appendix A of this report.

### 3.2. LIMITATIONS

The following limitations apply to the assessment:

- The plans are assessed to the extent necessary to lodge planning approval. This means that the design has been assessed as able to comply with the BCA ie – the submitted plans are consistent with the BCA but certain design details may be not specified at this stage.
- Details in regard to access for people with disabilities have been assessed to the extent of the deemed-to-satisfy provisions of the BCA only. The assessment does not consider the requirements for people with disabilities under the provisions of the Disabilities Discrimination Act 1992.
- The assessment does not consider the requirements of legislation other than the nominated sections of the EP&A Act which might address building works such as OH&S, Construction Safety or the like.

## 4. STATUTORY FRAMEWORK

### 4.1. NEW WORK

Clause 145 of the Environmental Planning and Assessment Regulation 2000 (EPAR) requires that all new work comply with the current requirements of the BCA.

This means that all works proposed in the plans are required to comply but that existing features of an existing building need not comply with the BCA unless required to under other clauses of the legislation.

## 5. DESCRIPTION OF PROPOSED DEVELOPMENT

Marrickville Metro Shopping Centre is located at 34 Victoria Road, Marrickville. The existing shopping centre fronts Victoria Road to the north, Murray Street to the east and Smidmore Street to the south and is adjoined by single storey residential dwellings to the west.

The land at 13-55 Edinburgh Road is located to the south of Smidmore Street and is bounded by Edinburgh Road and Murray Street. This site is currently used as a warehouse with associated ground level car parking. The warehouse is to be demolished to allow the construction of the new 2 storey shopping centre.

The shopping centre is located within an established residential and industrial precinct surrounded by small lot residential housing to the north and west, and predominantly industrial land comprising larger allotments and larger building scales to the south and east.

## 6. ASSESSMENT DATA SUMMARY

The following basic assessment data has been drawn from the provisions of the BCA 2012.

### 6.1. ASSUMPTIONS

Assumptions made in the preparation of this report are listed below:

1. None made

### 6.2. INTERPRETATIONS

A number of issues within the BCA are recognised to be interpretive in nature. Where these issues are encountered, interpretations are made that are consistent with Standard Industry Practise and/or Steve Watson & Partners policy formulated in regard of each issue.

1. Population numbers and egress widths for the **retail portions (excluding loading docks)** of the buildings have been calculated based on the figures recommended in Project 6 "Fire Safety in Shopping Centres" prepared by the Fire Code Reform Centre.
2. Population numbers and egress width for the **carpark and loading dock portions** of the buildings have been calculated based upon table D1.13 of the BCA.

### 6.3. BUILDING CHARACTERISTICS

The following assessment data has been drawn from the provisions of the BCA.

#### 6.3.1. Classification

The significant spaces in the proposed design have been classified in accordance with the requirements of Clause A3.2 of the BCA and are summarised in the table below:

<i>Floor</i>	<i>Space</i>	<i>Classification</i>
Ground Level	Retail & Dock	Class 6
Level 1	Retail	Class 6

<b>Floor</b>	<b>Space</b>	<b>Classification</b>
Level 2	Carpark	Class 7a
Level 2A	Roof top Carpark	Class 7a

### 6.3.2. Summary of construction determination

The type of construction required for the proposed design is summarised in the table below.

Classification	Class 6 & 7a
Number of storeys contained	3 + 1 partially covered rooftop carpark
Rise in storeys	3 (To be assessed on a performance basis)
Type of construction required	Type B (Large Isolated)
Effective height	<25m

### 6.4. FLOOR AREAS AND VOLUMES

<b>Floor</b>	<b>Approx Area (m<sup>2</sup>)</b>	<b>Approx Volume (m<sup>3</sup>)</b>	<b>Comment</b>
Ground	8,140m <sup>2</sup>	Not determined	
Level 1	8,140m <sup>2</sup>	Not determined	
Level 2	7,058m <sup>2</sup>	Not determined	
Level 2A	7,003m <sup>2</sup>	Not determined	
Plant room over carpark	346m <sup>2</sup>	Not Determined	

### 6.5. NOMINATED FIRE COMPARTMENTS

<b>Compartment</b>	<b>Approx Area (m<sup>2</sup>)</b>	<b>Approx Volume (m<sup>3</sup>)</b>	<b>Comment</b>
Ground, Level 1 & 2	13,166m <sup>2</sup>	Not Determined	Large isolated building

### 6.6. POPULATION AND REQUIRED EXIT WIDTH

Relevant populations and exit widths for the building are set out below.

<b>Location</b>	<b>Use</b>	<b>Class</b>	<b>Approx Area (m<sup>2</sup>)</b>	<b>Density m<sup>2</sup>/person</b>	<b>Population</b>	<b>Total exit width required</b>	<b>Total exit width Provided</b>
Ground Floor	Dock	6	1,152m <sup>2</sup>	30m <sup>2</sup> /pp	39	1m	1m
	Super market Store	6	600m <sup>2</sup>	30m <sup>2</sup> /pp	20		
	Retail With street frontage	6	624m <sup>2</sup>	6m <sup>2</sup> /pp*	104	1m	1m
	Speciality Retail	6	2,437m <sup>2</sup>	6m <sup>2</sup> /pp*	407	5m	7m

Location	Use	Class	Approx Area (m <sup>2</sup> )	Density m <sup>2</sup> /person	Population	Total exit width required	Total exit width Provided
	Mall and Kiosk	6	1,991m <sup>2</sup>	10m <sup>2</sup> /pp*	199		
Level 1	Supermarket	6	3,500m <sup>2</sup>	10m <sup>2</sup> /pp*	350	5.5m	6m
	Supermarket Store	6	400m <sup>2</sup>	30m <sup>2</sup> /pp	14		
	Speciality Retail	6	1,570m <sup>2</sup>	10m <sup>2</sup> /pp*	157		
	Mall and Kiosk	6	628m <sup>2</sup>	10m <sup>2</sup> /pp*	63		
Level 2	Carpark	7a	6,590m <sup>2</sup>	30m <sup>2</sup> /pp	220	2.5m	4m

\* The population numbers and egress widths for the **retail portions (excluding loading docks)** of the buildings have been calculated based on the figures recommended in Project 6 "Fire Safety in Shopping Centres" prepared by the Fire Code Reform Centre.

## 7. BCA ASSESSMENT

### 7.1. SECTION B: STRUCTURE

All new works to comply with the current requirements of the BCA and applicable Australian Standards.

### 7.2. SECTION C: FIRE RESISTANCE

The building contains two storeys of retail floor space, one storey of covered car park and one level of rooftop carpark. The rooftop car park is predominately open to the sky with the exception of a small area (349m<sup>2</sup>) which contains an elevated plant room above. This small area of covered car park results in the entire Level 2A rooftop being treated as a storey for the purpose of calculating the rise in storeys. On this basis the building would have a rise in storeys of 4.

It is proposed to assess Level 2A on a performance basis via a fire engineered alternative solution. For the purpose of this assessment the building has been treated as having a rise in storeys of 3 in lieu of 4.

***Compliance is proposed to be achieved on a performance basis via a Fire Engineered Alternative solution.***

The building is to be erected in Type B fire resisting construction in accordance with Specification C1.1 of the BCA.

The building is to be treated as a Large Isolated. Perimeter access appears to comply with the DtS requirements of C2.4.

### 7.3. SECTION D: ACCESS AND EGRESS

The building has a rise in storeys of 3 and will be served by a sprinkler system, therefore it is not necessary to fire isolate required stairways. (We note that the stairways may be fire separated as part of the fire engineered alternative solution)

The following travel distances are proposed:

- 25m to a point of choice
- 60m to an exit within the mall
- 65m to an exit within the major tenancy
- 70m to an exit within the carpark
- 80m to an exit within smaller tenancies

- 100m between alternative exits within the mall areas
- 110m between alternative exits within individual smaller tenancies
- 115m between alternative exits within the major tenancy

***Compliance is proposed to be achieved on a performance basis via a Fire Engineered Alternative solution.***

The ground floor entry/exit leading to open space is proposed to be permanently open during trading hours and secured with shutters after hours.

***Compliance is proposed to be achieved on a performance basis via a Fire Engineered Alternative solution.***

#### **7.4. SECTION E: SERVICES AND EQUIPMENT**

The building is proposed to be served by its own dedicated hydrant system complying with AS2419.2005.

The building is proposed to be served by hose reels installed accordance with AS2441 – 2005.

The building is proposed to be provided with a sprinkler system in accordance AS 2118 – 1998 and Specification E1.5.

The building is proposed to be served by its own dedicated fire control centre.

The building is proposed to be served by a performance based automatic smoke exhaust system.

***Compliance is proposed to be achieved on a performance basis via a Fire Engineered Alternative solution***

The building is proposed to be served by emergency lighting complying with Clause E4.2 and exit signs complying with Clause E4.5.

The design of the essential fire safety measures will include a number of features that will assist centre management in the operation the building's fire safety systems. These features include, but are not limited to, the following:

- An alarm verification facility that minimises the call out of fire brigades in the event of false alarms;
- The provision of mimic panel(s) and associated block plans in the centre management office to allow immediate identification of a fire alarm.
- Logically locating key essential services measures such as the fire control centre, sprinkler/hydrant pumps and valves to facilitate brigade intervention, whilst being accessible to centre management.

Appendix B lists the Fire Safety Measures applicable to the proposed design.

#### **7.5. SECTION F: HEALTH AND AMENITY**

The status of sanitary facilities required by Part F2 of the BCA are set out below:

Staff to patron ratio – Speciality Retail: 10%

Staff to patron ratio –Supermarket: 5%

**Speciality Retail mini majors and mall only**

Area	Occupant Numbers			WC Required / Provided		Urinal Required / Provided		Basin Required / Provided	
	Total								
Level 1 & 2	1169 Patrons	Male	585	1	1	1	1	1	2
		Female	585	1	1	N/A	NA	1	2
Level 1 & 2	93	Male	47	3	3	2	1	2	2



Area	Occupant Numbers			WC Required / Provided		Urinal Required / Provided		Basin Required / Provided	
	Total								
	Staff (Excluding Supermarket)	Female	47	4	4	N/A	NA	2	2

The unisex accessible facility has been counted once for each sex.

The supermarket will be served by its own dedicated staff facilities.

## 7.6. SECTION J: HEALTH AND AMENITY

All new work to comply with the current requirements of Section J of the BCA. ***Compliance is proposed to be achieved on a performance basis via an Alternative solution.***

## 8. CONCLUSION

It is proposed to satisfy the following by alternative solutions:

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
1.	Rise in storeys	C1.2	Calculation of rise in storeys – The Level 2A roof top carpark contains a small under cover area (349m <sup>2</sup> ) which requires the entire level to be counted in the rise in storeys.	CP1
1.	Exit travel distances	D1.4	The following travel distances are proposed <ul style="list-style-type: none"> <li>• 25m to a point of choice</li> <li>• 60m to an exit within the mall</li> <li>• 65m to an exit within the major tenancy</li> <li>• 70m to an exit within the carpark</li> <li>• 80m to an exit within smaller tenancies</li> </ul>	DP4 & EP2.2
2.	Distance between alternative exits	D1.5	The following travel distances between alternative exits in the new building are proposed <ul style="list-style-type: none"> <li>• 100m between alternative exits within the mall areas</li> <li>• 110m between alternative exits within individual smaller tenancies</li> <li>• 115m between alternative exits within the major tenancy</li> </ul>	DP4 & EP2.2
3.	Smoke Hazard Management	E2.2	Performance based smoke exhaust proposed <ul style="list-style-type: none"> <li>• Performance based smoke exhaust rates</li> <li>• Performance based smoke reservoirs</li> <li>• Smoke exhaust is not to be provide in the back of house areas.</li> </ul>	EP2.2
4.	Section J Energy Efficiency	-	Compliance is proposed to be achieved on a performance basis using JV3	JP1

**9. APPENDIX A – REFERENCED DOCUMENTATION**

The following documentation was used in the preparation of this report:

<i><b>Drawing No.</b></i>	<i><b>Title</b></i>	<i><b>Issue</b></i>	<i><b>Date</b></i>	<i><b>Drawn By</b></i>
EA 106	Ground Floor Plan	01	14.12.12	FJMT
EA 107	Level 1 Floor Plan	01	14.12.12	FJMT
EA 108	Level 2 Floor Plan	02	14.12.12	FJMT
EA 109	Level 2A Floor Plan	02	14.12.12	FJMT

## 10. APPENDIX B – STATUTORY FIRE SAFETY MEASURES

### Schedule of Statutory Fire Safety Measures

Measure	Standard of Performance
Automatic fail safe devices	Scheduled devices release upon trip of sprinkler activation in accordance with BCA2012 Clause D2.21.
Automatic Fire Detection and Alarm System (smoke detection system to activate smoke exhaust system)	BCA2012 Clause 5 of Specification E2.2a
Emergency lighting	BCA2012 Clause E4.2, E4.4 and AS 2293.1 – 2005
Exit signs	BCA2012 Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2005
Fire control centre	BCA2012 Specification E1.8
Fire dampers	BCA2012 Clause C3.15 and AS/NZS 1668.1 – 1998 (AS 1682.1-1990 and AS 1682.2-1990)
Fire hydrants systems	BCA2012 Clause E1.3 and AS 2419.1 – 2005
Hose reel system	BCA2012 Clause E1.4 and AS 2441 – 2005
Mechanical air handling system (automatic smoke exhaust system)	BCA2012 Specification E2.2b
Perimeter vehicle access for emergency vehicles	BCA2012 Clause C2.4
Portable fire extinguishers	BCA2012 Clause E1.6 and AS 2444 – 2001
Warning and operational signs	BCA2012 Clauses , D1.17 and E3.3,

Note that the fire safety schedule may need to be amended subject to the inclusion of a fire engineered alternative solution.