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## Preliminary fire safety engineering review

AMP Capital

Macquarie Centre Redevelopment –  
Stage 1 Concept DA

SY150392

Revision CA1.1 | 10 December 2015



## Amendment schedule

Version	Date	Information relating to report			
CA1.0	30/11/2015	Reason for issue	Report issued to AMP Capital for review and comment.		
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## 1. Background

This report has been prepared on behalf of AMP Capital (AMPC) in support of a Stage 1 Development Application (DA) for the mixed use redevelopment of Macquarie Shopping Centre (Macquarie Centre). The Stage 1 DA seeks concept approval for the redevelopment of Macquarie Centre by establishing:

- Building envelopes and design parameters for future development on the site, including the proposed uses within the podium and tower components.
- The distribution of floor space across the site.
- Future pedestrian and vehicle connections to and within the site.

This report supports the proposed future expansion of Macquarie Centre in relation to proposed fire safety engineering.

## 2. Site description

Macquarie Centre is approximately 11.25 hectares in area and is located at the corner of Waterloo Road, Herring Road and Talavera Road, Macquarie Park. The site is legally described as Lot 100 in DP 1190494.

The site is bound by Herring Road to the north west, Talavera Road to the north east, commercial uses to the south east and Waterloo Road to the south west. Located within the Macquarie Park Corridor, the site has excellent access to public transport, situated immediately adjacent the Macquarie University Railway Station and the Herring Road Bus Station. Located between the M2 Hills Motorway and Epping Road, the site also enjoys excellent vehicle connectivity.

Macquarie Centre was originally constructed in 1981. The centre has undergone various stages of redevelopment and extensions. A major refurbishment occurred in 2000, 2003 and most recently in 2014, creating a fresh food court, David Jones expansion, addition of second full line supermarket (Coles), a value supermarket (Aldi), with new speciality food and convenience stores. Today Macquarie Centre is the largest shopping centre in NSW and the 8th largest shopping centre in Australia and includes a wide range of retail, entertainment and service offerings.

The shopping centre currently spans five levels accommodating 368 stores, including major retailers such as David Jones, Myer, Target, Big W, Aldi, Coles and Woolworths. The centre also houses a large number of mini major international retail stores including H&M, Zara, Uniqlo, Forever 21, GAP and Sephora. A number of entertainment offerings exist in the centre including a cinema complex and ice skating rink. The site currently has a gross floor area of 170,850m<sup>2</sup> and accommodates 4,755 car spaces.

## 3. Development proposal

The Stage 1 DA seeks concept approval for the mixed use redevelopment of Macquarie Centre under s.83B of the Environmental Planning & Assessment Act 1979. The first stage will seek concept approval only for:

- Mixed use development to enable a range of land uses. The final mix of land uses will be subject to and determined under the relevant Stage 2 detailed DAs.
- Building envelopes for the proposed basement, expanded podium and tower forms.
- The four tower envelopes fronting Herring Road will have maximum heights ranging from 90m and 120m above existing ground level. The building envelope for Tower 1 is of sufficient dimensions to accommodate alternate tower forms.
- Maximum additional gross floor area (GFA) of 148,000sqm.
- The new retail podium along Herring Road will replace the existing structure. This will provide an active frontage with separate pedestrian entries to Herring Road and the creation of a vibrant atrium space.



- The creation of ‘Station Plaza’ between the train station and shopping centre, framed by active uses and a landmark building known as the “Shard”.
- The building envelopes for the proposed basement and upper levels of the expanded podium will accommodate a maximum of 2,175 additional car spaces.
- New vehicle and pedestrian access points.

The Stage 1 DA does not seek approval for

- Any works, including demolition, excavation, construction and public domain improvements.
- The final arrangement of land uses.
- Layout, mix and number of residential units.
- A specific number of car spaces (as this will be determined having regard to the final mix of land uses).
- The design of the building exteriors including facades and roofs.
- Public domain and landscape design.

Such approvals will be sought via subsequent development applications following receipt of development consent for the Stage 1 DA.

The overview of the indicative mix of land uses within the proposed building envelopes is identified in Table 1 below.

Component	Proposed
Basement	<ul style="list-style-type: none"> <li>• Loading docks, car parking and associated vehicle circulation, waste rooms, utilities, future connection to existing train station (subject to consent from RailCorp) and retail premises.</li> </ul>
Podium	<ul style="list-style-type: none"> <li>• Retail premises, commercial premises, food and drink premises, entertainment facilities, recreation facilities (indoor), recreation area, car parking and associated vehicle circulation, community uses (subject to further discussions with Council) and communal open space associated with the towers.</li> </ul>
Tower 1	<ul style="list-style-type: none"> <li>• Mixed use development comprising commercial premises and/or residential accommodation and/or serviced apartments above a retail podium.</li> </ul>
Towers 2, 3 and 4	<ul style="list-style-type: none"> <li>• Mixed use development comprising residential accommodation and/or serviced apartments above a retail podium.</li> </ul>

**Table 1 Overview of indicative mix of land uses**

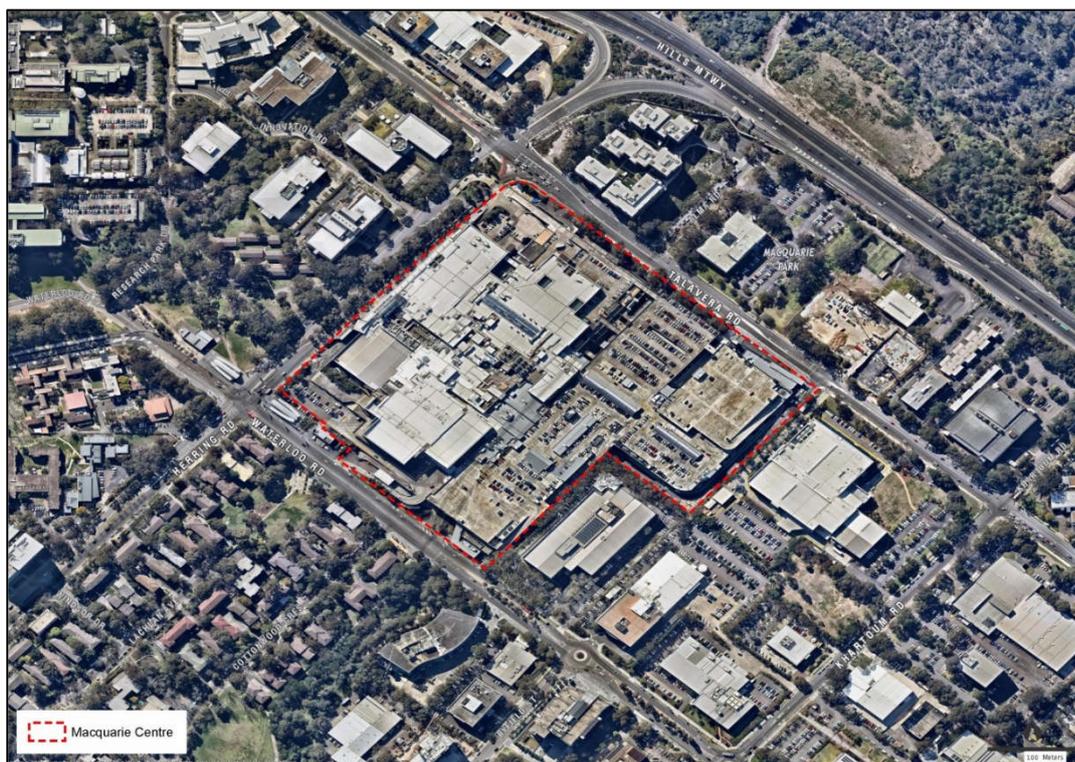


Figure 1 Aerial photograph

## 4. Preliminary fire safety engineering review

Defire has undertaken a preliminary fire safety engineering review of the proposed design for the stage 1 development application submission at the request of AMP Capital. The review was based on the drawings and information listed in Appendix A.

The intent of the review was to determine whether we believe the design of the new works can be demonstrated to achieve compliance with the performance requirements of the BCA and that the level of safety in the existing building is not reduced.

The key compliance issues identified to date include the following:

- Fire resistance levels
- Large isolated building requirements for open spaces and vehicular access
- Horizontal exits
- Exits travel distances
- Dimensions of exits
- Travel via fire-isolated exits
- Swinging doors
- Fire hose reels
- Fire hydrants
- Fire control room
- Smoke exhaust
- Fire and smoke control systems
- Atrium provisions



It is Defire's professional opinion that it is possible to develop alternative solutions for the issues identified to demonstrate compliance with the relevant performance requirements of the BCA without major changes to the proposed design.

The details of the proposed alternative solutions are subject to the outcome of the fire engineering brief and analysis which will be carried out in accordance with the International Fire Engineering Guidelines.

The alternative solutions for the building will be developed as part of the ongoing design and development process and documented in a format suitable for submission to the relevant approval authorities. It is noted that additional alternative solutions may be identified during the ongoing design development process in consultation with the design team.



## Appendix A Drawings and information

Drawing title	Dwg no	Date	Drawn	
Cover sheet	DA0000 Rev 1	December 2015	AJ+C	
Site plan	DA1000 Rev 1	December 2015		
Level 0 plan Level 0A plan	DA2000 Rev 1	December 2015		
Level 1 plan	DA2001 Rev 1	December 2015		
Level 1A and 2 plan	DA2002 Rev 1	December 2015		
Level 2A and 3 plan	DA2003 Rev 1	December 2015		
Level 3A and 4 plan base case	DA2004 Rev 1	December 2015		
Level 4A plan Level 5 plan	DA2005 Rev 1	December 2015		
Level 6 plan	DA2006 Rev 1	December 2015		
Level 7 plan	DA2007 Rev 1	December 2015		
Typical upper tower levels	DA2008 Rev 1	December 2015		
Master lease plan level 0 retail & carpark	08.3100 Rev 11	19/12/2014		Westfield Design & Construction
Master lease plan level 1 retail & carpark	08.3101 Rev 11	19/12/2014		
Master lease plan level 1A retail & carpark	08.3101A Rev 11	19/12/2014		
Master lease plan level 2 retail & carpark	08.3102 Rev 11	19/12/2014		
Master lease plan level 2A retail & carpark	08.3102A Rev 11	19/12/2014		
Master lease plan level 3 retail & carpark	08.3103 Rev 11	19/12/2014		
Master lease plan level 3A retail & carpark	08.3103A Rev 11	19/12/2014		
Master lease plan level 4 retail & carpark	08.3104 Rev 11	19/12/2014		
Master lease plan level 5 retail & carpark	08.3105 Rev 11	19/12/2014		

Other information	Ref no	Date	Prepared by
Macquarie Centre Redevelopment – Stage 1 Concept DA BCA Assessment Report to accompany DA Submission	2015/1885 Rev 1.2	10/12/2015	Steve Watson & Partners
Fire safety engineering report	SY130248 Rev FER1.4	19/09/2014	Defire
Fire engineering report for Macquarie Centre North Ryde, NSW 2113	2010/553-FER- R3.7	October 2014	Fire Engineering Professionals