Holmes Fire

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DEVELOPMENT APPLICATION

To:	City of Paramatta Council	Project:	137154
Email:	council@cityofparramatta.nsw.gov.au	Version:	A
Date:	7 November 2018		
Subject:	1 & 2 Murray Rose Avenue, Sydney Olympic Park, NSW		

To Whom It May Concern,

This letter is to advise that Holmes Fire has been engaged by Austino Property Group to provide fire engineering services for the proposed residential developments of the two buildings to be located at 1 & 2 Murray Rose Avenue, Sydney Olympic Park, NSW.

1 INTRODUCTION

1 Murray Rose Ave (1MRA) consists of Class 7a carparking on Levels B3 to B1 and Class 2 Sole-Occupancy Units (SOUs) on Levels 00 to Level 11, with communal open space on Levels 00 and 08.

2 Murray Rose Ave (2MRA) consists of Class 7a carparking on Levels B3 to 00 and Class 2 SOUs on Levels 00 to 14 with a Plant Room on Level 15 and communal open space on Level 08. Level 01 through Level 08 have walkways open to the atmosphere, with a partial roof cover above Level 08.

1MRA and 2MRA are approximately 37 m and 46.5 m in effective height respectively. These buildings are not connected and are to be considered as two separate buildings. Both buildings are to be sprinkler protected and be of Type A construction.

A Building Code of Australia (BCA) 2016 Amendment 1[1] assessment has been undertaken by AED Group, dated 29 October 2018. This report identified a number of non-compliances with the Deemed-to-Satisfy Provisions of the BCA that will be addressed by Holmes Fire. It is noted that based on the project time frames, the building is expected to be subject to BCA 2019, due to come into effect on 1 May 2019.

[1] Australian Building Codes Board, National Construction Code Series 2016 Amendment 1, Volume 1, Building Code of Australia, Class 2 to Class 9 Buildings. Australian Building Codes Board, CAN, Australia, 2018.

2 PROPOSED PERFORMANCE SOLUTIONS

Holmes Fire will address the identified non-compliances using performance based fire engineering solutions. The performance based solutions will comply with the relevant Performance Requirements of the BCA. The design approach will be in line with the International Fire Engineering Guidelines[2] and other acceptable guideline documents.

The Performance Solution designs will be developed in line with BCA Clause A0.3, as applicable; i.e. complying with the relevant Performance Requirements or by equivalence comparison with the Deemed-to-Satisfy Provisions.

With regards to 2MRA, BCA Part G3 and Specification G3.8 requires an atrium connecting more than 3 storeys in a sprinkler protected building to be provided with certain fire safety measures. 2MRA will have walkways open to the atmosphere on Level 01 through Level 08, connected and partially covered. Under BCA 2016, it is interpretive whether this is an atrium, due to an atrium being defined as "substantially enclosed at the top", and the cover at the top of the subject building is understood to constitute less than 50% of the floor area below. The definition of an atrium in the BCA 2019 draft is revised to be enclosed "greater than 50% of the area of the space measured in plan". Holmes Fire understands that 2MRA would not be considered to have an atrium under the proposed BCA 2019 definition. This letter of intent is prepared on the assumption that the above definition will be adopted in the finalised version of BCA 2019. As a result, the walls facing the external walkways of 2 MRA would be considered external walls, and the building would not be considered to contain an atrium. Holmes Fire can address non-compliances per Part G3 should this definition not carry through to the 2019 edition of the BCA.

The identified non-compliances and proposed approach of the Performance Solution for each issue is listed below. Holmes Fire understands that all other aspects of the building will comply with the Deemed-to-Satisfy Provisions of the BCA.

- BCA Clause C1.1 requires a building of Type A construction to have a minimum slab thickness of 200 mm for concrete flat slab construction in accordance with AS 3600-2009. A reduced slab is proposed on the residential levels to allow for a set down in bathroom wet areas of 170 mm in lieu of the required 200 mm. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP1 and CP2 to allow for reduced slab thickness in wet areas.
- BCA Clause C2.14 requires residential public corridors exceeding 40 m in length to be divided into sections of 40 m or less by smoke proof construction. The residential public corridor is approximately 48 m in length on Level 01 in 1MRA, however is not proposed to be divided into sections by smoke proof construction. A Performance Solution using a comparative approach will

[2] National Research Council of Canada; International Code Council, United States of America; Department of Building and Housing, New Zealand; and Australian Building Codes Board, International Fire Engineering Guidelines, Edition 2005, Australian Building Codes Board, 2005.

be provided to address Performance Requirement EP2.2 to allow for residential public corridors over 40 m to not be separated.

- BCA Clause C3.2 requires openings in external walls that are required to be fire rated must be protected in accordance with Clause C3.4 if they are located within 3 m of an allotment boundary or 6 m of the far side of a road. Openings are proposed to be located within 3 m of the boundary protected by alternative means, or no protection. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP2 and CP8 to allow for alternative or no protection to openings within 3 m of an allotment boundary.
- BCA Clause C3.11(a) requires residential SOUs to be bound by fire rated construction and bounding doorways be self-closing fire rated doors achieving an FRL of at least -/60/30. The proposed design incorporates lifts that open directly into the residential SOU on Level 14 of 2MRA. The Lift landing doors will only achieve an FRL of -/60/-. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP2 and CP8 to allow the lift landing doors opening directly into Level 14 SOU to be rated -/60/-.
- BCA Clause D1.2(b) requires a building with an effective height of more than 25 m to be provided with two exits on each storey. It is proposed to have one exit from the following locations:
  - 1MRA: Level B1, Level 00, and Level 12. It is noted that the residential SOUs on Level B1 can exit through their private courtyards to a road or open space.
  - 2MRA: Level B1, Level 14 SOU, and Level 15.

  A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 to allow for one exit from these locations.
- BCA Clause D1.4(a)(i)(A) requires the maximum travel distance from the entry door of a residential Sole Occupancy Unit (SOU) to an exit or point of choice to be 6 m. The travel distance from southern SOUs in 1MRA exceeds the maximum permitted travel distance, being up to 11 m to an exit or point of choice on Levels 01 to 07. The travel distance from SOUs in 2MRA exceeds the maximum permitted travel distance, being up to 15 m to an exit or point of choice on Levels 02 and 9 to 12. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and EP2.2 to allow for extended travel distances.
- BCA Clause D1.4(c)(i) requires the maximum travel distance in the Class 7a carparking to be 20 m to a point of choice and 40 m to an exit where 2 or more exits are available. The travel distance to an exit within 1MRA is 46 m on Level B1 and 44 m on Level B2. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and EP2.2 to allow for extended travel distances.
- BCA Clause D1.5(b) requires that exits which are alternative means of egress must be not less than 9 m apart. The alternative exits in 2MRA from the Level 09 to 13 fire-isolated scissor stairs, are located 4.3 m apart. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and EP2.2 to allow for reduced distance between alternative exits.

- BCA Clause D1.5(c)(iii) requires the maximum travel distance between alternative exits in the open communal space on Level 08 of 1MRA is permitted to be 60 m, however the distance between the alternative exits from this is approximately 80 m. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and EP2.2 to allow for an extended travel distance between alternative exits on Level 08 of 1MRA.
- BCA Clause D1.7(b) requires fire-isolated stairs to discharge to a road, open space, or a covered area satisfying particular requirements. Fire-isolated stairs within 1MRA and 2MRA discharge into covered areas which do not satisfy the requirements of Clause D1.7(b). A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and DP5 to allow for fire-isolated stairs to discharge within covered areas.
- BCA Clause D1.7(c) requires openings to be protected where the path of travel from the point of discharge of fire-isolated exits to the road requires occupants to pass within 6 m of openings in the external wall of the building. The path of travel from fire-isolated stairs within 1MRA pass within 6 m of openings and are not proposed to be protected. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and DP5 to allow for openings within 6 m of the path of travel not to be protected.
- BCA Clause E1.3 requires a fire hydrant system to be provided in accordance with AS 2419.1-2005. It is proposed to locate the hydrant booster assemblies within 1MRA and 2MRA per the 2017 standard which does not require protection in a fully sprinklered building. In addition, the hydrant booster assemblies may not be located within sight of the main entrance to the building. A Performance Solution using an absolute approach will be provided to address Performance Requirement EP1.3 to allow for the proposed locations of the hydrant booster assembly within 1MRA and 2MRA.
- BCA Clause E1.8 requires a fire control centre located not more than 300 mm in vertical distance from the level of the road to be provided. The fire control centres in 1MRA and 2MRA will be located more than 300 mm above or below the level of the adjacent street. A Performance Solution using an absolute approach will be provided to address Performance Requirement EP1.6 to allow for the proposed locations of the fire control centres.
- BCA Clause E2.2 requires the carpark exhaust system (mechanical ventilation) to comply with AS/NZS 1668.1-1998 and AS 1668.2-2012 which do not permit jet fans to be used in series. The carpark exhaust system in the Basement Levels B3 to B1 in 1MRA and B3 to 00 in 2MRA is proposed to utilise jet fans in series. A Performance Solution using an absolute approach will be provided to address Performance Requirements EP1.4 and EP2.2 to allow for jetfans to be used within the carparks. This Performance Solution will take travel distances into consideration and will be in accordance with the Fire & Rescue NSW guidelines for impulse fans used in sprinkler protected carparks.

3 SUMMARY

Based on Holmes Fire's review of the project documentation, it is considered that performance based fire engineering can be utilised to demonstrate compliance with the Performance Requirements of the BCA without major changes to the current design. Additional non-compliances may be identified as the design is

further developed, however it is considered that there are no significant issues that would affect the building layout.

The information contained within this letter is based on the architectural drawings prepared by PTW Architects, as listed below.

Dwg no.	Title	Date	Issue
DA-10-1700	General Arrangement Plans - S1 Level B3	12.10.2018	A
DA-10-1800	General Arrangement Plans - S1 Level B2	12.10.2018	A
DA-10-1900	General Arrangement Plans - S1 Level B1	12.10.2018	A
DA-10-2000	General Arrangement Plans - S1 Level 00	12.10.2018	A
DA-10-2100	General Arrangement Plans - S1 Level 01	12.10.2018	A
DA-10-2200	General Arrangement Plans - S1 Level 02	12.10.2018	A
DA-10-2300	General Arrangement Plans - S1 Level 03-05	12.10.2018	A
DA-10-2400	General Arrangement Plans - S1 Level 06	12.10.2018	A
DA-10-2500	General Arrangement Plans - S1 Level 07	12.10.2018	A
DA-10-2600	General Arrangement Plans - S1 Level 08	12.10.2018	A
DA-10-2700	General Arrangement Plans - S1 Level 09	12.10.2018	A
DA-10-2800	General Arrangement Plans - S1 Level 10	12.10.2018	A
DA-10-2900	General Arrangement Plans - S1 Level 11	12.10.2018	A
DA-10-3000	General Arrangement Plans - S1 Level 12	12.10.2018	A
DA-10-4700	General Arrangement Plans – S2 Level B3	12.10.2018	A
DA-10-4800	General Arrangement Plans – S2 Level B2	12.10.2018	A
DA-10-4900	General Arrangement Plans – S2 Level B1	12.10.2018	A
DA-10-5000	General Arrangement Plans – S2 Level 00	12.10.2018	A
DA-10-5100	General Arrangement Plans – S2 Level 01	12.10.2018	A
DA-10-5200	General Arrangement Plans – S2 Level 02	12.10.2018	A
DA-10-5300	General Arrangement Plans – S2 Level 03- 05	12.10.2018	A
DA-10-5400	General Arrangement Plans – S2 Level 06	12.10.2018	A
DA-10-5500	General Arrangement Plans – S2 Level 07	12.10.2018	A
DA-10-5600	General Arrangement Plans – S2 Level 08	12.10.2018	A
DA-10-5700	General Arrangement Plans – S2 Level 09	12.10.2018	A

Dwg no.	Title	Date	Issue
DA-10-5800	General Arrangement Plans – S2 Level 10	12.10.2018	A
DA-10-5900	General Arrangement Plans – S2 Level 11	12.10.2018	A
DA-10-6000	General Arrangement Plans – S2 Level 12	12.10.2018	A
DA-10-6100	General Arrangement Plans – S2 Level 13	12.10.2018	A
DA-10-6200	General Arrangement Plans – S2 Level 14	12.10.2018	A
DA-10-6300	General Arrangement Plans – S2 Level 15	12.10.2018	A

Please do not hesitate to contact Holmes Fire, should there be any queries about the above.

Regards,

Alyson Blair
Fire Engineer

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