

DEVELOPMENT APPLICATION

To:	City of Sydney Council	Project:	140308.00
Date:	26 October 2020	Version:	C
Subject:	Sirius Site, 2-60 Cumberland Road, The Rocks, NSW		

To whom it may concern,

This letter is to advise that Holmes Fire has been engaged by Sirius Developments Pty Ltd to provide fire engineering services for the proposed works to the existing mixed-use building known as the Sirius Site, located at 2-60 Cumberland Road, The Rocks, NSW.

1 INTRODUCTION

The project involves the restoration and refurbishment of the existing Sirius building, including alterations and additions. The existing building is proposed to be substantially retained and restored with integrity. The building will comprise 76 Class 2 residential Sole Occupancy Units (SOUs), Class 5 office areas, Class 6 retail tenancies, and Class 7a carparking. The building will be 40.9 m in effective height and more than 6,000 m² in area. The site also contains a two-storey building known as the Cumberland Building that is united to the main building by the carpark and contains a Class 6 café and a Class 9b pool.

A Building Code of Australia, Volume 1, Amendment 1, 2019 (BCA)¹ assessment has been undertaken by Philip Chun, dated 14 August 2020. This report identified a number of non-compliances with the Deemed-to-Satisfy Provisions of the BCA that will be addressed by Holmes Fire.

2 PROPOSED ALTERNATIVE 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 Guidelines² and other acceptable guideline documents.

The Performance Solution designs will be developed in line with BCA Clause A2.2, as applicable; i.e. complying with the relevant Performance Requirements or by equivalence comparison with the Deemed-to-Satisfy Provisions.

¹ Australian Building Codes Board, National Construction Code Series 2019 Amendment 1, Volume 1, Building Code of Australia, Class 2 to Class 9 Buildings. Australian Building Codes Board, CAN, Australia, 2020.

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.

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 construction for building elements in a Class 7a carpark and Class 6 retail building to achieve an FRL of at least 120/120/120 and 180/180/180, respectively. Existing columns in parts of the carpark only achieve an FRL of 60/60/60. Additionally, the existing Class 6 retail construction achieves an FRL of 120/120/120. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP1 and CP2.
- BCA Clause C2.10 requires any lift connecting more than three storeys in a sprinkler protected building to be in a fire rated shaft. The lifts serving the low-rise terraces will not be in a fire rated shaft on the residential floors. BCA Clause C2.11 requires that where a lift is required to be fire-isolated, a stair must not be located within the same shaft as the lift. The low-rise terraces include lifts that are required to be fire-isolated and located in the same shaft as stairs that are required to be fire-isolated. BCA Clause D1.3 requires stairways connecting more than four storeys in a sprinkler protected Class 2 building to be fire-isolated. The stairways in the low-rise terraces connect up to seven levels and are proposed to not be fire-isolated. BCA Clause D1.7(a) prohibits a doorway from a room from opening directly into a stairway that is required to be fire-isolated unless it is from an SOU occupying the entire storey or public corridors. The low-rise terraces include SOUs that do not occupy the entire storey and open directly into stairs that are required to be fire-isolated. BCA Clause D2.7(a) prohibits services other than fire fighting or detection equipment to be located within a fire-isolated stairway. The low-rise terraces include garbage shafts in the stairs. BCA Clause 3.10 requires lift landing doors to be fire rated. The doors to the lifts in the mid-rise terraces will not be fire rated. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP2 and DP5 in relation to the stair and lift construction in the low-rise residential floors.
- BCA Clause C3.2 requires openings in external walls that are required to be fire rated to be protected in accordance with Clause C3.4 if they are located within 3 m of an allotment boundary. The building contains openings in external walls that are located within 3 m from the north and south allotment boundaries. These openings are proposed to not be protected, or will be protected by means other than those listed in Clause C3.4. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP2 and CP8.
- BCA Clause D1.2 requires a building with an effective height of more than 25 m to be provided with two exits on each storey. The low-rise terraces to the north and south, northern café, Cumberland Building, and service areas are provided with a single exit. A Performance Solution using a comparative approach will be provided to address Performance Requirement DP4.
- BCA Clause D1.4 permits the maximum travel distance from a Class 9b tenancy to be 20 m to an exit. The travel distance from the Cumberland Building pool is up to 26 m to the exit. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and EP2.2.

- BCA Clause D1.4(c)(i) and D1.5(c)(iii) permits the maximum travel distance in the carpark to be 20 m to a point of choice, 40 m to an exit, and 60 m between alternative exits. The travel distance in the service room in the B2b carpark is up to 22 m to a point of choice of exits and 53 m to the nearest exit. The distance between alternative exits is approximately 64 m. The travel distance from the central bike parking on B1a is up to 26 m to a point of choice of exits and 50 m to the nearest exit. A Performance Solution using a comparative approach will be provided to address Performance Requirements DP4 and EP2.2.
- BCA Clause D1.5(b) requires exits that are required as alternative means of egress to be not less than 9 m apart. The scissor stair entry doors to the tower are located 3.7 m from each other. A Performance Solution using a comparative approach will be provided to address Performance Requirement DP4.
- BCA Clause D2.4 requires rising and descending flights to be separated by smoke proof construction where these flights meet at discharge level in a fire-isolated stair. The northern stairs serving the low-rise terraces incorporate rising and descending flights which are not proposed to be separated. A Performance Solution using an absolute approach will be provided to address Performance Requirement DP4.5.
- BCA Clause E1.4 requires the Class 6 parts of the building to be provided with fire hose reels. It is proposed to provide portable fire extinguishers in lieu of fire hose reels to the northern Class 6 café. A Performance Solution using a comparative approach will be provided to address Performance Requirement EP1.1.
- BCA Clause E1.5 and Specification E1.5 require sprinkler alarm valves to be located in a secure room that is provided with direct egress to a road or open space. The sprinkler alarm valves are proposed to be located within the fire hydrant pump room on Basement 4 which does not have direct egress to a road or open space. A Performance Solution using an absolute approach will be provided to address Performance Requirement EP1.4.
- BCA Clause E3.4 requires emergency lifts to be installed in a building which has an effective height of more than 25 m. Emergency lifts will not be provided to the low-rise terraces. A Performance Solution using a comparative approach will be provided to address Performance Requirement EP3.2.

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 BVN, as listed below.

Dwg no.	Title	Date	Issue
AR-B-10-01	Basement B2b-B2a	23 October 2020	29
AR-B-10-02	Basement B1b-B1a	23 October 2020	24
AR-B-10-03	Level 01-03	23 October 2020	18
AR-B-10-04	Level 03-05	23 October 2020	18
AR-B-10-05	Level 05-07	18 September 2020	14
AR-B-10-06	Level 07-09	18 September 2020	13
AR-B-10-07	Level 09-11	18 September 2020	13
AR-B-10-08	Level 11-13	18 September 2020	12
AR-B-10-09	Level 13-15	18 September 2020	12
AR-B-10-10	Level 15-17	18 September 2020	12
AR-B-10-11	Level 18-19	18 September 2020	11
AR-B-10-12	Level 20-21	18 September 2020	11
AR-B-10-13	Level 22-23	18 September 2020	12
AR-B-10-14	Level 24-27	18 September 2020	8
AR-C-10-00	East & West Elevations – Streetscape	23 October 2020	9
AR-C-10-01	East & West Elevations – Sirius Building	23 October 2020	8
AR-C-10-02	North & South Elevations – Overall	18 September 2020	6
AR-C-10-03	North & South Elevations – Sirius Tower	18 September 2020	6
AR-C-10-04	East & West Elevations – Cumberland Building	18 September 2020	4
AR-D-10-01	Sections	23 October 2020	7
AR-D-10-02	Sections	18 September 2020	3

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

Regards,



Sarnia Rusbridge
Project Director

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