Holmes Fire

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DEVELOPMENT APPLICATION

To:	City of Sydney Council	Project:	141725.00
Date:	29 November 2021	Version:	A
Subject:	SCEGGS, Wilkinson House, 215 Forbes Street, Darlinghurst, NSW		

This letter is to advise that Holmes Fire has been engaged by Smart Design Studio to provide fire engineering services for a comprehensive rebuild of an existing five storey Class 9b school building, referred to as Wilkinson House, located at SCEGGS, 215 Forbes Street, Darlinghurst, NSW.

1 INTRODUCTION

The subject building is located on large site with other Class 9b school buildings; however, this letter is limited to the proposed works on Wilkinson House only. It is proposed to add an additional storey as well as other internal modifications.

A Building Code of Australia, 2019 Amendment 1 (BCA)[1] assessment has been undertaken by BCA Logic, dated 8 October 2021. This report identified a number of non-compliances with the Deemed-to-Satisfy Provisions of the BCA, some of which 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 Guidelines[2] 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.

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 and Specification C1.1, Clause 2.5(d) permit curtain and panel walls which are external walls to not achieve an FRL, providing these walls are of non-combustible construction

[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.

and are fully protected by automatic external wall-wetting sprinklers. It is proposed to have the new 'lift lobby box' external wall of glass construction. Glass is permitted to be used where non-combustible elements are required, via BCA Clause C1.9. However, the upper levels of the southern elevation will not be protected by external wall wetting sprinklers, which negates the BCA Specification C1.1, Clause 2.5(d) concession for the FRL. A Performance Solution using an absolute approach will be provided to address Performance Requirements CP1 and CP2 to allow for the unprotected glass wall in the Wilkinson House building based on the external wall and roof of the Centenary Sports Hall building, within 3 m of the glass wall, achieving an FRL of 120/120/120, and the provision of an automatic sprinkler system and smoke detection and alarm system in the Wilkinson House building and the smoke detection and alarm system in the Centenary Sports Hall building.

- BCA Clause D1.2, D1.4 and D1.11 requires all horizontal exits to not be counted as required exits in a Class 9b building used as a secondary school. It is proposed to utilise horizontal exits to another building that is not considered united being the Centenary Sports Hall building to the south to serve Level 2 (L02) and Lower Ground (LG). A Performance Solution using an absolute approach will be provided to address Performance Requirements DP4, DP5 and EP2.2 to allow for a horizontal exit based on a secondary exit on the Ground Level (G) which occupants can access via the central stairway, and the provision of an automatic sprinkler system and smoke detection and alarm system.
- BCA Clause D1.2(d)(v) requires in addition to any horizontal exit, not less than 2 exits must be provided from each storey in a secondary school with a rise in storeys of 2 or more. It is proposed to have the central open circulating stairway serving as the only exit serving L03. A Performance Solution using an absolute approach will be provided to address Performance Requirements DP4 and EP2.2 to allow for a single exit on Level L03 based on a secondary exit provide on the Ground Level (G) which occupants can access via the central stairway and the provision of an automatic sprinkler system and smoke detection and alarm system.
- BCA Clause D1.2(d)(v) requires in addition to any horizontal exit, not less than 2 exits must be provided from each storey in a secondary school with a rise in storeys of 2 or more. It is proposed to have the upper lift landing to the LG Floor connecting with one horizontal exit only, being lift lobby doors to the Centenary Sports Hall to the south. A Performance Solution using an absolute approach will be provided to address Performance Requirements DP4 and EP2.2 to allow for a single exit on Level LG based on a large exit width provided and the provision of an automatic sprinkler system and smoke detection and alarm system.
- BCA Clause D1.3 and D1.7 requires every stairway serving as a required exit to be fire-isolated if it connects, passes through or passes by more than 3 consecutive storeys if the building has a sprinkler system complying with Specification E1.5 installed throughout. It is proposed to have the central open (non-fire-isolated) circulating stairway connecting four storeys being Levels G, L01, L02 and L03. A Performance Solution using an absolute approach will be provided to address Performance Requirements DP4, DP5 and EP2.2 to allow for a non-fire-isolated stairway connecting four storeys based on smoke separation between the non-fire-isolated stairway and the classroom areas, a secondary horizontal exit and the provision of an automatic sprinkler system and smoke detection and alarm system.

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 Smart Design Studio, as listed below.

Dwg no.	Title	Date	Issue
DA100	L00 Plan	15/10/21	A
DA101	L01 Plan	15/10/21	A
DA102	L02 Plan	15/10/21	A
DA103	L03 Plan	15/10/21	A
DA104	RF Plan	15/10/21	A
DA105	LG Plan	15/10/21	A
DA400	East Elevation	15/10/21	A
DA401	North Elevation	15/10/21	A
DA402	West Elevation	15/10/21	A
DA404	South Elevation	15/10/21	A
DA450	Section AA	15/10/21	A
DA451	Section BB	15/10/21	A
DA452	Section CC	15/10/21	A

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

Regards,

Glen Mitchell
CEO (Australia) / Project Director

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