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DEVELOPMENT APPLICATION REPORT				Fire Engineering
Project Name:	St Marys Leagues Club Hotel		Document No.	CA01
Project No:	42019500			
Client:	FDC Construction & Fitout PL		Issued for: DA	
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☒	☐	FDC Construction & Fitout PL	Marco Salvati	marcos@fdcbuilding.com.au

Subject: Fire safety engineering assessment of DA plans – St Marys Leagues Club Hotel

This fire safety engineering assessment of the development application plans details the preliminary fire safety design strategy for the proposed St Mary's Rugby Leagues Club Hotel located at Forrester and Boronia Road, St Marys, NSW.

The subject development comprises one building containing a 6-level, 123 room hotel adjacent to the existing St Marys Leagues Club.

The advice contained in this letter is based on the following:

1. The relevant provisions of the Building Code of Australia 2016 (BCA).
2. BCA Assessment Report prepared by Blackett Maguire + Goldsmith dated 29.3.2016.
3. Architectural plans prepared by WMK Architects with Project Number 15017, as referenced in Table 1.

Table 1 – Referenced architectural drawings

Drawing no.	Title	Issue no.	Date
DA000	Cover Sheet & Location Plan	A	22.04.16
DA001	Site Plan	A	22.04.16
DA002	Carpark Plan	A	22.04.16
DA010	Demolition Plan	A	22.04.16
DA100	Ground Floor Plan	A	22.04.16
DA101	Level 1 Plan - Phase 1	A	22.04.16
DA102	Level 1 Plan - Phase 2	A	22.04.16
DA103	Level 2 Plan	A	22.04.16
DA104	Level 3 Plan	A	22.04.16
DA105	Level 4 Plan	A	22.04.16
DA106	Level 5 Plan	A	22.04.16
DA107	Roof Plan	A	22.04.16
DA500	South Elevation	A	22.04.16
DA501	East Elevation	A	22.04.16
DA502	North Elevation	A	22.04.16
DA600	Section A	A	22.04.16
DA601	Section B	A	22.04.16

As stipulated within the NSW Environmental Planning & Assessment (EP&A) Regulation 2000, the proposed development is to comply with the Building Code of Australia 2016 (BCA). Based on required compliance with BCA 2016, a description of the parameters relating to the development in the context of the requirements and

definitions provided within the BCA is provided in Table 2.

Table 2 - BCA deemed-to-satisfy provision reference criteria for the proposed development

BCA clause		Description or requirement
A1.1	Effective height	The effective height of the building will be not more than 25 metres, approximately 17.4 metres.
A3.2	Occupancy classification	The building will be of the following classifications:- • Class 3 (serviced apartments) • Class 9b (lobby / reception area) • Class 7a (under croft carparking)
C1.1	Minimum type of construction	Type A construction is applicable.
C1.2	Rise in storeys	The building will have a rise in storeys of six (6).

C2.2	Fire compartment size limitations	Fire compartment size limitations for Class 9b and 7a occupancies of Type A construction are as follows:
		• Class 9b
		  ○ 8,000 m^2
		  ○ 48,000 m^3
		• Class 7
		  ○ 5,000 m^2
		  ○ 30,000 m^3
		These fire compartment size limitations will not be exceeded.
		NB. Fire compartment size limitations do not apply to Class 3 parts.

It is proposed that the method of BCA compliance for fire safety be achieved via a combination of prescriptive-based and performance-based design. This approach accords with clause A0.2(c) of the BCA which permits compliance to be achieved via one or a combination of the following:

- Performance Solution that, in accordance with clause A0.3, either demonstrates compliance with the BCA performance requirements or demonstrates fire safety at least equivalence with the deemed-to-satisfy provisions.; or
- Deemed-to-Satisfied Solution.

Compliance with aspects of fire safety design that are not intended to meet the BCA deemed-to-satisfy provisions will be addressed as performance solutions forming the basis of a fire engineering analysis. The following assessment methods for the performance solutions are proposed:

- BCA clause A0.5(b), comprising utilisation of “other verification methods” appropriate to that which the approval authority will accept for determining compliance with the performance requirements; or
- BCA clause A0.5(c), comprising utilisation of a comparison of the level of fire safety performance associated with the proposed design to that achieved by the deemed-to-satisfy provisions.

The fire engineering analysis will follow the principles established within the International Fire Engineering Guidelines 2005. The acceptance criteria for the assessment of the performance solutions will be established in consultation with the relevant authorities having jurisdiction, including Fire and Rescue NSW, the design team and the owner’s representative. This process will continue throughout the development of the design.

Exova Warringtonfire Aus Pty Ltd has undertaken a preliminary fire safety engineering assessment of the DA architectural plans for the proposed development together with the BCA Capability Statement.

From the assessment undertaken, it is considered that the matters identified below that are likely to form fire safety engineering performance solutions can be readily addressed, enabling the proposed development to readily achieve compliance with the relevant fire safety related provisions of BCA 2016. The areas of design or BCA DtS non-compliances where a fire engineering performance solution will be required, as identified in the BCA Capability Statement, are described in Table 1 below.

All other items of fire and life safety forming part of the proposed development are to be provided in compliance with the DtS provisions of the BCA.

Table 3 – Summary of BCA DtS provision departures and proposed performance solutions

<table>
<tr><th colspan="2">BCA DtS provision</th><th>Proposed performance solution</th></tr>
<tr><td colspan="2">Spec C1.1 stipulates that, in a Class 9 building with Type A construction, the external walls within 1.5 m – 3 m from a fire source feature are to have an FRL of 120/90/90 for loadbearing parts, and –/90/90 for non-loadbearing parts.</td><td rowspan="4">Performance solution 1

As shown in Figure 1, the proposed Performance Solution is based on:
(i) the external walls and the associated openings within the existing club building remain unchanged; and
(ii) the external walls of the proposed hotel building adjacent to the existing club building are to have a FRL of 90/60/60 for loadbearing parts and an FRL of -60/60 for non-loadbearing parts, in accordance with Spec C1.1, clause 3 of the BCA.

The external walls of the existing club building within 3 m from the proposed hotel building are not to be fire rated.</td></tr>
<tr><td>BCA Clause</td><td>Spec C1.1</td></tr>
<tr><td>Relevant performance requirement(s)</td><td>CP1 & CP2</td></tr>
<tr><td>Assessment method</td><td>Qualitative assessment, based on BCA A0.2(a) “a Performance Solution” and A0.5(b)(ii) “other Verification Methods”</td></tr>
<tr><td colspan="2">Clause C3.2 stipulates that the openings within 6 m from another building on the allotment to be protected in accordance with C3.4 being drenchers over fixed glazing, FRL -/60/- fire-resisting windows or FRL -/60/- fire shutters.</td><td rowspan="4">Performance solution 2

As shown in Figure 1, the proposed Performance Solution is based on:
(i) the external door of the BOH & Loading area within the proposed hotel building is to be a self-closing fire door having an FRL of -60/30; and
(ii) the protection methods for the openings within the external walls of both the proposed hotel building and the existing club building to be determined by calculations of the radiant heat flux to / from the other building.

Openings in external walls of the proposed hotel building within 6 m from the existing club building are to not be protected in accordance with BCA clause C3.4.</td></tr>
<tr><td>BCA Clause</td><td>C3.2</td></tr>
<tr><td>Relevant performance requirement(s)</td><td>CP2</td></tr>
<tr><td>Assessment method</td><td>Qualitative and quantitative assessment, based on BCA A0.2(a) “a Performance Solution” and A0.5(b)(ii) “other Verification Methods”</td></tr>
<tr><td colspan="2">Clause E1.3 refers to a fire hydrant system being installed in accordance with AS 2419.1–2005, with clause 7.3 of AS 2419.1 stipulating that a fire brigade booster assembly be located within sight of the main entrance to the building.</td><td rowspan="4">Performance solution 3

The performance solution is based on:
(i) the existing fire hydrant booster assembly being located on Forrester Road and is not within sight of the new hotel building; and
(ii) a block plan to be provided at each of the fire indicator panels, the main entry of the site and the main entrance of the proposed hotel building, indicating the location of the booster assembly.

The fire hydrant booster is not to be located within sight of the main entrance of the proposed hotel building.</td></tr>
<tr><td>BCA Clause</td><td>D1.4</td></tr>
<tr><td>Relevant performance requirement(s)</td><td>EP1.3</td></tr>
<tr><td>Assessment method</td><td>Qualitative assessment, based on BCA A0.2(a) “a Performance Solution” and A0.5(b)(ii) “other Verification Methods”</td></tr>
</table>

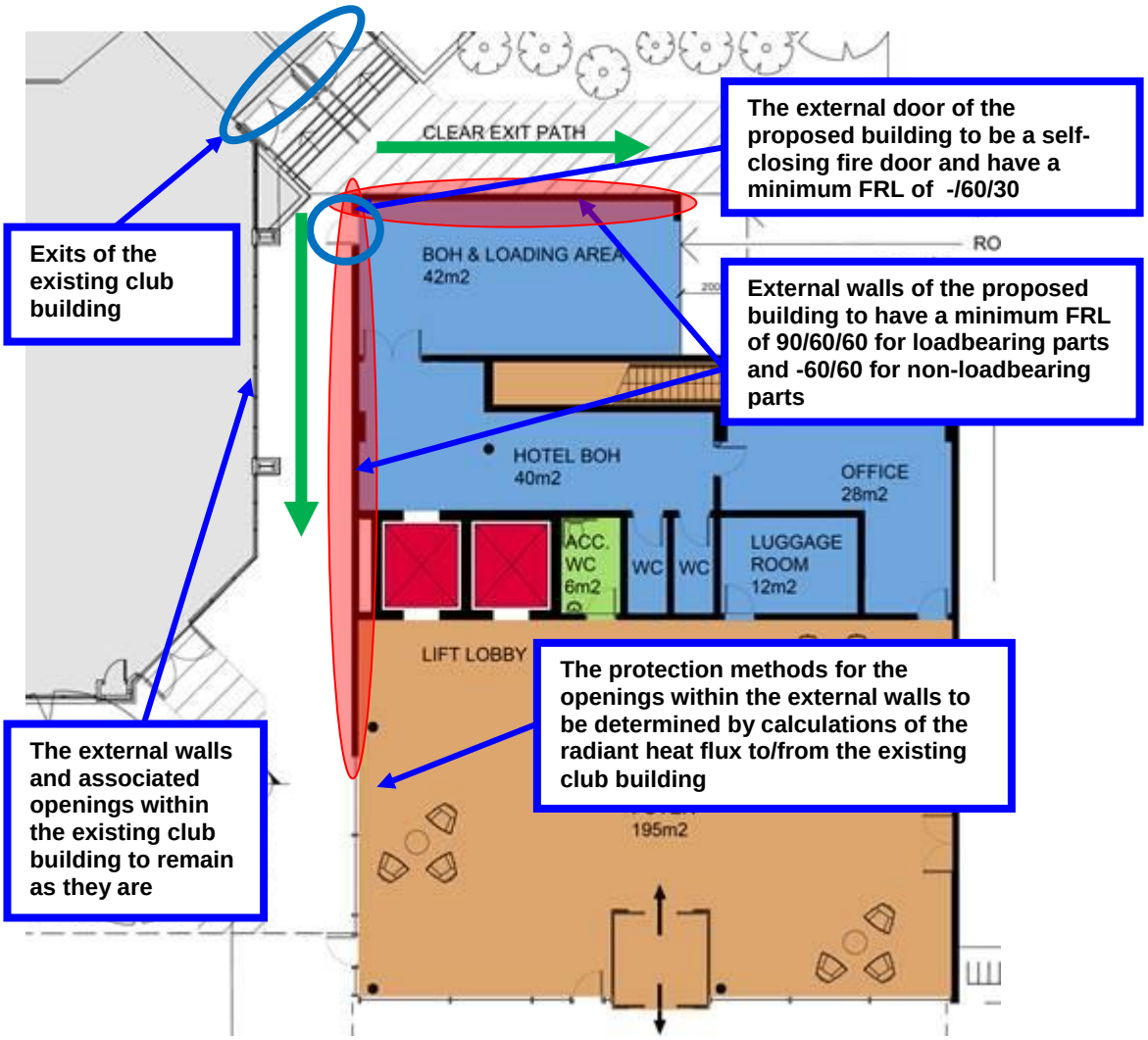

Figure 1 Protection methods of external walls and associated openings of both buildings

Note that the egress paths (indicated by the green arrows in Figure 1) from the exits of the existing club building have an aggregate unobstructed width not less than that of the existing exits, therefore it complies with clause NSW D1.6 of the BCA.

The BCA DtS non-compliances identified by the BCA consultant detailed above can therefore be readily addressed with a fire engineering performance solution to be undertaken during the design development phase of the project, which will include a fire engineering brief and fire engineering report, without the need for any significant changes to the building design.

Should you have any further queries regarding this, please do not hesitate to contact the undersigned.

Yours faithfully

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