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DEVELOPMENT APPLICATION REPORT				Fire Engineering
Project Name:	Wenona School Project Archimedes		Document No.	CA02
Project No:	31943900			
Client:	Wenona School C/- APP Corporation Pty Ltd		Issued for: DA	
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Subject: Fire safety engineering assessment of DA plans – Wenona School Project Archimedes, 255-265 Miller Street, North Sydney

This development application report indicates the proposed fire safety design strategy for a new multi-function school building, which is to consist of a new building at 255-265 Miller Street and minor alterations to the existing school building at 261 Miller Street.

As stipulated within the NSW Environmental Planning & Assessment (EP&A) Regulation 2000, the proposed development is to comply with the Building Code of Australia (BCA). Based on required compliance with BCA 2014, as advised by the Blackett Maguire + Goldsmith, a description of the parameters pertaining to the development, in the context of the requirements and definitions provided within the BCA, is provided in Table 1.

Table 1 - 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 more than 12 metres and less than 25 metres.
A3.2	Occupancy classification	The building will be of Class 9b educational use.
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.
C2.2	Fire compartment size limitations	Fire compartment size limitations for class 9b occupancies of Type A construction are as follows: • 8,000 m^2 • 48,000 m^3 These fire compartment size limitations will not be exceeded.

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 A0.5(c) of the BCA, which permits compliance to be achieved via one or a combination of the following:

- meeting the BCA deemed-to-satisfy provisions; or
- formulating an alternative solution that either demonstrates compliance with the relevant BCA performance requirements directly or demonstrates fire safety equivalence with the deemed-to-satisfy provisions.

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

- BCA clause A0.9(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 A0.9(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 alternative solutions will be established in consultation with the relevant authorities having jurisdiction, the design team and the owner's representative. This process will continue throughout the development of the design.

For consideration of the impact of the impending fire engineering strategy on the design of the development, Exova Warringtonfire Aus Pty Ltd has undertaken a preliminary fire safety engineering assessment of the DA architectural plans for the proposed development (architectural drawing set dated 24th April, 2015), together with BCA 2014 compliance assessment documentation prepared by Blackett Maguire + Goldsmith (preliminary BCA review, dated 27th February, 2015). From the assessment undertaken, it is considered that the matters identified that are likely to form fire safety engineering alternative solutions can be readily addressed, enabling the proposed development to readily achieve compliance with the relevant fire safety-related provisions of the BCA. The areas of design where fire engineering assessment will be required, as identified in the preliminary BCA review, are as follows:

+ **MATTERS REQUIRING FIRE SAFETY ENGINEERED ALTERNATIVE SOLUTIONS**

1.	BCA cl. C2.7 & C3.5:	As stated above, a 2hr fire wall is proposed between the proposed new building and existing building. It is anticipated that the fire rated construction will incorporate drencher protected glazed partitions, fire curtains, and other alternative methods of achieving the required fire rating in lieu of the methods prescribed in the DTS provisions of the BCA.
2.	BCA cl. C3.3:	Openings in external walls of different fire compartments require protection where situated
3.	BCA cl. D1.4:	Exit travel distance to a point of choice of up to 25m is proposed in lieu of BCA DTS prescribed maximum of 20m at Ground Floor level.
4.	BCA cl. D1.5:	Distance between alternative exits at Lower Ground 3 (Basement) level is 73m in lieu of BCA DTS prescribed maximum of 60m.
5.	BCA cl. D1.3 & D1.7:	The required fire isolated exit at Gridline H7 does not discharge to a road or open space, nor to a covered area complying with D1.7(b)(iii).
6.	BCA cl. D1.12:	The central open 'non-required' stairway connects (indirectly) five storeys and is not proposed to be enclosed in construction complying with BCA Spec. D1.12.
7.	BCA cl. E1.3 & AS 2419.1-2005:	Subject to advice from the fire services design consultant, an Alternative Solution may be required with respect to the fire hydrant booster location, particularly the construction adjacent to the booster assembly.
8.	BCA Part G3:	The building will contain a central atrium connecting (indirectly) six (6) levels. As such, fire safety Alternative Solutions will be required to the following BCA provisions relating to atriums: + G3.2: Dimensions of atrium well. + G3.3: Separation of atrium by bounding walls. + G3.4: Construction of bounding walls. + G3.8 & Spec. G3.8: Fire & Smoke control systems (particularly smoke control system).

Please note that the above matters have been identified arising from a review of the schematic design architectural plans. A further detailed assessment of the architectural plans will be undertaken as part of the preparation of the detailed design documentation.

As the proposed development interfaces with the existing school building at 261 Miller Street, provision will be made for compartmentation of the existing building on each storey, such that the level of fire safety in this building can remain generally unaffected by the new works.

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

Yours faithfully

James Dominguez
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For and on behalf of Exova Warringtonfire Aus Pty Ltd.