



Umow Lai

Our Ref: SSGS0101 Rev B

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SSDA Statement for Fire Engineering - Sikh Grammer School (Rouse Hill) (DRAFT)

Dear Craig,

Please find below our fire engineering statement to accompany the SSDA submission for the proposed development of the Sikhs grammar School Sydney (Rouse Hill Campus).

As part of our concept fire engineering review, we have considered the following documentation:

- Building Code of Australia Assessment Report by Group DLA
- Consultant Coordination Architectural plans by PMDL dated 18th March 2019, Rev 1

Table 1 provides a list of proposed fire engineered Performance Solutions for the project to address non-compliances identified in the BCA Report, and based on discussions with the architects PMDL. Comments are provided which include foreseen additional measures required to support each solution.

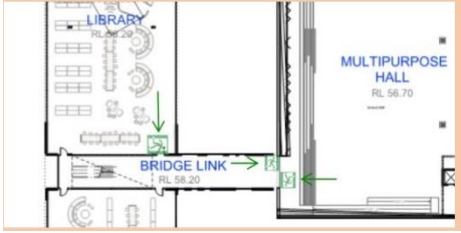
As part of the detailed design stage of the project these will be formally addressed by way of Fire Engineering Performance Solutions to support the application for a Construction Certificate (CC) for the project. A Fire Engineering Brief and Fire Engineering Report will be developed as part of this process.

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Table 1 Non-compliances with DTS provisions requiring Performance Solutions

No.	Clause	Potential Performance Solution (From BCA Report)	Comments
Boarding house			
1.	C1.1, C3.11	Ground Floor: Omission of bounding construction fire separation between the common areas, i.e. open lounge, kitchen, games room etc.	Recommended that this is addressed by design change to ensure BCA DTS compliance is achieved. We understand this has been addressed.
2.	C2.14	The common corridor is more than 40 m in length without smoke proof wall / door intervals. This is due to the common corridor area throughout the building being connected by the central open stair and communal area on Ground Level.	Feasible to be addressed by Fire Engineering. The central stair lobby is to be fire separated from the rest of the building. The lift being located within the stair lobby shall be addressed as part of the Performance Solution. Where the common corridor is more than 40m in length, smoke doors on held-open devices are recommended to be installed.
3.	D1.3, D1.7	The central exit stair contains the following non-compliances: a) Connects more than 3 storeys (actual: 5 Storeys) and is not fire isolated from the remainder of the building. b) Discharges internally to the building rather than direct to open space.	Feasible to be addressed by Fire Engineering on the basis that the central stairs are fire separated from the rest of the building.
4.	D1.3	The eastern exit stair contains the following non-compliances: a) Connects more than 3 storeys (actual: 4 Storeys) and is not fire isolated from the remainder of the building.	Recommended that the stairs are fire separated from the rest of the building.
5.	E1.3	The central fire stair exit (fire engineered not to be fire isolated) will not have a fire hydrant not located within it.	As the central Fire stairs are to be fire isolated from the remainder of the building, fire hydrants are to be provided at each Level within 4m of the stairs.
6.	G3.2, G3.3, G3.4, G3.6, G3.8	Boarding House - Omission of a number of the atrium provisions such as smoke exhaust, undersized atrium wells, bounding walls set back more than 3.5m, omission of roof protection and possibly other BCA Specification G3.8 short falls. Mechanical and Fire Services Engineer to advise.	It is assumed that the fire separation of the fire stairs would not trigger the requirements of the G3 atrium provisions. If it does, it is still considered feasible to be addressed by Fire Engineering.
School Complex			
7.	C3.3, C3.4	Basement Carpark - The opening to the pedestrian ramp area servicing the Basement Carpark is positioned within 6 m of the Primary School complex which is a separate fire compartment. The openings to the carpark may be difficult/impossible to treat. The Fire Safety Engineer to review and confirm if a justifiable Performance Solution is feasible. Fire separation to the adjacent wall of the Primary School building may or may not need to be fire rated as part of this review.	Feasible to be addressed by Fire Engineering. Detailed assessment of the openings will be required during the detail design stage.

8.	D1.9	<p>Level 3 exit stairs – Contain the following non-compliances:</p> <p>a) Discharge at level 2, rather than ground level.</p> <p>b) Cause a travel distance more than 80 m to the ground floor external exits (open space).</p>	<p>Supportable by Fire Engineering on the basis that additional exits are provided including horizontal exits to neighbouring buildings.</p>
9.	D2.20, D1.11	<p>Level 2 & 3 - Horizontal exit doors – The following considerations have been noted:</p> <p>a) The southern door from the library to the bridge does not swing in the direction of egress, for secondary school evacuating occupants.</p> <p>b) Horizontal exit doors are required to be illustrated at the Multipurpose Hall compartment line to bridge junction.</p>  <p>c) That the BCA deemed-to-satisfy provisions do not permit horizontal exits in a secondary or primary school building.</p> <p>d) The space on the opposite side of the door may contain shortfalls in terms of the number of permitted occupants – TBC by GDLA</p>	<p>a) Given that the Library may accommodate a large number of occupants, it is recommended that additional doors are provided to swing in the direction of egress.</p> <p>b) Design change required as indicated in the BCA report.</p> <p>c) The non-compliance associated with horizontal exits is feasible to be addressed by a Fire Engineering solution.</p> <p>d) TBC by Group DLA as per comments in the BCA report.</p>
10.		<p>Its understood that the requirement for smoke exhaust throughout the building will be considered for rationalisation by the Fire Safety Engineer, with the main trade off being a compliant sprinkler system.</p>	<p>It is recommended that the fire compartment sizes are limited to less than 2,000 m² in area to avoid the requirement for smoke exhaust. There is limited basis to Fire Engineer out the requirements for smoke exhaust systems.</p>
General Site Wide			
11.	D1.4, D1.5, D1.6	<p>Multiple travel distance non-compliances as indicated within Table 5 of the BCA report.</p>	<p>A number of travel distance non-compliances are identified within the BCA report but are subject to change based on the revised architectural layouts. It is recommended that the travel distances are reassessed by the BCA consultant.</p> <p>Fire Engineering solutions are possible to address 50% increase in travel distances on the basis of additional fire safety measures provided to offset the extended travel distances</p>

If you have any queries in this regard please don't hesitate to contact me.

Yours Sincerely

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