

Job no SY130111

24/04/2015

Ms Alissan Serra
Savills Project Management
Level 7, 50 Bridge Street
Sydney NSW 2000

Dear Alissan

161 Sussex Street, Sydney – Four Points by Sheraton – Fire safety engineering review

The design of the proposed development at 161 Sussex Street incorporates alternative solutions complying with the performance requirements of the National Construction Code Series 2013 Volume One – Building Code of Australia (BCA). Defire have documented these in alternative solution report SY130111 R1.5 dated 24 March 2015 at the request of Savills Project Management on behalf of GL Investment Co.

We have prepared this statement following a review of the proposed section 96 modification for an additional lift documented in the drawings and information listed in Attachment 1. The purpose of the review is to assess whether the proposed modifications are consistent with the alternative solution report which has been prepared.

The alternative solutions identified to date are listed in Table 1.

No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)	Method of meeting performance requirements	Assessment method
1.	<p>The maximum travel distances within fire compartment 1 on the lower ground, ground and mezzanine floors are:</p> <ul style="list-style-type: none"> Up to 25m to a point of choice to two alternative exits in lieu of 20m Up to 60m to the nearest of two exits in lieu of 40m Up to 90m between alternative exits in lieu of 60m 	Clauses D1.4 and D1.5	DP4 and EP2.2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
	<p>A performance-based smoke hazard management system is proposed in the circulation areas on the lower ground, ground and mezzanine floors of the hotel including:</p> <ul style="list-style-type: none"> Smoke exhaust inlet locations and quantities Omission of smoke exhaust from all day dining restaurant and back of house areas 	NSW table E2.2b and specification E2.2b			



No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)	Method of meeting performance requirements	Assessment method
2.	<p>The maximum travel distances within the northern ground floor and mezzanine floors proposed are:</p> <ul style="list-style-type: none"> Up to 30m to a point of choice to two alternative exits in lieu of 20m Up to 50m to the nearest of two exits in lieu of 40m 	Clauses D1.4 and D1.5	DP4 and EP2.2	Equivalent to DTS A0.5(b)(ii)	Comparison to DTS A0.9(c)
3.	The mezzanine floor is provided with an aggregate exit width of 13m in lieu of 18m.	Clause D1.6	DP4, DP6 and EP2.2	Equivalent to DTS A0.5(b)(ii)	Comparison to DTS A0.9(c)
	More than half of the aggregate width of exits from the ground and mezzanine floors discharge via the porte cochere, northern courtyard and commercial foyer courtyard to Sussex Street which is considered as the main entry to the building.	NSW clause D1.10	DP4	Equivalent to DTS A0.5(b)(ii)	Comparison to DTS A0.9(c)
4.	Travel distances from the sole-occupancy units in the hotel tower on levels 2 to 15 are up to 8m to a point of choice in lieu of 6m.	Clause D1.4	DP4 and EP2.2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
5.	The maximum fire rating for the class 6 all day dining restaurant and kitchen areas on the ground floor is reduced from 180 minutes to 120 minutes.	Clauses C1.1, C2.8, C2.9 and specification C1.1	CP1 and CP2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
6.	The fire control room is accessible from a single door, direct from the front entrance of the site in lieu of two accessible paths.	Clause E1.8 and specification E1.8	EP1.6	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
7.	The point of discharge of fire isolated stair 3 is in the northern ground floor lobby, within the confines of the building. An alternative discharge location is also provided on the lower ground floor at the bus parking bays on Slip Street.	Clause D1.7	CP2, DP4, DP5 and EP2.2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
8.	The point of discharge of fire isolated stair 2 is in the main ground floor lobby, within the confines of the building.	Clause D1.7	CP2, DP4, DP5 and EP2.2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
	The path of travel from the discharge location of stair 2 and 56 to open space necessitates passing through a 1.8m pinch point.	NSW Clause D1.6	DP4 and DP6		



No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)	Method of meeting performance requirements	Assessment method
9.	The roof trusses forming the roof structure of the northern and southern convention rooms on the mezzanine floor are to be constructed with steel in lieu of achieving the required FRL of 120/-/. The trusses will be lined on the underside with a fire protective covering.	Clause C1.1 and specification C1.1	CP1	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
10.	The Wharf Lane bridge is to be constructed with a steel structure and timber floor in lieu of achieving the required FRL of 120/-/ and 120/120/120 respectively.	Clause C1.1 and specification C1.1	CP1	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
11.	<p>Access to fire-isolated stair 54 from the mezzanine floor is via a fire door from fire-isolated stair 55 in lieu of providing independent egress and separation between rising and descending flights of the two stairs.</p> <p>The stair pressurisation system is not proposed to achieve a 1m/s flow rate through the door from stair 55 opening into stair 54 as required by AS/NZS 1668.1-1998. A 1m/s flow rate is proposed to be achieved across the double fire doors leading from the southern convention room.</p>	Clauses D1.7, D2.4, E2.2 and table E2.2a	CP2, DP4, DP5 and EP2.2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
12.	<p>The following façade support structures are proposed to be constructed with steel in lieu of achieving the required FRL of 120/-/:</p> <ul style="list-style-type: none"> • Porte cochere • Northern courtyard • Northern glazed link • Commercial foyer and lift lobby • Southern pre-function <p>In addition, the BMU scissor lift parking enclosures on the mezzanine floor are not proposed to be fire rated.</p>	Clause C1.1 and specification C1.1	CP1	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)



No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)	Method of meeting performance requirements	Assessment method
13.	The glazed egress doors from the northern lobby into the northern courtyard are located within 3m of the door from the central warehouse compartment. The doors are not fire-rated.	Clauses C3.3 and C3.4	CP2	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)
14.	Sprinklers are not proposed to be provided under raised floors subject to compliance with clause 5.6.1 of AS 2118.1-2006.	Clause E1.5 and AS 2118.1-1999	EP1.4	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)

Table 1 List of alternative solutions

The areas of the design which impact upon fire brigade operations were discussed with Fire and Rescue NSW in a fire engineering brief meeting held on 12 February 2014. This includes smoke hazard management, travel distances, discharge of fire-isolated stairs and access to the fire control room. Fire and Rescue NSW were supportive of the design proposed.

It is Defire's professional opinion that the section 96 modification for an additional lift does not impact on the alternative solution report which has been prepared for the development.

It is noted that further alternative solutions may be identified during the ongoing design development process in consultation with the design team.

Please contact me on 02 9211 4333 if you have any questions.

Yours sincerely

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Defire – Innovative fire safety

Jason Jeffress
Managing director
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Accredited certifier C10 – BPB 197



Attachment 1 Drawings and information

Drawing title	Dwg no	Date	Drawn
Ground level plan	A-DA-0201 rev Q	01/04/2015	Cox Architecture
Mezzanine level plan	A-DA-0202 rev Q	01/04/2015	Cox Architecture
Level 01 floor plan	A-DA-0203 rev R	01/04/2015	Cox Architecture
Level 02 floor plan	A-DA-0204 rev Q	01/04/2015	Cox Architecture
Level 03 floor plan	A-DA-0205 rev N	01/04/2015	Cox Architecture
Level 04 to level 10 typical floor plan	A-DA-0206 rev N	01/04/2015	Cox Architecture
Level 11 to level 14 typical floor plan	A-DA-0207 rev N	01/04/2015	Cox Architecture
Level 15 – plant level plan	A-DA-0208 rev R	01/04/2015	Cox Architecture
Level 16 to level 24 – typical commercial level plan	A-DA-0209 rev Q	01/04/2015	Cox Architecture
East elevation	A-DA-0302 rev P	01/04/2015	Cox Architecture

Other information	Ref no	Date	Prepared by
BCA 2013 Report – Four Points by Sheraton Redevelopment	13-201181_FourPointsRedev_ RevisedBCAReport_R03_17042014	17/04/2014	Philip Chun Building Surveying