



**Defire**

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Job No. SY090170

12 February 2010

Onofrio Marzulli  
Group GSA  
Level 7, 80 William St  
East Sydney NSW 2011

Dear Onofrio

**Costco – 17-21 Parramatta Road, Lidcombe: Preliminary review of fire engineering issues**

The design of Costco Wholesale at 17-21 Parramatta Road, Lidcombe is proposed to incorporate alternative solutions complying with the performance requirements of the Building Code of Australia (BCA) 2009. A preliminary fire safety engineering review of the proposed design has been undertaken by Defire. The review was based on the BCA 2009 capability statement – Proposed Costco warehouse prepared by Philip Chun & Associates, 12 February 2010 and the following drawings:

Drawing title	Dwg no	Date	Drawn
Title sheet and location plan	TS-0100-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Site plan	SD-1100-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Basement floor plan – Parking 2	A1-2001-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Ground floor plan – Parking 1	A1-2002-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Level 1 floor plan – Retail floor	A1-2003-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Mezzanine floor plan – Regional office	A1-2004-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Roof plan	A2-2005-DA rev D	08/02/10	Mulvanny G2 / Group GSA
South and west elevations	A3-3000-DA rev D	08/02/10	Mulvanny G2 / Group GSA
North and east elevations	A3-3001-DA rev D	08/02/10	Mulvanny G2 / Group GSA
Sections	A4-3100-DA rev D	08/02/10	Mulvanny G2 / Group GSA

The intent of the review was to determine whether we believe it is feasible to undertake a fire safety engineering assessment to develop alternative solutions to the deemed-to-satisfy (DTS) provisions of BCA. Defire undertook the review at the request of Group GSA on behalf of Costco Wholesale.

The alternative solutions which have been identified are listed in the following table:

No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)
1.	Reduction of the fire rating of internal columns supporting the roof to nil (in lieu of 60/-/-).	Specification C1.1	CP1 and CP2
2.	Travel distance within the retail floor to a point of choice between alternative exits exceeds 20m (up to 30m).	Clause D1.4	DP4, DP6 and EP2.2
	Travel distance within the retail floor to the nearest of alternative exits exceeds 40m (up to 60m).		
	Travel distance within the retail floor between alternative exits exceeds 60m (up to 120m).	Clause D1.5	
	Shortfall in aggregate exit width from the retail floor.	Clause D1.6	
	Performance based smoke hazard management within retail floor. <ul style="list-style-type: none"> <li>Size of smoke zone greater than 2,000m<sup>2</sup>.</li> <li>No exhaust in back-of-house areas.</li> <li>Performance based smoke exhaust rates.</li> </ul>	Clause E2.2	
3.	Travel distance within the office level to the nearest of alternative exits exceeds 40m (up to 50m).	Clause D1.4	DP4 and EP2.2
	Travel distance within the office level between alternative exits exceeds 60m (up to 70m).	Clause D1.5	
4.	Travel distance within the carpark levels to a point of choice between alternative exits exceeds 20m (up to 30m).	Clause D1.4	DP4 and EP2.2
	Travel distance within the carpark levels to the nearest of alternative exits exceeds 40m (up to 70m).		
	Travel distance within the carpark levels between alternative exits exceeds 60m (up to 120m).	Clause D1.5	
5.	Some parts of the perimeter vehicular access are not within 18m of the building.	Clauses C2.3 and C2.4	CP9

Issues pertaining to fire brigade operations – including perimeter vehicular access, location of fire control centre and hydrant locations – will be discussed with NSW Fire Brigades as part of the fire engineering brief process.

It is Defire's professional opinion that it is possible to develop alternative solutions for the issues identified to demonstrate compliance with the relevant performance requirements of the BCA without major changes to the proposed design.

The specific details of the proposed alternative solutions are subject to the development of a comprehensive list of fire safety measures and the outcomes of the required fire safety engineering assessment. The alternative solutions for the building will be developed as part of the ongoing design and development process.



Please contact Victor Tung of Defire on 02 9211 4333 if you have any questions.

Yours sincerely

A handwritten signature in black ink, appearing to be "Victor Tung", written over a faint, light-colored rectangular stamp or watermark.

Victor Tung  
Accredited fire safety engineer  
Defire