

Job no SY160190

27/03/2017

Timothy Hill
Costco Wholesale Australia Pty Limited
17-21 Parramatta Road
Lidcombe NSW 2141

Dear Tim

Costco Wholesale facility, Oakdale South Estate – Preliminary fire safety engineering review

This letter supports a State Significant Development Application (SSD 6917) submitted to the Minister for Planning pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Development Application (DA) seeks approval for construction of the Costco Wholesale facility to be located on Development Site 4A within Precinct 4 of the Oakdale South Estate.

The subject site is bound by Estate Road 1 to the north west, the estate boundary to the east and riparian corridor to the north. Development Site 4A has an area of 14.27 hectares with access provided via Estate Road 1.

The proposed warehouse and distribution facility to be operated by Costco Wholesale will comprise the following:

- A warehouse building with GFA of 33,588m²
- Office space with GFA of 1,689m²
- Amenity room with GFA of 16m²
- Guard house with GFA of 72m²
- Main switch room with GFA of 141m²
- Refrigeration plant room with GFA of 186m²
- Refrigeration switch room with GFA of 53m²
- 169 loading docks, hardstand area around the warehouse building
- Car parking for 328 spaces with access via Estate Road 1
- A separate truck entry / exit point from Estate Road 1
- On-lot stormwater, infrastructure, fire services and pump room
- Signage
- Landscaping.

The design of the proposed Costco Wholesale facility will incorporate performance solutions complying with the performance requirements of National Construction Code Series Volume One – Building Code of Australia (BCA)¹. Defire has undertaken a preliminary fire safety engineering review of the proposed design for the development application submission at the request of Costco Wholesale Australia. The review was based on the drawings and information listed in Attachment 1.

¹ National Construction Code 2016, Volume One – Building Code of Australia, Australian Building Codes Board, Australia.



The intent of the review was to determine whether we believe the design can be demonstrated to achieve compliance with the performance requirements of the BCA.

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

Item	Description of performance solution	DTS provision	Performance requirement	Comment
1.	Perimeter access is greater than 18m from the building in some areas. Note: Worst case is located approximately 50m from the southern façade of the stage 1 development, to accommodate future stage 2 extension.	Clause C2.4	CP9	Vehicular access proposed will not adversely impact brigade intervention activities.
2.	The travel distances to the nearest exit is greater than 40m within the warehouse – up to 60m.	Clause D1.4	DP4 and EP2.2	Safe occupant evacuation will be demonstrated taking into account provision of sprinklers, smoke exhaust and size of smoke reservoir.
3.	The travel distances between alternative exits within the warehouse is greater than 60m – up to 105m.	Clause D1.5	DP4 and EP2.2	
4.	The booster is not deemed to be located at the boundary of the site. The proposed booster location is setback from the boundary, along the vehicular pathway, by approximately 85m.	Clause E1.3 and AS 2419.1-2005	EP1.3	Signage / block plans will be provided.
5.	The external hydrants are located less than 10m from the building however are not safeguarded by 90/90/90 construction.	Clause E1.3 and AS 2419.1-2005	EP1.3	Justified on the basis of sprinkler protection within the building.
6.	The location of the fire control centre involves a change in level of more than 300mm to a road or open space – approximately 1.3m.	Specification E1.8	EP1.6	Access to fire control room will not adversely impact brigade intervention activities.
7.	The design of the automatic smoke exhaust system will be performance based with respect to: <ul style="list-style-type: none"> • Size of smoke zone greater than 2,000m² • Performance based smoke exhaust rates • No smoke exhaust in office areas 	Clause E2.2	EP2.2	Safe occupant evacuation will be demonstrated taking into account provision of sprinklers, smoke exhaust and size of smoke reservoir.
8.	Direction exit signs within the warehouse are proposed to be located higher than the maximum 2.7m prescribed by AS 2293.1-2005 – up to 4m.	Clause E4.8	EP4.2	Justified on the basis the signs will be legible considering the viewing distance and size of signs. The potential for obstruction due to smoke will also be considered.

Table 1 Preliminary list of performance solutions



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

The details of the proposed performance solutions are subject to the outcome of the fire engineering brief and analysis which will be carried out in accordance with the International Fire Engineering Guidelines (IFEG)².

The performance solutions for the building will be developed as part of the ongoing design and development process and documented in a format suitable for submission to the relevant approval authorities. It is noted that additional performance 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

Victor Tung
Accredited fire safety engineer
Defire – Innovative fire safety

² International Fire Engineering Guidelines – Edition 2005, Australian Building Codes Board, Australia.



Attachment 1 Drawings and information

Drawing title	Dwg no	Date	Drawn
Title sheet & drawing list	DA0001 rev E	24/03/17	Group GSA
Site plan	DA1101 rev G	24/03/17	Group GSA
Site plan stage 1	DA1101.1 rev E	24/03/17	Group GSA
Area floor plan	DA1103 rev E	24/03/17	Group GSA
Area floor plan stage 1	DA1103.1 rev C	24/03/17	Group GSA
Overall plan – detail callout plan	DA2001 rev E	24/03/17	Group GSA
Roof plan	DA2002 rev E	24/03/17	Group GSA
Ground floor plan – zone D	DA2013 rev D	24/03/17	Group GSA
Concept elevation	DA3001 rev E	24/03/17	Group GSA
Concept elevation	DA3002 rev E	24/03/17	Group GSA
Concept elevation	DA3003 rev A	24/03/17	Group GSA
Concept elevation callout	DA3010 rev E	24/03/17	Group GSA
Overall sections	DA3101 rev D	24/03/17	Group GSA

Other information	Ref no	Date	Prepared by
Draft Building Code of Australia 2016 report – Proposed Costco depot, Oakdale South Industrial Estate	16-207694_Costco_OakdaleDepot_BCAREportR03_230317	23/03/17	Philip Chun Building Code Consulting