Job no SY140167

11/11/2014

Anthony Green
Frasers Property Australia
Level 11 Bathurst Street
Sydney NSW 2000

Dear Anthony

Central Park Block 11 – Preliminary fire safety engineering review

The design of the proposed development known as Central Park Block 11 at O'Connor Street, Chippendale will incorporate alternative solutions complying with the performance requirements of the National Construction Code Series 2014 Volume One – Building Code of Australia (BCA).

Block 11 is a mixed use/residential building, with associated non-residential/retail uses located on lower levels of the building consistent with the Concept Plan. The proposed building has a rise in storeys of 14, containing class 2 residential sole occupancy units located above three levels of basement car parking, service area and storage for residents.

Defire has undertaken a preliminary fire safety engineering review of the proposed design for the development applications submission at the request of Frasers Property Australia. The review was based on the drawings and information listed in Attachment 1. 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 alternative solutions identified to date are listed in Table 1.

Item	Description of alternative solution	DTS provision	Performance requirement	Comment
1.	The building contains public corridors more than 40m in length, without division by smoke walls and doors, as follows: • Level 2 - 8 west: 43m • Level 10 - 13 : 47m	Clause C2.14	CP2 and DP4	The minor increase in corridor length can be addressed an al alternative solution considering the general reduction in hazard resulting from sprinkler protection.
2.	The class 7b storage areas within the basement carpark B2 may exceed 10% of the total floor area in aggregate. The maximum fire rating of the basement levels is proposed to be reduced to 120 minutes in lieu of 240 minutes required for class 7b use.	Specification C1.1	CP1 and CP2	Individual storage areas must be limited to not more than 10% of the total floor area of the storey. Where appropriate physical separation cannot be achieved, further fire separation of the storage areas may be necessary.

Item	Description of alternative solution	DTS provision	Performance requirement	Comment
3.	The design includes openings in external walls located within 3m of the Balfour Park allotment boundary which are not proposed to be protected in accordance with clause C3.4 of the BCA.	Clause C3.2	CP2	Balfour Park is not considered to represent a risk of fire spread. Written confirmation will be required to confirm that buildings will not be constructed within 6m of the subject openings and that a suitable legal instrument is in place to prevent this from occurring.
4.	The existing Castle Connell Hotel is a separate building on the same allotment. Windows in the external wall of Hotel, less than 1.5 m of the new building are required to be protected in accordance with clause C3.4 of the BCA. Windows in the new building within 6m of the Hotel external walls and subject vertical projection are required to be protected.	Clause C3.2	CP2	The Hotel is to be separated from the adjoining parts of the new building by fire rated construction in accordance with specification C1.1 of the BCA. It is understood that the existing hotel is to be sprinkler protected in accordance with AS 2118.1-1999. On this basis it is considered that an alternative solution can be prepared to rationalise the extent of protection required to openings in the facade of the new building. Some openings may still require a degree of protection subject to detailed fire engineering analysis.
5.	The ground floor west retail unprotected external wall in the north elevation is exposed to and within 4m the external wall of the adjoining unit.	Clause C3.3	CP2	Openings in the external wall of the retail tenancy may be unprotected provided that the external wall of the adjoining unit achieves an FRL of not less than 120/120/120.
6.	All parts of a building with an effective height in excess of 25m require access to not less than two exits. The ground floor contains areas which will only have access to one exit.	Clause D1.2	DP4	The subject areas do not present the hazards intended to be addressed by the BCA in requiring two exits from all parts of a high-rise building. An alternative solution can be developed to allow a single exit from these areas.
7.	The design includes the following extended travel distances from the basement levels: • The area around B1 car spaces 8 to 12 that is more than 40m to exit. Up to 48m to nearest exit. • Egress from the energy transfer station is 24.5m to a point of choice on an open floor plan. • The maximum travel distance between alternative exits measured via the point of choice in the western storage area on basement 2 is 105m.	Clause D1.4 and D1.5	DP4 and EP2.2	The areas identified represent minor departure from the DTS provisions and can be addressed by an alternative solution.

Item	Description of alternative solution	DTS provision	Performance requirement	Comment
8.	The design includes the following extended travel distances in residential areas: • 12m to an exit or point of choice between alternative exits from typical sole occupancy units. • 12m to an exit or point of choice from the common entry door of the dual key units. The maximum travel distance from the entry doors of the individual units to the common entry door must not exceed 6m. • The distance between alterative exits into the scissor stairs in some instances in less than 9m. • The distance between alternative exits on level 2 central block is 52m.	Clause D1.4 and D1.5	DP4 and EP2.2	The alternative solution will be based on the following: • Sprinkler protection which limits the risk of significant smoke spread to the common areas. • Smoke seals to all unit entry doors to further mitigate the risk of smoke spread to the common areas. • Smoke detectors spaced in accordance with AS 1670.1-2004 in public corridors where extended travel distances occur.
9.	A zone smoke control system is not proposed to be provided to the ground floor retail (class 6) and class 9b areas.	Clause E2.2	EP2.2	An alternative solution can be developed to omit zone smoke control. The class 6 and 9b areas must be fire separated from the adjoining residential areas by fire-rated construction.
10.	The open fire isolated scissor stairs serve storeys in excess of 25m and cannot be pressurised.	Clause E2.2	EP2.2	The stairs are provided with one open side which can be expected to provide smoke ventilation in lieu of stair pressurisation. Further fire engineering analysis is required to demonstrate the ability of the stair design to mitigate smoke hazards. We note that further consultation with the stakeholders, in particular Fire and Rescue NSW, is required in relation to this issue. As such we recommend that contingency for stair pressurisation is retained.

Table 2 Preliminary list of alternative solutions

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 details of the proposed alternative 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. The fire engineering brief process will include consultation with Fire and Rescue NSW.

The alternative 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 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

Chris Jamieson
Fire safety engineer
Defire – Innovative fire safety

Attachment 1 Drawings and information

Drawing title	Dwg no	Rev	Drawn
Ground level	SSDA 11 200	01	FJMT
Level 1	SSDA 11 201	01	
Level 2	SSDA 11 202	01	
Level 3	SSDA 11 203	01	
Level 4-6	SSDA 11 204	01	
Level 7	SSDA 11 205	01	
Level 8	SSDA 11 206	01	
Level 9	SSDA 11 207	01	
Level 10-12	SSDA 11 208	01	
Level 13	SSDA 11 209	01	
Roof	SSDA 11 210	01	
Basement 3	SSDA 11 211	01	
Basement 2	SSDA 11 212	01	
Basement 1	SSDA 11 213	01	
North and south elevations	SSDA 11 401	01	
East and west elevations	SSDA 11 402	01	

Other information	Reference	Date	Prepared by
BCA report	RE142442 issue 3	4 November 2014	City Plan Services