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Job No. 2016/3570

Wednesday, June 26, 2019

Scentre Design and Construction Pty Limited
85 Castlereagh Street
Sydney NSW 2000

Email: cterkalas@scentregroup.com

Attention: Christopher Terkalas

RE: Westfield Liverpool – Level 2 (Ground) and roof top restaurant works
Preliminary BCA Assessment (Rev 5.1)

EXIT WIDTH ASSESSENT

Cinema reconfiguration

Level	Class	Approx GFA (m^2)	Population Density @ (m^2/ person)	Population	Tenancy population & Exit Width required via own auditorium exits	Tenancy population & Exit Width required via shared foyer	Exit width provided
Cinema	9b		GC 5 @ 48 seats		0.5m (48 seats)	-	
			GC 6 @ 48 seats		0.5m (48 seats)	-	
			General Admission 7 @ 186 seats		1m (100) seats)	86 seats	
			General Admission 8 @ 186 seats		8m (100 seats)	86 seats	
			General Admission 9 @ 310 seats		2.5m (250 seats)	60 seats	
			General Admission 10 @ 310 seats		2m (200 seats)	110 seats	
			General Admission 11 @ 346 seats		4m (346 seats)	-	
			General Admission 12 @ 346 seats		4m (346 seats)	-	
					Subtotal	342 patrons	
Cinema Foyer	9b	1003m^2	1.2m2/pp		835	835 patrons	
					Total	**1177** **10m**	6m + 4m via restaurant precinct.

Restaurant precinct (incorporating cinema population spill over from foyer)

Level	Space	Class	Approx GFA (m^2)	Population Density @ (m^2/ person)	Population	Tenancy Exit Width required	Tenancy Exit width provided
Level 3	Indoor Rec	9b	1684m^2	3m^2/pp	561	5m	5m
	S3.05-S3.17 & S3.20 3284 Total (Restaurant) Assume 60% seating, 40% BOH and kitchen	6	1970m^2 1314m^2	1m^2/pp 10m^2/pp	1970 + 131 + 488 + 7 + 194 Total 2790	24m + 4m from the cinema foyer **28m Total**	**11.5m + 5.5m (rear exits)** **17m Total** **(Does Not Comply)**
	LSA	6	488m^2	1m^2/pp			
	Kiosk	6	69m^2	10m^2/pp			
	S4.02 (Discharges from above)	9b	582m^2	3m^2/pp			
Level 4	S4.01	9b	2096m^2	3m^2/pp	698	6.5m	**6m (Does Not Comply)**
Levels 4-10	Commercial Office	5	1509m^2	10m^2/pp	150	2m	2m

Level 1 and 2 modifications

Level	Use	Class	Approx GFA (m^2)	Population Density @ (m^2/ person)	Population	Aggregate Exit Width required	Existing Exit width provided	Proposed Exit width after development	Status
Level 2	Speciality retail, Mall and Kiosk	6	22,684	7.5	3025	26m	29m	26.5m	Complies
Level 1	Speciality retail, Mall and Kiosk	6	13,086	7.5	1745	15m	25.75m	22.75m	Complies

CHANGE OF BUILDING USE - FIRE PROTECTION AND STRUCTURAL ADEQUACY

Because a change in use is involved under the application, Clause 143 (1) of the EPAR requires that the fire protection, structural capacity and Category 1 Fire Safety provisions must be applicable to the new use of the building.

The key requirements and required actions are listed below:

Item	DtS Clause	Description	Requirement	Action
1.	B1.1, B1.2 and B1.4	Resistance to actions, determination of individual actions and determination of structural resistance of materials and forms of construction	The structural adequacy of the building must be appropriate to the new use.	A statement must be provided by a practising structural engineer as to the structural adequacy of the building.
2.	E1.3	Fire Hydrants	The hydrant system is required to achieve the requirements of BCA 2016 and AS 2419-2005.	All existing infrastructure serving the proposed development must be capable of complying with the 2005 requirements. An audit of the existing system will be required noting shortfalls against current code requirement. Upgrade may involve a combination of prescriptive and performance based compliance.
3.	E1.4	Sprinklers	The sprinkler system is required to achieve the requirements of BCA 2016 and AS2118.1 – 1999	An audit of the existing system will be required noting shortfalls against current code requirements. Upgrade may involve a combination of prescriptive and performance based compliance.
4.	E2.2	Smoke Exhaust	The building has been previously assessed a large isolated building. As such all areas are required to be provided with an automatic smoke exhaust system.	It is likely that this requirement will be dealt with via an Alternative Solution

NO REDUCTION IN THE EXISTING LEVEL OF SAFETY PERMITTED

There are a number of existing building features that will be affected by the proposed development. The new work must not reduce the existing level of safety. These include:

- **Cinema egress:** The existing cinema foyer no longer discharges to roof as open space. The proposed arrangement has these exits passing through the restaurant precinct. Approximately 4m is affected. This will need to be included into the egress assessment for the proposed works. Furthermore, travel distances to roof as open space will be extended.
- **Existing retail smoke exhaust:** The existing retail smoke exhaust system will be affected by the proposed development. This system will need to be reconfigured to accommodate the proposed development.
- **Roof as open space:** The existing Cinema has a considerable amount of exits discharging to the rooftop. This has been assessed previously in the SGA fire engineering strategy (Report 2003-210). Moving forward the whole roof top egress strategy will need to be reassessed

THE PROPOSED DEVELOPMENT WILL HAVE AN EFFECTIVE HEIGHT OF MORE THAN 25M

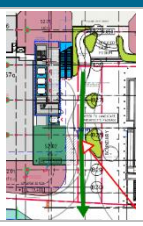
The proposed building will have an effective height of more than 25m. The following requirements will need to be considered:

- Each storey will be required to have access to two exits. (Noting level 4 retail does not have access to two fire isolated exits).
- Re-entry from fire isolated exits.
- Sprinkler Water Supply.
- Emergency lifts.
- Hydrant storage and pump set configuration.
- Stair pressurisation.

ISSUES REQUIRING AMENDMENT TO PLANS AND/OR UPGRADE AS A RESULT OF THE PROPOSED WORKS

- Hydrant and Hose reel locations to be shown on plans.
- Determine the FRL of the existing car park slab.
- Egress
    - The restaurant precinct is required to be served by 28m of exit width (this includes 4m from the cinema foyer).
    - The level 2 forecourt has a required exit with of 3m. It currently have a 1.3m wide chock point.
- Level 4 entertainment does not have access to two fire stairs.
- Commercial office fire stair has rising and descending flights converging on Level 2.
- All existing fire stairs serving new and affected areas must facilitate safe egress. In some instances this may involve upgrade and/or make good to existing compliance issues such as:
    - Unauthorised services in fire stairs.
    - Non complying door hardware.
    - Lack of contrasting nosing.
    - Discharge of exits.
    - Fire doors that have fallen into disrepair including self-closing device.
    - Provision of handrails.
    -

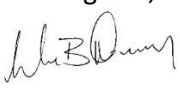
COMPLIANCE ISSUES PROPOSED TO BE ADDRESSED BY THE FIRE SAFETY ENGINEER

BCA Clause	Description	Issue	Performance Requirements
D1.7	Travel Via Fire Isolated Exits	Level 2 The path of travel also necessitates passing by glass openings. 	DP4 & EP2.2

BCA Clause	Description	Issue	Performance Requirements
C1.1	Type of construction required	Reduction in FRL to accommodate the existing slab.	CP1 & CP2
D1.4	Exit Travel Distance	Travel distances to an exit will exceed 40m in the following area: • Level 1, 2 (Existing centre – 70m) • Roof top – restaurants 70m	DP4 & EP2.2
D1.5	Distance between alternative exits	Travel distance between alternative exits exceeds the permissible 60m in the following areas: • Level 1, 2 (120m) • Roof top – restaurants (120m)	DP4 & EP2.2
D2.12	Roof as open space	The roof top carpark is required to serve as roof as open space. The roof is not directly connected to the road and requires the occupants to descend a via fire isolated stairs. Note. The existing fire engineering strategy identifies that 7091 occupants currently utilise the roof for egress. These occupants will need to be factored into the new assessment. The development proposes to add an additional 2449 occupants to the roof.	DP5 & EP2.2
E2.2	General requirements	Automatic Smoke Exhaust compliance is proposed to be achieved on a performance basis by a fire engineered alternative solution.	EP2.2

If you have any queries please do not hesitate to contact me on (02) 9283 6555.

Kind regards,



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