

Your ref  
Our ref 271640  
File ref

# ARUP

By Email  
To Whom it May Concern

Level 5  
151 Clarence Street  
Sydney NSW 2000  
Australia

t +61 2 9320 9320  
d +61 2 9320 9363  
f +61 2 9320 9321

yuan-yuan.song@arup.com  
www.arup.com

18 June 2020

Dear Sir/Madam

## **338 Pitt Street Fire Safety Engineering - Development Application**

The mixed-use development at 338 Pitt Street comprises two 79 storey residential and hotel towers sitting above a 9 storey podium and 6 storey basement. This letter considers the fire safety design of the proposed development and specifically those aspects of the fire safety design that impact upon planning and hence DA issues for the building.

### **Building features**

The whole development is defined as one building, which has an effective height of more than 50m from Ground to the highest occupied level. Type A construction is required for this building in accordance with the Building Code of Australia 2019 (BCA).

The two towers consisting of residential apartments (BCA Class 2) and 5 star hotel (BCA Class 3), retail (BCA Class 6), restaurant (BCA Class 6), Hotel function and ballroom (BCA Class 9b), hotel residential swimming pool (BCA Class 10b), carpark (BCA Class 7a), storage (BCA Class 7b) and office/ administration area (BCA Class 5).

The fire control room for the whole development is proposed to be located at Ground Level, with direct access from George Street, i.e. the north of the site.

### **Fire Safety Design**

The fire safety design of the building will generally satisfy the Performance Requirements of the BCA by complying with the Deemed to Satisfy (DtS) Provisions. However, there are some aspects of the design that are developed using performance based fire engineering to achieve compliance with the Performance Requirements of the BCA. The main aspects that affect the building layout are highlighted below. DTS non-compliances required to be addressed via fire engineering Performance Solutions will be documented in the subsequent Fire Engineering Brief and Fire Engineering Report as part of the formal fire engineering approvals process in NSW.

Areas of non-compliance with the DtS Provisions that are proposed to be addressed via fire engineering Performance Solutions include:

- **Discharge of the fire stairs** (north west) serving the basement floors and north tower is via an internal lift lobby on Ground floor. An alternative discharge path is to be provided and separated from the lobby by fire and smoke proof construction, which could effectively mitigate the risk of the stair discharging path being blocked by the fire or smoke in the lobby.
- **Non-fire isolated stair** situated at the south corner of the building is allowed for the use of egress from the Level 2 to 4 retail tenancies in the event of fire. A fire and smoke proof enclosure, e.g. formed by fire rated glass or drenched toughened glass, is to be provided to separate the stair from each connected floor, such that the risk of fire or smoke affecting the egress on the stair is considered low.
- **Exit width** may be less than the DtS provisions for areas with high population, e.g. the Hotel ballroom and function area at Level 3 and the Skybridge Food and Beverage area at Level 32. The high population floors may need to be subdivided into fire compartments to allow evacuation into the adjacent compartment for temporary refuge. Mechanical smoke control measures may be required to retain tenable conditions in these areas for a reasonable period of time to allow the prolonged egress time required in these areas.
- **Two exits located less than 9m apart** may be provided to the scissor stairs serving the two towers. This is considered acceptable as the lobby connecting to the two exit is a relatively low fire risk area which is separated from the major fire risk area (e.g. residential/hotel units) by fire rated construction.
- **Distance between alternative exits** will be over the DtS limit (45m) on the hotel floors. Smoke control measures, e.g. held open smoke doors, will be provided in the common corridor to limit the extent of the smoke spread and avoid the extended exposure time in untenable conditions during the evacuation.
- **Extended travel distances** to a point choice or to the nearest exit where two exits available will exist in some area; these will be demonstrated to be acceptable based on fire engineering analysis of detection and movement time.

As a part of the fire safety strategy, the sprinkler and smoke detection system are to be designed to allow quick detection and alarm for a fire inside each residential/hotel unit. They will also be designed to avoid whole building evacuation when there is fire within the stair or stair discharge path.

## Conclusion

At this stage of the design, other fire safety aspects of the building appear to be DtS compliant. It is anticipated that there will be other non-compliances with the DtS Provisions of the BCA as the design develops, however it is considered that there are no issues that would affect the building layout arising from fire safety and hence no impediments to Council issuing development consent.

Yours sincerely



Yuanyuan Song  
Senior Engineer