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Peter Israel
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Dear Peter

183 Macquarie Street, Parramatta – Preliminary fire safety engineering review

The design of the proposed development at 183 Macquarie Street, Parramatta will incorporate performance solutions to comply with the performance requirements of National Construction Code Volume One - Building Code of Australia (NCC) 2022[1]. Jensen Hughes has undertaken a preliminary fire safety engineering review of the proposed design for the development application submission at the request of PTI Architecture. The review was based on the drawings and information listed in Appendix A.

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 NCC. Jensen Hughes has undertaken a high-level review of the current architectural documentation with a focus on the exit system provided throughout the building. A detailed NCC review will need to be undertaken by others during the design-development phase. Additional design changes or performance solutions may be required as part of the design-development process.

The subject building includes:

- Basement – Bike parking, laundry and ancillary plant equipment (class 7b)
- Ground floor – Main entry, lobby, commercial retail space (class 6)
- Level 1 – Retail / commercial (class 6)
- Level 2 to 10 – Co-living / student accommodation (class 3)

The building will have an effective height of more than 25 m (approximately 33 m) and is intended to be provided with the following major fire safety systems:

- Fire-resisting loadbearing construction and compartmentation
- Fire-resisting construction bounding residential sole occupancy units and associated corridors
- Two fire-isolated exits from each storey discharging directly to Macquarie Street
- Fire control centre
- Smoke detection system
- Stair pressurisation
- Sprinkler protection
- Hydrant system including ring main with booster assembly facing Macquarie Street
- Emergency warning and intercommunication system
- Exit signage and emergency lighting
- Emergency lift

[1] National Construction Code Volume One - Building Code of Australia 2022, Australian Building Codes Board, Australia.

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

Table 1 Preliminary list of performance solutions

Item	Description of performance solution	DTS provision	Performance requirement	Comment
1.	The fire rating of the class 6 ground floor retail compartment is to be reduced from a maximum of 180 minutes to 120 minutes.	C2D2 and Specification 5	C1P1 and C1P2	The performance solution will demonstrate the appropriateness of the proposed fire ratings based on the likely fire load and fire severity within the compartment.
2.	The building includes external walls and associated openings located within 3m of the side allotment boundaries. It is proposed to rationalise the extent of protection of required to openings.	C4D5	C1P2	The performance solution will include a detailed protection of openings strategy supported by radiant heat analysis.
3.	The travel distance from the landscaped area at the rear of the ground level to a single complying exit at the main entry onto Macquarie Street is approximately 47 m instead of 30 m.	Clause D2D5	D1P4	An alternative exit and path of travel is to be provided from the rear of the ground level via stair 3. This path of travel will enable occupants to gain access to the alternative fire-isolated exit stair 1 via the basement level. Wayfinding and exit signage will be required to identify the alternative path of travel.
4.	The maximum travel distance from residential sole occupancy units on the typical residential levels is up to 12 m instead of 6 m.	Clause D2D4	D1P4 and E2P2	The performance solution will be based on the provision of sprinkler protection and smoke detection throughout the building. In addition, all doorways opening onto the residential public corridors will be provided with medium temperature smoke seals to reduce the risk of smoke leakage to common areas.
5.	The exits into the scissor stairs from level 1 to the roof terrace are less than 9 m apart.	Clause D2D6	D1P4	The risk of both fire isolated stairs in the lobby being obstructed by fire on the level of origin is mitigated by the provision of sprinklers throughout the building and fire-resisting bounding construction.

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

The details of the proposed performance solutions are subject to the outcome of the performance-based design brief and analysis which will be carried out in accordance with the Australian Fire Engineering Guidelines (AFEG)[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 [Office number] if you have any questions.

Yours sincerely

Chris Jamieson
Lead fire safety engineer

Jensen Hughes

[2] Australian Fire Engineering Guidelines, 2021, version 1.0, Australian Building Codes Board, Australia.

Appendix A Drawings and information

Drawing title	Dwg no	Rev	Drawn
BASEMENT FLOOR PLAN 5	DA 5	T	PTI Architecture P567
GROUND FLOOR PLAN	DA 6	T	
LEVEL 1 FLOOR PLAN	DA 7	T	
LEVEL 2 FLOOR PLAN 8	DA 8	T	
TYPICAL FLOOR PLAN (LEVEL 3-5)	DA 9	T	
LEVEL 6 FLOOR PLAN	DA 10	T	
TYPICAL FLOOR PLAN (LEVEL 7 10)	DA 11	T	
ROOF TERRACE FLOOR PLAN	DA 12	T	
ROOF PLAN	DA 13	T	