

To: WL Developer Pty Ltd
Waterloo Metro Quarter Development,
NSW 2017

From: Glenn Hamilton / Smera Poulouse
Level 9, The Forum, 203 Pacific Highway
St. Leonards NSW 2065
AUSTRALIA

Project/File: Waterloo MQD / 301351737

Date: 20 February 2026

**RE: Waterloo Metro Over Station Development,
SSD- 79307746 Central Precinct - Fire Engineering Review**

General

This report has been prepared by Stantec on behalf of WL Developer Pty Ltd (the applicant) to accompany a State Significant Development (SSD) Development Application (DA) for the detailed design of the Over Station Development (OSD) located within the central precinct of the Waterloo Metro Quarter (WMQ) at 150 Cope Street, Waterloo (the site).

The SSDA seeks approval for the detailed design, construction and operation of a mixed – use development comprising a co-living tower atop a podium comprising retail, childcare and community uses to be constructed within the central precinct of the Waterloo Metro Quarter site, adjacent to the Sydney Metro Waterloo Station.

This document provides a summary of the proposed scope and approach to the proposed Performance Solutions applicable to Central Buildings 2 as part of the Waterloo Metro Quarter Development project.

This fire engineering review is prepared based on the following documents:

- BCA & DDA Assessment Report for Central Building 2, prepared by bplusg dated 19 September 2025 (Reference: S250130),
- Architectural Drawings – SSDA prepared by Bates Smart dated 19 September 2025
- Building Code of Australia (BCA 2022) Amendment 2[1].

It is intended that the agreed outcomes of this document will be progressed through the Performance Solution pathway as outlined in Clause A2G2 of the BCA, including preparation of a “Fire Engineering Brief Questionnaire” (FEBQ) for stakeholder review, including Fire & Rescue NSW, prior to finalisation of the Fire Engineering strategy in the Fire Engineering Report.

In accordance with Condition A20 of SSD-9393, the fire engineering review has included the interconnection between precincts and will form part of the detailed fire engineering analysis prepared for the FEBQ process with Fire & Rescue NSW.

In general, compliance with the BCA for the project will be achieved by satisfying the relevant Performance Requirements based on a combination of a Performance Solution and a Deemed-to-Satisfy Solution. The fire engineering assessment is being undertaken on a “by exception” basis (i.e. unless identified as a Performance Solution, compliance with the Deemed-to-Satisfy provisions will be required).

Reference: Waterloo MQD – Fire Engineering Summary Proposal

Building Description and Classification

The proposed development consists of the Construction of Buildings 2 - Central Precinct associated with the Waterloo Metro Quarter Development. The proposed building is a 24 storey (excluding plant level) mixed used development within the Central Precinct (the site). The building comprises of a Co-living housing tower (Level 3 to Level 24) above a three-storey podium containing retail and community facility in the form of a childcare centre.

The general fire safety systems that are required for the proposed buildings are:

- Automatic Fire Suppression System
- Automatic Fire Detection and Alarm system
- Emergency Warning and Intercommunication System
- Emergency Lighting and Exit Signs
- Emergency Lifts
- Fire Hydrant System
- Fire Hose Reels
- Fire Control Rooms
- Portable Fire Extinguishers
- Smoke Hazard Management Systems – Stair Pressurisation and Zone Smoke Control

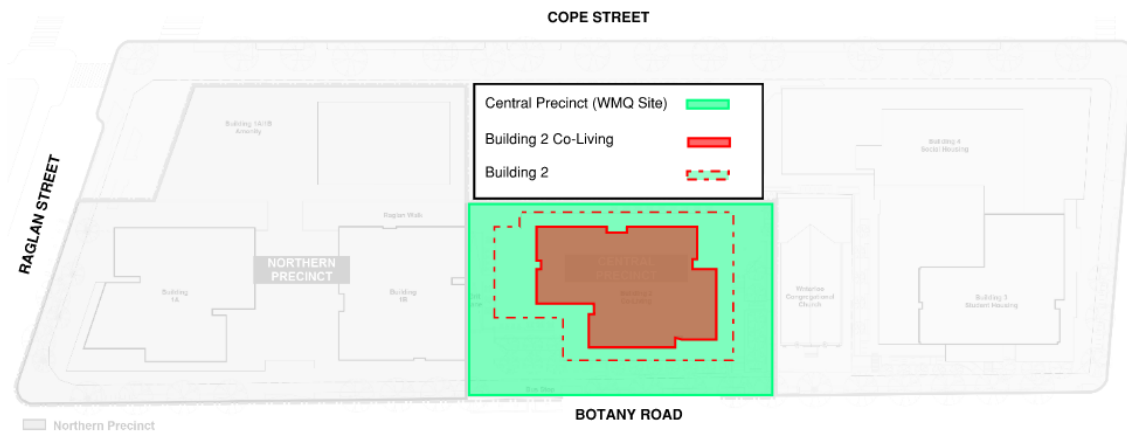


Figure 1: Site Plan – Central Precinct (indicated in green); Building 2(indicated in red dot lines)

Table 1: Summary of BCA characteristics

Characteristic	WMQD - Building 2
BCA Classification	Class 3 (Co Living): G, L3 – L25 Class 6 (Retail) – ground level Class 7a (Carpark) – basement levels Class 7b (Storage) – basement levels Class 9b (Childcare) – G – L2

Reference: **Waterloo MQD – Fire Engineering Summary Proposal**

Characteristic	WMQD - Building 2
Rise in Storeys	26 Storeys (United building with the Waterloo Station Box and Building 1A & 1B)
Type of Construction	A
Effective height (m)	95.79 m (effective height from Building 1A)
Total floor area (m ²)	~17,444 m ²

Deviations from the BCA Deemed-to-Satisfy Provisions

The proposed deviations from the BCA Deemed-to-Satisfy provisions are proposed to be assessed by way of a Performance Solution are outlined in Table 2.

Table 2: Summary of the Performance Solution

SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
1	<p>Separation by Fire Walls</p> <p>Building 2 is a United Building with Waterloo Metro Station & Buildings 1A & 1B. It is proposed to consider horizontal fire separation (at the Metro Station roof) in lieu of vertical fire wall separation to consider them as separate buildings.</p>	C1P2	C3D8	Qualitative comparative assessment based on the provision of a continuous fire-rated roof slab acting as horizontal fire separation, mitigating to the degree necessary, the spread of fire. The slab shall be at least effective as a DtS compliant fire wall.
2.	<p>Rationalise the FRL to the ground floor retail (Class6)</p> <p>A reduction in FRL to the construction is proposed for the Class 6 portion at the Ground Level.</p>	C1P1, C1P2, E2P2	Specification 5	<p>Quantitative assessment shall be undertaken based on the Eurocode time equivalence method.</p> <p>This shall assist with harmonising FRLs between different classifications.</p>
3	<p>Separation of Classification in the same storey and different storeys</p> <p>A reduction in FRL to the construction is proposed for the Class 6 portion at the Ground Level.</p>	C1P1, C1P2, E2P2	C3D9 / C3D10	<p>Qualitative assessment demonstrating that a fire in the retail areas will be adequately contained by the proposed separation (as rationalised in no. 2), such that the risk of fire spread is adequately prevented.</p> <p>Further, the solution will be justified based on the use of an automatic fire suppression system throughout the building and a low fuel load requirement in the lobby area.</p>
4.	<p>Non-compliant Public Corridor Length</p> <p>To permit the public corridor length on L3 – L23 to be 70 m in lieu of 40 m without smoke-proof walls and doors.</p>	C1P2	C3D15	<p>The hazard increases with longer corridors, due to the increase in the number of SOUs that open to the corridor.</p> <p>Option 1: A qualitative assessment will be undertaken based on the provision of smoke-proof doors, as indicated in the markup attached to this memo, together with medium-temperature smoke seals applied to the SOU fire-rated</p>

Reference: Waterloo MQD – Fire Engineering Summary Proposal

SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
				<p>doors. Refer to the Appendix for the markup (Figure 2).</p> <p>Option 2: A qualitative assessment will be undertaken with smoke-proof doors held open under normal conditions, but designed to close automatically upon activation of any smoke detector located within the corridor. Refer to Appendix: Option 2(Figure 3)</p> <p>Both Option 1 and Option 2 assessments will also rely on the existing fire safety provisions, including the automatic sprinkler system and automatic smoke detection system (with coverage of the public corridors), supported by an EWIS to facilitate early evacuation.</p> <p><i>Client to confirm their preference</i></p>
5.	<p>Rationalise the Bounding wall construction</p> <p>To rationalise the bounding construction requirements between rooms and the corridor on levels 3 and 24 due to there being no SOU's on the storey.</p>	C1P2, C1P8	C4D12 and Specification 5	Qualitative absolute assessment based on the automatic sprinkler system throughout coupled with smoke detection and alarm system including the corridor spaces and low fuel loads within the open plan lounge spaces and gym areas at L3 and L24.
6	<p>Slab Edge Construction</p> <p>To rationalise the method of vertical fire separation at the slab edge in lieu of the fire-rated slab extending to the external wall.</p>	C1P2, C1P8	C2D2, Specification 5	Qualitative absolute assessment based on the provision of the non-combustible stone wool cavity barrier to provide a fire and smoke seal between the floors at the slab edge.
7	<p>Bounding Wall, External Façade Detail</p> <p>To rationalise the method of horizontal fire separation, where the internal fire-rated wall does not extend to the edge of the external wall/cladding, creating a gap.</p>	C1P2, C1P8	C2D2, Specification 5	Qualitative absolute assessment based on the provision of a non-combustible cavity barrier along with a fire-rated plasterboard (if required) to prevent the horizontal spread of fire from one unit to another.

Reference: Waterloo MQD – Fire Engineering Summary Proposal

SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
8	<p>Rationalise Non-Fire isolated stair and its use as an exit</p> <p>To rationalise the non-fire isolated stair in lieu of the fire isolated stair as per the FRNSW Fire Safety in Early Childhood Centres.</p>	D1P5	D2D3, D2D4	A qualitative absolute assessment will be undertaken, noting that the reception lobby is separated from the childcare areas by a fire-rated wall. The void at Level 2 will be enclosed with toughened glass incorporating sprinkler protection. In addition, the assessment will consider the fuel load within the reception area to ensure that the proposed configuration achieves compliance with the relevant performance requirements.
9	<p>Rationalise AS 1657 exit</p> <p>To potentially permit the second exit from the Level 25 plant floor to be an AS 1657 compliant exit in lieu of a fire-isolated exit.</p>	D1P4, D1P5	D2D4	A qualitative absolute assessment based on the fact that the plant room is a restricted area with low occupant load
10	<p>Extended Travel Distance</p> <p>a. Level 4-23: Up to 13 m to a point of choice in lieu of 6 m</p> <p>b. Level 25: Up to 28m to a single exit from the roof</p>	D1P4, E2P2	D2D5	<p>Level 4-23:</p> <p>Quantitative RSET vs RSET calculation with a reduced detector spacing to the corridors to demonstrate that the extended travel distance does not increase the evacuation time when compared to a DtS case.</p> <p>Smoke seals on SOU doors also.</p> <p>Level 25:</p> <p>Qualitative Assessment considering the fact that the plant room is considered as a normally unoccupied area and significant portion of the travel path to exit is via an open roof space. Additional fire safety measures, like strobe light, to alert the occupants.</p>
11	<p>Discharge of Fire Isolated Stair</p> <p>a. To allow the fire-isolated stairs to</p>	D1P5	D2D12	A qualitative assessment will be undertaken, based on the provision of a direct and unobstructed egress pathway from the stair discharge point to

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SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
	<p>discharge into a covered area which is >6m from open space.</p> <p>b. To permit the southern fire-isolated stairs to discharge past non-fire-rated external walls and unprotected openings at ground.</p>			<p>open space, together with the fact that the discharge area is unenclosed, naturally ventilated, and contains a minimal fuel load.</p> <p>A qualitative assessment can be made on the basis that egress paths are available in opposite directions; thus, occupants have the option to move away from the fire source and reach an open space. This aligns with the basic human instinct to avoid danger, meaning that, in an emergency, people are likely to select the route leading away from visible flames, smoke, or heat, thereby facilitating safe evacuation.</p>
12	<p>Rationalisation of Occupant Accommodation at Horizontal Exit</p> <p>To rationalise needing to accommodate all occupants of the childcare centre on both sides of the horizontal exit considering the population is split between level 1 and 2.</p>	D1P4, D1P5, E2P2	D2D16	<p>A qualitative absolute assessment considering the presence of fire-rated separation between the levels and between the childcare areas on both levels. The presence of automatic sprinkler protection, smoke detection, and an EWIS system ensures early detection, occupant warning, and controlled evacuation, which is supported by staff.</p>
13	<p>Re-entry for Fire Isolated Stairs</p> <p>To permit the doors to the fire isolated stairs serving storeys above an effective height of 25 metres to be locked from the inside for security, preventing re-entry</p>	D1P2	D3D27	<p>A qualitative assessment using the provision of BGA/ green MCP. The door shall be unlocked on every 4th floor by way of a green MCP within the FIS adjacent to the exit door. Signage shall be provided at intermediate levels, indicating the nearest openable door.</p>
14	<p>Fire Hydrant Booster Location</p> <p>The hydrant booster is located on Botany Road and is not within sight of the main entry. The front entrance of the building is considered to</p>	E1P3	E1D2	<p>Qualitative absolute assessment with the provision of a red strobe light and signage to support brigade operations. It shall be demonstrated that the location of the booster assembly adjacent to Botany Road will not impede the fire</p>

Reference: Waterloo MQD – Fire Engineering Summary Proposal

SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
	be the residential and commercial lobbies			brigade's ability to quickly identify and access it.
15	Sprinkler/Hydrant System Ring Main in Fire Stairs	C1P2, C1P8, E2P2	E1D5,S17C2	Qualitative absolute assessment demonstrating that the ring main penetrations will not facilitate the spread of fire and smoke because the penetration joints are fire-stopped and the pipes do not facilitate heat transfer from one compartment to another.
15	Omission of fire hose reel coverage To omit hose reel coverage to the following areas. <ul style="list-style-type: none"> Retail compartments on Ground Floor 	E1P1	E1D3	Qualitative assessment using the provision of Fire extinguishers in addition to the DtS required Fire extinguishers at Ground floor.
16	Omission of Sprinklers To permit the omission of sprinklers from the following areas <ul style="list-style-type: none"> electrical and comms room 	C1P2, E1P4	E1D4	Qualitative absolute assessment with the provision of the ASD detectors to the top of the lift shaft which when activated shall provide building occupant warning system.
17	Fire Control Room Access To permit the fire control room to be not to be accessed directly from the main entrance of the building. The front entrance of the building is considered to be the residential and commercial lobbies	E1P6, E2P2	E1D15	Qualitative absolute assessment with the provision of the signage and block plans at the main entrance of the building, providing access via the loading dock and Botany Road.
18	Stair Pressurisation	E2P2	E2D4	The Mechanical Services Team has confirmed that this item will be addressed as a Deemed-to-Satisfy (DtS) design, and therefore a Performance Solution will not be required.
19	Omission of the Smoke Control System Permit the omission of Zone smoke control system from	E2P2	E2D6	Qualitative assessment, based on the presence of fire safety systems including the automatic sprinkler system and the building's inherent fire-rated compartmentation that separate

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SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
	the retail tenancies on the ground floor			<p>the retail tenancy from the remainder of the building. Direct egress path from retail tenancy and pressurised fire isolated stair, which will prevent the migration of smoke between fire compartments via leakage pathway. Therefore, tenable conditions are maintained in occupied areas.</p> <p>Potential for further PS are explored with Mechanical services team.</p>
20	<p>Air Handling Shutdown</p> <p>To rationalise the air-handling shutdown and zone smoke control system to the class 9b childcare with consideration of the conflicting requirements.</p>	E2P2	NSW E2D16	This is not applicable to a Childcare occupancy and is not worth pursuing as a performance solution.
21	<p>EWIS</p> <p>Rationalise the cascading of EWIS to ensure that fire alarm does not extend to Building 1A and 1B based on alarm activation in Building 2</p>	E2P1	E4D9	<p>Qualitative absolute assessment based on the provision that each building is equipped with dedicated egress paths, ensuring occupants have direct and independent routes to safety. While the buildings are classified as united, the residential portions (from Level 4 upwards) are effectively separated from the remainder of the complex by fire-rated floor slabs, with no shared spaces that could facilitate smoke or fire spread.</p> <p>In addition, fire safety measures, including a full automatic sprinkler system, an automatic smoke detection and alarm system, and well-established management procedures with trained fire wardens, will ensure that evacuation can be undertaken in a safe, orderly, and coordinated manner, maintaining tenable conditions for all occupants during an emergency</p>
22	Smoke Damper Actuator requirement	C1P2, E2P2	E2D4	A qualitative absolute assessment is undertaken

Reference: Waterloo MQD – Fire Engineering Summary Proposal

SI. No.	Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
	Permit the actuator within the smoke damper to not achieve the 200°C temperature requirement within AS 1682.1			demonstrating that the actuators would have activated prior to exposure to elevated temperatures. i.e. a fail safe damper positioning.

Next Steps

The Fire Engineering process will be undertaken in accordance with the Building Code of Australia and the Australian Fire Engineering Guidelines (AFEG), which provide guidance on the fire engineering process, including the requirements for stakeholder engagement, fire engineering assessment methodologies and acceptance criteria.

Subject review and agreement regarding the above, and subsequent to the SSD approval, the FEBQ will be prepared in accordance with the FRNSW template for formal submission. The FEBQ outlines the scope of the project and subject buildings, the proposed Performance Solutions, applicable BCA Deemed-to-Satisfy provisions, Performance Requirements, and the proposed inputs into fire engineering assessments.

The FEBQ will be submitted for review and acceptance, with an indicative liaison period of approximately 6–8 weeks with FRNSW. Upon acceptance of the FEBQ, the fire engineering calculations will be completed and presented in the final Fire Engineering Report (FER). The FER includes the full extent of performance solutions, the final results of qualitative and quantitative fire engineering assessments, and the required fire safety measures.

Stantec Australia Pty Ltd

Yours sincerely,

Authorised by:



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Attachment: Attachment

c.



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References

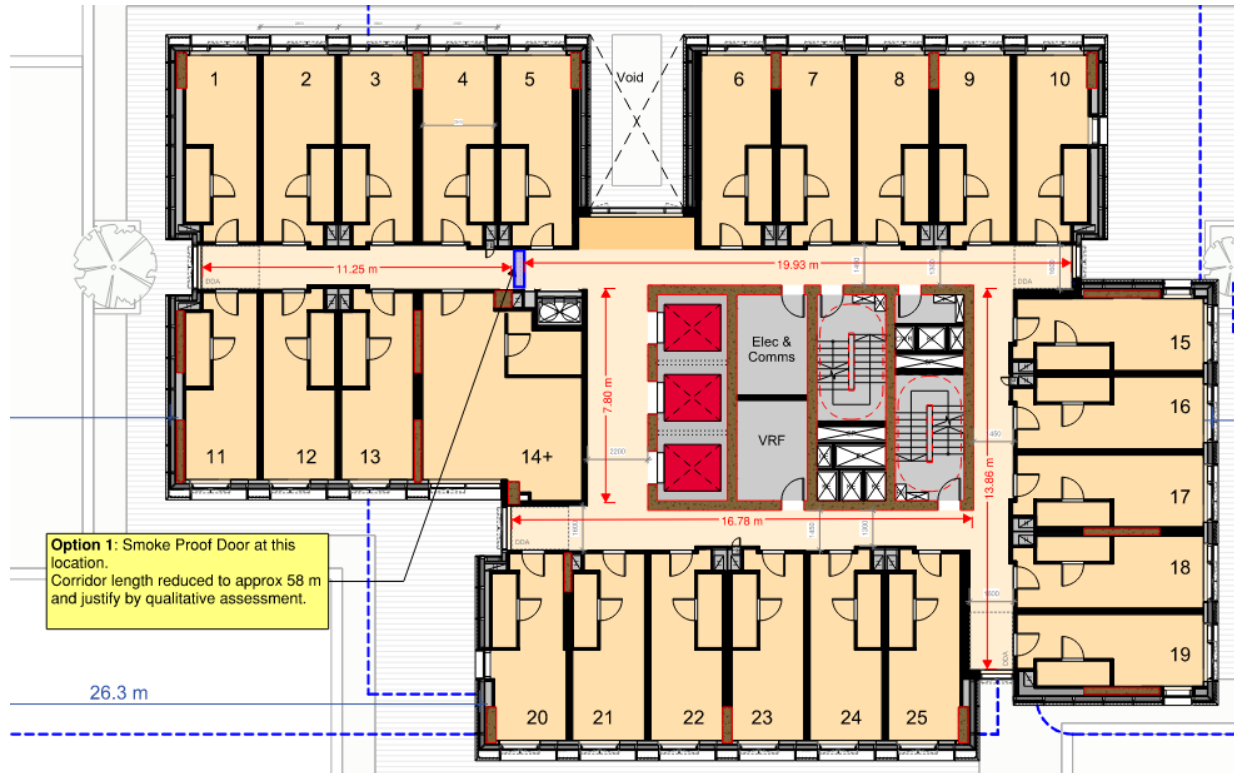
Reference: Waterloo MQD – Fire Engineering Summary Proposal

1. *ABCB, National Construction Code Series, Volume 1, Building Code of Australia 2022, Class 2 to Class 9 buildings. (2022). Canberra: ABCB.*
2. *Architectural Drawings - SSSA dated 19 September 2025 by Bates Smart*
3. *BCA & DDA Assessment Report Building 2 (Reference: S250130) dated 19 September 2025 by bplusg*

Reference: Waterloo MQD – Fire Engineering Summary Proposal

Appendix:

Figure 2: Option 1: Smoke-proof Doors



Reference: Waterloo MQD – Fire Engineering Summary Proposal

Figure 3: **Option 2: Hold Open Door with Smoke seals**



Sam Hui

From: Sam Hui
Sent: Tuesday, 3 March 2026 4:10 PM
To: Sam Hui
Subject: FW: Guidance - Fire Engineering - reg

From: Luke Loseby <Luke.Loseby@fire.nsw.gov.au>
Sent: Tuesday, March 3, 2026 3:42 PM
To: Poulouse, Smera <Smera.Poulouse@stantec.com>
Subject: RE: Guidance - Fire Engineering - reg

You don't often get email from luke.loseby@fire.nsw.gov.au. [Learn why this is important](#)

Good afternoon Smera,

As discussed last week, FRNSW assess deviations/non-compliances through Performance Based Design Briefs (PBDB). A performance-based design brief (PBDB) is a document that is developed in collaboration with key stakeholders as part of a proposed performance-based design and approval process. When completed, the PBDB becomes the platform upon which the proposed design is constructed. Information about submitting these briefs can be found here: <https://www.fire.nsw.gov.au/fire-safety/building-fire-safety/service-type-tool/performance-based-design-brief-20797>

As such, FRNSW cannot assess and provide feedback on the Fire Safety Statement identifying the non-compliance and assessment methodologies without the accompanying analysis provided within a performance-based design brief.

FRNSW recommends consulting with FRNSW by this process at the appropriate time.

Regards,

Luke



A / SUPERINTENDENT LUKE LOSEBY

Manager Fire Safety

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PREPARED FOR ANYTHING.

www.fire.nsw.gov.au



From: Poulouse, Smera <Smera.Poulouse@stantec.com>
Sent: Thursday, 19 February 2026 3:28 PM
To: Fire Safety <FireSafety@fire.nsw.gov.au>
Cc: Hamilton, Glenn <Glenn.Hamilton@stantec.com>
Subject: Guidance - Fire Engineering - reg

Dear FRNSW,

Our client has requested us to send the Fire Safety Statement identifying the non-compliance and the assessment methodologies to FRNSW. This is part of their attempt to demonstrate engagement with FRNSW to DPHI. For your reference, I have included an excerpt of the DPHI comment.

- c) Demonstrate evidence of consultation with Fire and Rescue NSW and provide a fire engineering analysis to demonstrate compliance with Condition A20 of the Concept Approval (SSD 9393) The associated BCA and DDA Reports should be reviewed as part of the prepared fire engineering analysis

Could you please advise if FRNSW has any specific process or procedure for accepting such submissions?

Your guidance on this matter would be greatly appreciated.

Thank you for your time and assistance.

Kind regards,

Smera Poulouse, MIEAust CPEng NER
Senior Fire Engineer

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