State Significant Development Application Statement of Intent

Project:	Santa Sabina College: 84,86,90-98 The Boulevarde Strathfield NSW	**Project No:**	301050662
To:	Pier Property Corporation C/- Polly Friday	**Date:**	09 August 2024
From:	Glenn Hamilton	**Revision:**	005

RE: Fire Engineering Summary Proposal

General

Stantec has been commissioned by Santa Sabina College to prepare this assessment in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the State Significant Development Application (SSD-68054209) for the proposed Sport and Aquatic Centre at Santa Sabina Senior School, 84, 86 and 90-98 The Boulevarde, Strathfield.

The Site (yellow outline in Figure 2 below) is Santa Sabina College (SSC) located at 84, 86, and 90-98 The Boulevarde, Strathfield, within the Burwood Local Government Area (LGA). The site comprises multiple parcels of land and is legally described as: Lots 1&2 in DP 456966, Lots 1&2 in DP 2791, Lot A in DP 388128, Lots 10, 11 & 12 in DP 1297911, Lot 1 in DP307088, Lot 1 in DP938889.

The Development Site comprises the land whereby all works that form part of the SSDA are proposed and are confined to two areas of the site. The development site is bounded by the blue outline in Figure 1 below. The relevant legal description for the development site is Lot A DP388128, Lot 12 DP1297911 and Lot 2 DP2791.

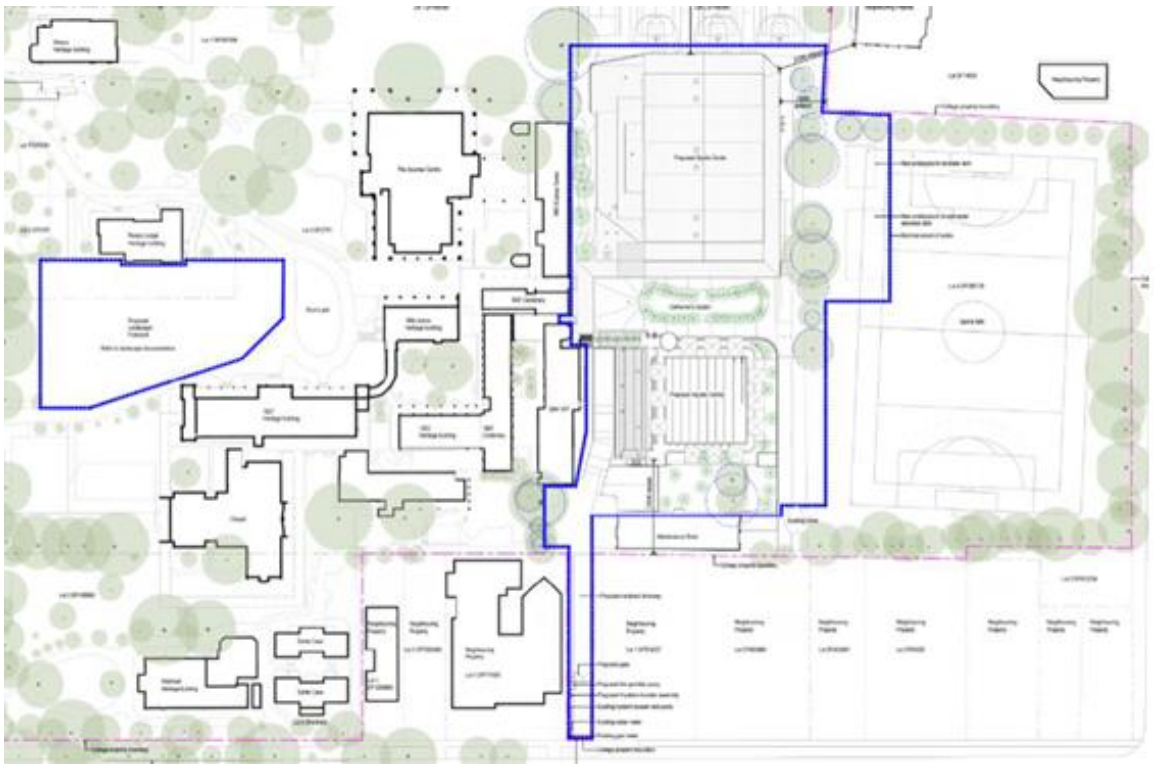

Figure 1: Development Site

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This project involves the proposed construction of a Senior Campus Sports Centre within the educational complex of Santa Sabina College, refer to Figure 2, which is currently comprised of an additional 18 buildings on the same site. The Sports Centre will feature three multi-purpose courts and ample supporting facilities including changing rooms, storage spaces, and a basement parking lot with a capacity for 77 cars. Spanning two floors, the basement will house the parking area while the Ground Level will accommodate three courts. The innovative structural design will create a spacious playing area beneath a roof that doubles as a chimney for heat exhaust and natural lighting, maximising natural ventilation and daylight.

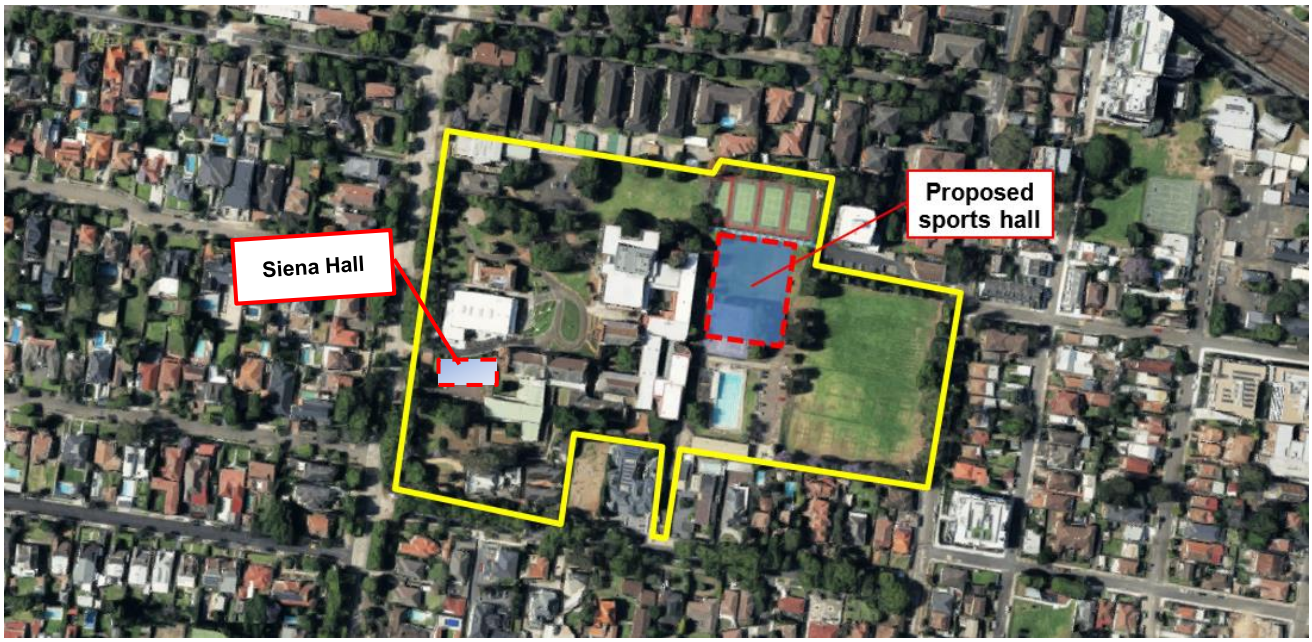

Figure 2 – Location of Subject Site – Senior School

Stantec has been commissioned by Santa Sabina College (SSC) to prepare this assessment in accordance with the technical requirements of the against the Secretary's Environmental Assessment Requirements (SEARs) criteria, specifically the additional assessment requirement noted in a letter from the Department of Planning, Housing and Infrastructure (DPHI) to SSC on 7 March 2024 which requested the provision of a report considering Fire & Rescue NSW (FRNSW) Fire Safety Guidelines, Position Statements and any other relevant requirements [1]. In addition, this document details a number of aspects of the proposed overall development that do not or may not comply with the applicable "Deemed-to-Satisfy Provisions" of the Building Code of Australia (BCA 2022) [2].

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 FRNSW, prior to finalisation of the Fire Engineering strategy in the Fire Engineering Report.

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 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).

FRNSW Fire Safety Guidelines and Technical Information Sheets

The following Table 1 highlights the formal fire safety guidelines and technical information sheets of FRNSW in regard to various fire safety elements/requirements.

FRNSW Fire Safety Guidelines & Technical Information Sheets	Relevant to Subject Site
Access for Fire Brigade Vehicles and Firefighters.	Fire brigade personnel will be able to intervene as per their normal procedures. The subject site is not considered to be a

FRNSW Fire Safety Guidelines & Technical Information Sheets	Relevant to Subject Site
	large-isolated building as it is not required to have a perimeter vehicle access road. The fire brigade appliances will be able to connect to the fire hydrant booster assembly and boost the pressure within the system.
Emergency Services Information Package and Tactical Fire Plans.	This document will be considered to the degree necessary in the event of installation of a new Fire Indicator Panel to the subject site.
Fire Hydrants for Minor Residential Development.	Not applicable.
Fire Safety in Waste Facilities.	Not applicable.
Guidelines for Bulk Storage of Rubber Tyres.	Not applicable.
Impulse Fans in Car Parks.	This document will be considered to the degree necessary when preparing the fire safety strategy.
Large Scale External Lithium -ion Battery Energy Storage Systems – Fire Safety Study Consideration.	Not applicable. There are no EVs proposed.
Fire Safety in Early Childhood Centres.	Not applicable.
Hazardous Chemicals Manifest.	Not applicable.
Fire Brigade Booster Connection with Inlet Insert.	Fire hydrant booster assembly to remain, no further upgrade works required.
FRNSW Compatible Storz Hose Connections.	To comply.
Initial Fire Safety Report Process.	Certifying Authority to prepare and complete.
Final Fire Safety Report Process.	Certifying Authority to prepare and complete.
Fire Safety System Report Process.	Not applicable.

Table 1 - Summary of FRNSW Guidelines and Technical Information Sheets

FRNSW Position Statements

The following Table 2 highlights the formal position of FRNSW in regard to each given matter. These statements are provided in the public interest and FRNSW may not have any specific jurisdiction on the related matter. The fire engineering assessment is expected to take the relevant advice into consideration as appropriate to their given circumstance.

FRNSW Positions	Relevant to Subject Site
Use of National Construction Code (NCC) 2022: - FRNSW are not in a position to determine the applicable NCC for a project. Further guidance can be obtained from the NSW Department of Planning and Environment at hhttps://www.planning.nsw.gov.au/policy-and-legislation/buildings/national-construction-code.	NCC 2022 will be adopted for the proposed development.

FRNSW Positions	Relevant to Subject Site
- However, FRNSW not that whilst NCC 2022 will be available from 1 October 2022, current advice is that it will not commence or be adopted until 1 May 2023 (refer https://abcb.gov.au/news/2022/building-ministers-finalise-ncc-2022). Therefore, justification should be provided, including evidence of advice from the certifier and indicative project timelines, that NCC 2022 will be the applicable NCC for the project if an FEBQ application to FRNSW is to use NCC 2022 as the applicable NCC.	
Automated Vehicle Parking System: - FRNSW endorse the Fire Safety Requirements Automated Vehicle Parking Systems guideline as published by the Australasian Fire and Emergency Service Authorities Council, as the appropriate guidance to practitioners who design and certify building that incorporate an automated vehicle parking system (e.g. a 'car stacker').	No automated vehicle parking system is proposed on site.
Automatic Storage and Retrieval Systems: - FRNSW do not support the storage of flammable goods (dangerous goods Class 2, 3, and 4) and/or lithium-ion batteries within top loading automatic storage and retrieval systems. - FRNSW recommend consideration is given to Appendix C of AS 2419.1-2021 – Fire Hydrant System Design – Large Isolated Buildings with a total volume more than 108,00 m^3 and automatic storage and retrieval systems, when designing fire protection systems for buildings incorporating automatic storage and retrieval systems. - Any assessment should consider incorporating the provisions identified in FM Global Property Loss Prevention Data Sheet 8-34 Protection for Automatic Storage and Retrieval Systems for buildings that contain automatic storage and retrieval systems.	No automatic storage and retrieval systems proposed on site.
External Combustible Cladding: - FRNSW will consider cladding risk assessment principles when being asked to provide advice in respect of buildings that have external combustible cladding ("Cladding"). Refer to External Combustible Cladding for further information.	▪ It is proposed to permit the use of polycarbonate external walls, refer to Item 2 in Table 3 for further detail. ▪ It is proposed to use a polycarbonate attachment to the external walls of the building for sun shading refer to Item 3 in Table 3 for further detail.
Fire Hydrant System in Existing Premises: - When the consent authority (e.g. Council) is assessing the adequacy of an existing fire hydrant system installed in accordance with the provisions of Ordinance 70 and Ministerial Specification 10 (or earlier), FRNSW	The Annual Fire Safety Statements notes the Fire Hydrant System is accordance with Ordinance 70 Specification 10 and AS 2419.1. Note:

FRNSW Positions	Relevant to Subject Site
recommend that the system be upgraded to meet the requirements of the current Australian Standard AS 2419.1 to facilitate the operational needs of FRNSW. - It may be appropriate for a partial upgrade of the existing fire hydrant system be undertaken. A partial upgrade may be proposed to address deficiencies in the design and/or performance of the existing fire hydrant system, when assessed against the requirements of Australian Standard AS 2419.1, so that the upgraded fire hydrant system will meet the operational needs of FRNSW. Where a hybrid fire hydrant system is proposed, which incorporates the design and performance requirements from two different standards, the proponent should consult with FRNSW on the requirements for the fire hydrant system.	- Fire hydrant booster assembly to remain, no further upgrade works required. - Underground pipework 100 mm in diameter, this will suffice. No further upgrade works required.
Fire Hydrant System in New Premises: - FRNSW endorse the use of Australian Standard AS 2419.1-2021 in the design and installation of fire hydrant systems in new premises. If AS 2419.1-2021 is adopted in its entirety to meet performance requirement EP1.3 of the NCC, instead of the referenced AS 2419.1-2005 version, FRNSW will be likely to support an exemption under Section 111 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 or a Performance Solution with regards to the fire hydrant system.	AS 2419.1-2021 will be adopted for the Senior School Sports Centre. Note: - Fire hydrant booster assembly to remain, no further upgrade works required. - Underground pipework 100 mm in diameter, this will suffice. No further upgrade works required.
Fire Sprinklers in Class 1 buildings: - Volumes 2 of the NCC does not prescribe the installation of a fire sprinkler system in any Class 1 building. However, FRNSW does recommend a home sprinkler system be installed to the requirements of Australian Standard AS 2118.5-2005 in Class 1 buildings. A home fire sprinkler system, in conjunction with mandatory smoke alarms, significantly improves the safety of occupants in the home in the event of fire. Refer to the Home Sprinklers fact sheet for more information.	Not applicable.
Fire Sprinklers in Class 2 and 3 Buildings: - FRNSW endorse recommendation No.150 made by Depute State Coroner HCB Dillon in respect to the Coronial Inquiry into Fire at Unit 53, 4 West Terrace, Bankstown which recommends the installation of “fit-for-purpose’ fire sprinkler systems in all new Class 2 and 3 buildings. - FRNSW does not support the deletion of any required automatic fire sprinkler system in any new Class 2 and 3 building. Automatic fire	Not applicable.

FRNSW Positions	Relevant to Subject Site
sprinklers provide superior protection and saving of life and property.	
Fixed Suction for Below Ground Water Supply: - The design of any fixed suction provided for a fire brigade pump appliance to draught from a below ground water supply is to satisfy Clause 4.4 of Australian Standard AS 2419.1-2017. The maximum length of dry pipe between lowest section water level and large bore suction connection is not to exceed 2.8 m due to the limitations of the primer on the fire brigade pumping appliance. - NOTE: The primer is used during draughting operations to create a vacuum in the fixed suction pipework and semi rigid suction hose that is connected to the large bore suction connection.	AS 2419.1-2021 will be adopted for the Senior School Sports Centre.
FRNSW Hose Connections: - Hose connections on fire hydrant and fire sprinkler systems are required to be compatible with FRNSW equipment. Refer to FRNSW hose connections for information.	AS 2419.1-2021 will be adopted for the Senior School Sports Centre.
FRNSW Pump Performance for Hise Rise Buildings: - Clause 7.7 of Australian Standard AS 2419.1-2005 requires a 'fire brigade relay pump' be installed in buildings having an effective height greater than 50 m. The fire hydrant system is to be design for a 'booster pressure' of 950 kPa being input into the fire brigade booster connection from a standard FRNSW pumper. Hydraulic consultants should use this FRNSW pump performance input when specifying the duty of the fire brigade relay pump used in the design. - As the fire brigade relay pump requires a full flow bypass for redundancy purposes, any building having an effective height greater than 100 m should be fitted with a PN 35 rated fire brigade booster connection and have suitable high pressure Storz fittings for use by an appropriate pumping appliance.	Not applicable.
Massive Timber Building Systems: - FRNSW endorse the Fire Safety Principles for Massive Timber Building Systems guidelines as published by the Australasian Fire and Emergency Service Authorities Council (AFAC), as the appropriate guidance to practitioners who design and certify building that incorporate massive timber building systems.	Not applicable.
Relevant Stakeholders in the Performance-Based Design Brief:	A Fire Engineering Brief Questionnaires (FEBQ) will be prepared and issued to FRNSW for both subject site.

FRNSW Positions	Relevant to Subject Site
- Clause A2.2(4) of the NCC applies from 1 July 2021. With regards to A2.2(4)(a) in NCC Volume One, which requires consultation with relevant stakeholders during the PBDB, FRNSW consider that for Class 2 to 9 developments within NSW the relevant fire service / brigade is a relevant stakeholder in all Performance Solutions relating to fire safety. - Refer to the Performance-based design brief / fire engineering brief consultation page on our website for how to undertake consultation with FRNSW.	
Road Tunnels: - FRNSW endorse the Fire Safety for Road Tunnels guideline as published by the Australasian Fire and Emergency Service Authorities Council (AFAC), as the appropriate guidance on fire safety to stakeholders involved in the design and construction of road tunnels.	Not applicable.
Security/screen Doors fitted to Sole-Occupancy Units (SOUs): - The fitting of security or screen doors to the main fire door of a unit is a matter to be determined by the appropriate regulatory authority (e.g. Council) or certifier. - However, FRNSW recommends against fitting of security or screen doors to SOUs due to the increased likelihood of the main fire door of the unit being propped open, corridor egress being impeded by an open security/screen door, and the fire rating of the door frame being compromised from any modification when fitting any additional security or screen door.	Not applicable.

Table 2 - Summary of FRNSW Position Statements

Deviations from the BCA Deemed-to-Satisfy Provisions

A National Construction Code (NCC) report (Ref. No.: 8303, dated 09 August 2024) has been prepared by Certis (NSW) Pty Ltd. The proposed deviations from the BCA Deemed-to-Satisfy provisions are proposed to be assessed by way of a *Performance Solution* as outlined in Table 3 and below.

Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
Item 1 – Senior School Sports Centre – Reduced Fire Resistance Levels (FRLs) of Timber Columns The Sports Centre requires to be of Type B construction. It is understood that the structural elements are proposed to be	C1P1 and C1P2	C2D2 and Specification 5, S5C21	Absolute assessment Qualitative and Quantitative Deterministic It will be demonstrated by way of fire severity calculations, that the FRL requirement of 90/30/- for the Class 9b timber columns is expected to provide

Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
timber columns with a reduced FRL of 90-minutes.			the subject building with structural stability and resistance to the spread of fire. Charring rate calculation structural stability for consideration.
Item 2 – Senior School Sports Centre – Use of Internal Timber Linings and Polycarbonate Window Openings within External Wall The Sports Centre requires to be of Type B construction. It is understood to permit the use of polycarbonate sheets on the east and west elevations, internal timber linings and polycarbonate openings within the external walls.	C1P1 and C1P4	C2D2, and C2D10	Comparative assessment Qualitative Deterministic It will be demonstrated that the risk of fire spread between the 1990 Science Centre is 8 m from the nearest portion of the Sports Centre, this is greater than the distance outlined in the Deemed-to-Satisfy compliant buildings. which may be 6 m apart and have unprotected openings in combustible external walls. The contribution of the non-combustible external walls, combustible timber columns and timber linings in relation to fire spread throughout the building is expected to be minimal. Occupants on Ground Level have a choice of more than three egress pathways to reach a road of open space; thus, they can move away from a fire blocking one of the exits and use an alternative exit. Polycarbonate external wall openings will not be located above discharge exits and this will not impede on occupant evacuation. Staff will take an active approach in raising the fire alarm and managing occupant egress. The building will maintain structural integrity and fire barriers shall withstand the effects of fire until occupant egress is complete and fire intervention has occurred by way of fire severity calculations. Furthermore, the provision of smoke and heat vents will be taken into consideration.
Item 3 –Travel Distance to a Point of Choice (PoC) The maximum travel distance in basement carpark level is permitted to be 20 m from an exit, or a point from which travel in different directions to 2 exits is available, is which case the maximum distance to one of those exits must not exceed 40 m. The following travel distances occur: ▪ Egress from the pool plant to a point of choice in the carpark is	D1P4 and E2P2	D2D5	Comparative Assessment Qualitative and Quantitative Deterministic It will be demonstrated by the provision of natural ventilation and a sprinkler system fitted with fast response sprinkler heads in accordance with AS 2118.1-2017 will provide a level of safety during occupant evacuation. In addition, clear lines of sight to multiple egress routes are provided to occupants as they reach the PoC. Furthermore, a strobe light is to be

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Performance Solutions No. & Description	BCA Performance Requirements	BCA Deemed-to-Satisfy Provision	Fire Engineering Assessment Methodology
proposed to be approx 33m in lieu of 20m.			provided within Store 3 and active in fire mode. Consideration of the significant natural ventilation provide along the perimeter of the basement carparking level and the large reservoir due to the floor area will maintain tenable egress conditions during occupant evacuation when compared to a fully enclosed basement carparking compartment.
Item 4 – Senior School Sports Centre – Impulse Fans within Basement Carpark It is proposed to permit the use of performance based impulse fan ventilation system in carpark areas in lieu of mechanical exhaust.	E2P2	E2D3 and E2D12	Absolute assessment Qualitative Deterministic The primary design requirements are: i. Sprinkler system to be installed in accordance with AS2118.1-2017 fitted with fast response sprinkler heads. ii. A smoke alarm and detection system in accordance with AS 1670.1-2018 throughout the basement carpark. iii. Fans to be located in driveways and access ways, and not above car parking spaces. iv. The fans shall be located between rows of sprinklers, and it should be demonstrated that the air jet from the impulse fan does not impinge upon any sprinkler heads. v. The fans are to be shut down upon detection within the car park, including activation of the sprinkler system. Appropriate detection is beam detection, ASD detection or duct probe detectors. vi. Manual controls for the fans shall be provided for fire fighters to shut off the fans in the event of fire brigade intervention.

Table 3 - Summary of Performance Solutions – Senior School – Sports Centre

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, 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.

Following submission and 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 results of qualitative and quantitative fire engineering assessments, and the required fire safety measures.

Yours sincerely,

Stantec Australia Pty Ltd

Glenn Hamilton
Fire Engineering Group Leader

References

[1] “Fire & Rescue NSW - Building Fire Safety,” FRNSW, 2024. [Online]. Available: https://www.fire.nsw.gov.au/page.php?id=9140. [Accessed 26 March 2024].

[2] Australian Building Codes Board, National Construction Code Series, Volume 1: The Building Code of Australia 2022, Class 2 to 9 Buildings, Canberra: Australian Building Codes Board, 2022.