

Consultants Advice				
To: Ms Suzanne Debelak			Date: 28/04/2026	
Company: A W Edwards			Consultants Advice No: 002	
Email: s.debelak@awedwards.com.au			File/Ref No: 380926-51HuntingwoodDr-LoteCA-MOD-RevD	
Subject: Impact on Fire Engineering & FSS – MOD 1 Rev 3			Project Address: 51 Huntingwood Dr, Huntingwood, NSW 2148	
Issued by: Christopher Koch			Project No: 380926	
Distribution:				
To:	Cc:	Company:	Person:	Email:
☒	☐	A W Edwards	Riley Barns Stefanie Rodic	rbarns@awedwards.com.au srodic@awedwards.com.au

Dear Ms Debelak,

It is understood that as part of a review of the existing building design, a redesign is proposed which will result in the original ten (10) shells being reduced to five (5) shells. It is noted that as part of this modification, Shell B will consist of two (2) data halls instead of being split up into two separate shells. Based on this the proposed modification is similar in footprint to the previous modification which was assessed and since been withdrawn. The below sections outline the high-level review of the proposed design and the impact on the existing fire safety strategy for the building.

1.0 BCA Deemed-to-Safety (DtS) Reference Criteria

Key BCA DtS reference criteria identified by the Certifier, Paul Curjak from Mckenzie Group Consulting is shown in Table 1-1.

Table 1-1 – BCA Deemed to Satisfy (DtS) Reference Criteria

	BCA Clause	Description or requirement
Part A6	Classification	Class 7b - Storage Class 5 - Office
C2D2	Construction Type	Type A Construction applicable
C2D3	Rise in Storeys Storeys Contained	14 Storeys 7 Storeys
C2D3	Effective Height	32.5 m (Greater than 25 m)
C3D3	Floor Area	Level 1 ~ 5,753 m ²

	BCA Clause	Description or requirement
		Mezzanine ~ 1,366 m ² Level 2 (Internal) ~ 18,101 m ² Level 2 (Gantry) ~ 16,399 m ² Level 3 (Internal) ~ 16,401 m ² Level 3 (Gantry) ~ 16,970 m ² Level 4 (Internal) ~ 16,408 m ² Level 4 (Gantry) ~ 18,824 m ² Level 5 (Internal) ~ 16,408 m ² Level 5 (Gantry) ~ 16,970 m ² Level 6 (Internal) ~ 17,511 m ² Level 6 (Gantry) ~ 15,795 m ² Level 7 (Plant Deck) ~ 33,306 m ² Total 210,212 m ²
	Largest Fire Compartment	~ 32,900 m ² ~ 197,100 m ³
C3D4	Large-Isolated Building	No
D2D18	Floor population as advised by Client	Office Space – 276 occupants over 3 shifts as confirmed by the Client. Data halls and Gantries – 1-4 occupants in each based on maintenance staff only.
E1D17 & E2D21	Special Hazard	Yes, Lithium-ion Batteries and Diesel addressed in Performance Solution #24
	Unusual features Voids / Atriums	Yes, the facility is a data centre that is over 25 m in effective height with four 4) plant decks around the building in the form of gantries.

2.0 New Design Impact on the Fire Safety Study (FSS)

2.1 Introduction

2.1.1 The Project

AirTrunk is progressing a modification to the approved State Significant Development (SSD-41589232) for the SYD3 data centre campus located at 51 Huntingwood Drive, Huntingwood. The original SSD approval, granted on 15 September 2023, permits the development of a hyperscale data storage facility comprising ten (10) data halls, associated infrastructure, emergency power generation systems, and supporting services.

A previous modification application (MOD 1 Rev 2) was prepared but has since been formally withdrawn. In response to evolving operational requirements and advancements in data centre design, a revised modification (MOD 1 Rev 3) is now proposed.

The proposed MOD 1 Rev 3 development retains the approved land use and operational intent of a 24/7 data storage facility but introduces an optimised configuration for the building. Key changes include a reduction in total gross floor area, consolidation of data halls from ten (10) to five (5) higher-capacity shells (totalling approximately 72 MW), reconfiguration of supporting infrastructure, and adjustments to site services including water storage and electrical systems.

Importantly, the proposed modification does not introduce new land uses or fundamentally alter the approved hazard profile of the site, with the quantity of emergency generators and bulk diesel storage remaining consistent with the approved SSD. However, the redistribution and consolidation of infrastructure necessitate a targeted assessment of potential impacts on the existing fire safety strategy.

2.1.2 Objectives

Lote Consulting has been engaged by A W Edwards to undertake an initial fire safety impact assessment of the proposed MOD 1 Rev 3 development in the context of the existing approved SYD3 FSS [1] and Fire Engineering Report (FER) [2] approved under SSD-41589232.

The primary objectives of this Technical Advice report are to:

1. Assess the extent to which the proposed design modifications may affect the assumptions, performance criteria, and outcomes of the approved FSS and FER.
2. Evaluate whether the existing fire protection systems and fire safety infrastructure remain adequate and appropriate under the revised site configuration, with particular consideration of changes in building density, infrastructure distribution, and water storage provisions.
3. Identify and document any required updates, refinements, or deviations from the approved fire safety strategy arising from the proposed modification.
4. Review key fire-related risks associated with the modified layout, including potential changes in fire load distribution, emergency response conditions, and interaction between critical infrastructure elements.
5. Provide preliminary fire engineering guidance to inform ongoing design development and support the modification approval process.
6. Outline the anticipated approval pathway for updating the FSS and associated fire safety documentation as part of the MOD 1 Rev 3 application.

2.1.3 Scope

This engagement comprises the preparation of a technical assessment to evaluate the fire safety implications of the proposed MOD 1 Rev 3 development relative to the approved SSD design. The scope of work includes the following:

1. **Preliminary impact assessment:** Evaluate the potential impacts of the proposed MOD 1 Rev 3 development on the existing FSS and the site's fire protection and detection systems, with a focus on changes arising from the reconfiguration and consolidation of infrastructure rather than the introduction of new hazards.
2. **Fire safety strategy review:** Assess the continued applicability and adequacy of the existing fire safety strategy, identifying any areas where assumptions, performance criteria, or system coverage may require validation or refinement due to changes in building layout, infrastructure distribution, and fire load concentration.
3. **Preliminary risk analysis:** Conduct an initial assessment of key fire-related risks associated with the modified development configuration, particularly in relation to fire load distribution, infrastructure clustering, and potential changes to fire severity and escalation behaviour.
4. **Regulatory compliance, safety, and technical references:** Identify applicable fire safety codes, standards, industry guidelines, and fire authority requirements relevant to the proposed modification, and confirm continued alignment with the existing regulatory framework.
5. **Operational and emergency response consideration:** Outline potential operational and emergency response implications associated with the revised site layout, including impacts on access, firefighting operations, and interaction with critical infrastructure systems.
6. **FSS update pathway and timeline:** Define the anticipated process and indicative timeline for updating and revalidating the FSS, and for subsequently updating associated fire safety documentation (e.g., emergency response plan (ERP) and Emergency Services Information Package (ESIP)), including consultation with FRNSW where required.

2.2 Project Modification Description

2.2.1 Site Location

The site is located at 51 Huntingwood Drive, Huntingwood, NSW 2148, which is approximately 32 km west of the Sydney Central Business District (CBD), 12.51 km west of Parramatta and 14.9 km north of Liverpool.

The development is situated within the Blacktown City Council Local Government Area and is zoned E4 General Industrial. The site is bounded by the Great Western Highway to the north, the M4 Motorway to the south, Brabham Drive to the west, and Woods Close to the east.

The approved data centre campus occupies a total site area of approximately 90,172.8 m² and is currently under construction in accordance with SSD-41589232.

2.2.2 Data Centre Development Modification Description (MOD 1 Rev 3)

The proposed MOD 1 Rev 3 development comprises a revised configuration of the approved data centre, maintaining its function as a 24/7 data storage facility while optimising the arrangement of built form and supporting infrastructure.

The modification reduces the total gross floor area (FGA) by 58,200 m² and consolidates the development from ten (10) data halls to five (5) higher-capacity data shells, delivering an overall IT load of approximately 72 MW. While the total operational capacity remains consistent in intent, the consolidation results in change power density within individual buildings.

The development continues to incorporate same key supporting infrastructure as per approved SSD, including:

1. Emergency power generation systems comprising 316 diesel generators.
2. Bulk diesel storage facilities with a total storage capacity of approximately 4,048 kL.
3. Electrical infrastructure including a 132 kV transmission connection and dual substations.
4. Mechanical plant located at both ground and roof levels, including chiller systems and associated plant.
5. Site-wide fire protection systems, water storage infrastructure, and stormwater management systems.
6. Ancillary facilities including administrative areas, internal access roads, and car parking.

The site will operate on a continuous basis with minimal on-site personnel, primarily limited to maintenance, monitoring, and operational support functions.

Table 2-1 listed comparison of MOD 1 Rev 3 development with the previous approvals.

Table 2-1: Development Comparison

TABLE 2: PROPOSED DEVELOPMENT PARTICULARS			
Project Element	Approved Development	Previous MOD (Withdrawn)	Proposed Development
Site Area	90,172.8 m ²	90,172.8 m ²	90,172.8 m ²
General	SSD - Data storage premises (>10 MW)	SSD - Data storage premises (>10 MW)	SSD - Data storage premises (>10 MW)
Primary Land Use	Data Storage Premises	Data Storage Premises	Data Storage Premises
Operation	Data centre (24/7)	Data centre (24/7)	Data centre (24/7)
Total GFA	122,546 m ²	51,062 m ² (-71,484 m ²)	64,346 m ² (-58,200 m ²)
Building Height	49.75 m	49.1 m (-0.65 m)	49.75 m (no change)
Data Shells	10 shells	6 shells (-4 shells); shells B, C, D, E increased to 67 MW each	5 shells (-5 shells); delivering an overall IT load of approximately 72 MW across shells A, B, C, D, and E
Tree Removal	Remove: 2,131; Retain: 129	Remove: 2,137 (+6 trees); Retain: 123 (-6 trees retained)	Remove: 2,137 (+6 trees); Retain: 123 (-6 trees retained). Total trees post-planting maintained at 607, equivalent to the approved DA.
Landscaping	12,021 m ²	10,272 m ² (-1,749 m ²). Reduction accommodates ground-level infrastructure relocation (HDC, water tanks, new internal roads serving gantries). Offset through higher planting densities and 2 additional trees planted vs approved development.	11,270 m ² (-751 m ²). Reduction accommodates ground-level infrastructure relocation (HDCs, and new internal access arrangements). Offset through higher planting densities to ensure no net loss of revegetation. Supplementary landscaping along the southern boundary retained and enhanced for screening of water tanks and infrastructure from the M4 corridor.
Earthworks	Net cut 89,100 m ³ ; net fill 81,600 m ³	Net cut 104,654 m ³ ; net fill 81,600 m ³ (+15,554 m ³ cut)	Net cut 104,654 m ³ ; net fill 81,600 m ³ (+15,554 m ³ cut)

TABLE 6: PROPOSED DEVELOPMENT PARTICULARS			
Project Element	Approved Development	Previous MOD (Withdrawn)	Proposed Development
Car parking	149 spaces (3 accessible, 10 bicycle)	157 spaces (4 accessible, 10 bicycle) (+8 spaces)	149 spaces (4 accessible)
Water Tanks (Southern Tank Yard)	5 tanks	8 tanks (+3 tanks)	5 tanks (consistent with approved SSD); 3 tanks relocated to centre of site to reduce visual bulk along the M4 corridor.
Infrastructure and Services	132 kV transmission; two electrical substations; potable water; stormwater management	132 kV transmission; two electrical substations; potable water; stormwater management; ground-level fuel tank farms; new gantry systems; chiller farms	132 kV transmission; on-site 22 kV substations; potable water (Section 73 Feasibility Study lodged with Sydney Water for mains amplification); stormwater management; ground-level fuel storage; reconfigured gantry systems and chiller farms to suit the consolidated layout.
Machinery and Plant	316 generators; roof-mounted mechanical plant; 4,048 kL diesel storage	273 generators; ground-level mechanical plant; 4,048 kL ground level diesel <u>storage</u> ; <u>new</u> gantry systems; chiller farms	316 generators; mechanical plant (Hybrid Dry Coolers) relocated to ground-level positions along the eastern, southern and western boundaries with rooftop plant retained on Shell A ; 4,048 kL ground** - **level diesel storage; reconfigured gantry systems and chiller farms.
CIV	\$1,074,990,484	No change	No change
Construction Jobs	1,333	1,333	1,333
Operational Jobs	276	276	276

Table 2-2: Development parameter that would impact Fire safety strategy

Parameter	Approved SSD	Proposed MOD 1 Rev 3	Change	FSS Relevance
Total GFA	122,546 m ²	64,346 m ²	Reduced	Lower overall footprint, but not directly indicative of reduced risk. Separation distance may have been impact.
Data Shells	10	5	Consolidated	- May potentially change fire load concentration per building, specially Lithium-ion battery - Fire hydrant coverage, ventilation and sprinkler area coverage has potential for impact
Building Height	49.75 m	49.75 m	No change	No impact on vertical fire strategy
IT Load Capacity	Not explicitly defined	~72 MW	Reconfigured	Higher power density within fewer buildings
Generators	316	316	No change	Hazard inventory unchanged
Diesel Storage Qty (Total)	4,048 kL	4,048 kL	No change	Primary fire hazard unchanged
Transformer Infrastructure	Single arrangement	Dual EV substations	Modified	- No change to the transformer fire scenarios - Consequence analysis in the FSS is required to determine separation distance and fire suppression system adequacy.
Transformer Oil	252 kL	252 kL	No change	No change

Parameter	Approved SSD	Proposed MOD 1 Rev 3	Change	FSS Relevance
Combined lithium-ion Batteries	893,000 kg	893,000 kg	No Change	No material fire impact
Water Storage Tanks	5	8	Increase	Location of chilling water tanks are distributed into two areas, but total number of tanks increased by 3. No change to firewater tank
Car Parking	149 spaces	149 spaces (incl. EV)	Minor change	No material fire impact
Landscaping Area	12,021 m ²	11,270 m ²	Slight reduction	Minor impact (access / separation considerations)
Tree Removal	2,131 (129 retained)	2,137 (123 retained)	Minor change	Negligible fire impact
Earthworks (Cut)	89,100 m ³	104,654 m ³	Increased	No direct fire impact
Earthworks (Fill)	81,600 m ³	80,300 m ³	No change	No impact
Emergency Systems	Approved configuration	To be validated	Reconfigured	Requires FSS validation

2.2.3 Dangerous Goods and Hazardous Materials

As outlined in the current FSS [1], the current data centre will continue to store and handle the following key DGs and hazardous materials.

Table 2-3 - Dangerous Goods Stored in the current operational Data Centre

Materials	DG Class	Total Quantity
Diesel	C1	4,048 kL
Total Lithium-Ion in (Power Train Unit (PTU)) + Data Hall + Customer rooms)	9	893,000 kg
Transformer Insulating Oil (Mineral oil)	C2	252 kL



Figure 2-1: Current Syd3 site layout, approved SSDA

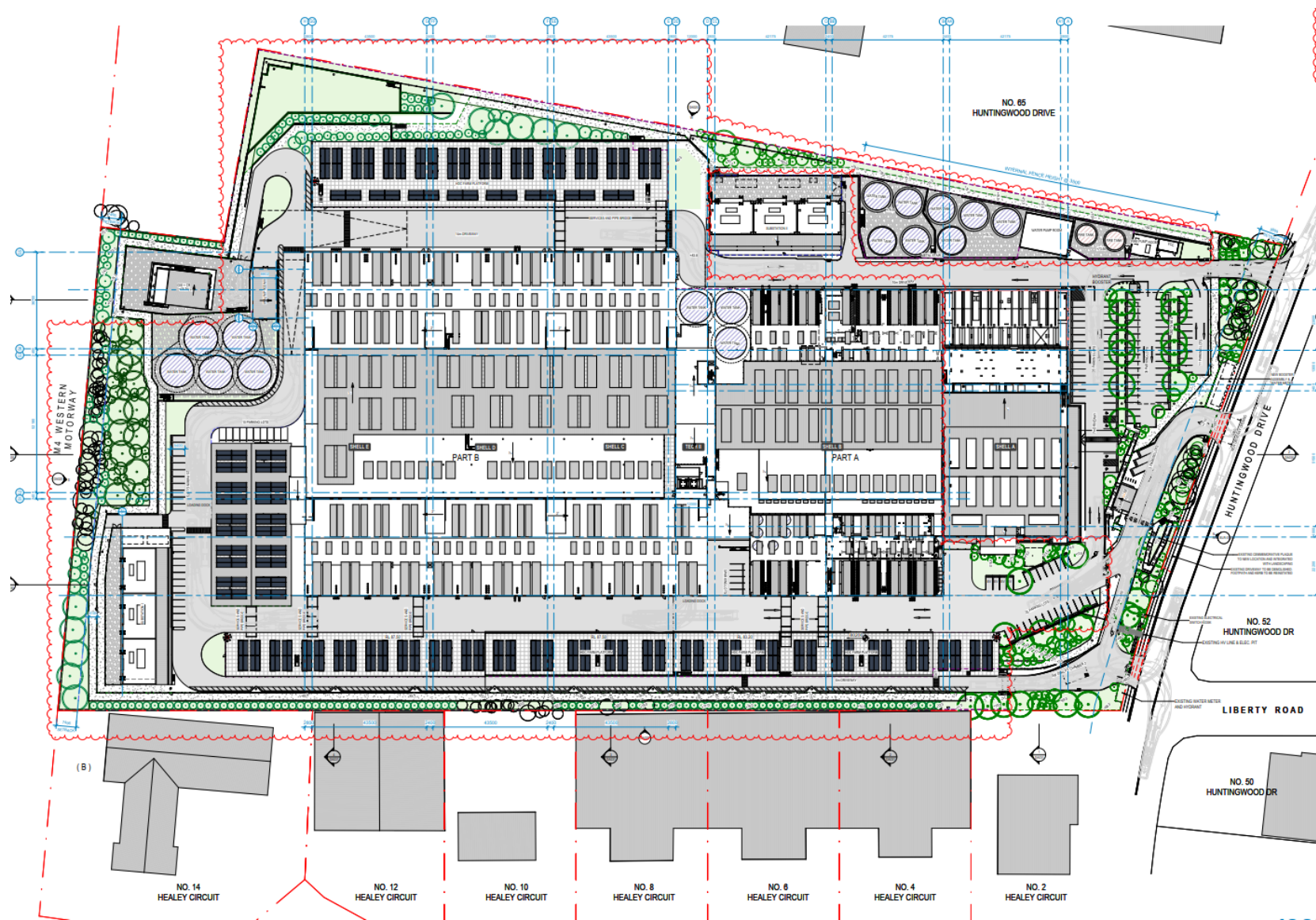


Figure 2-2: Proposed MOD 1 Rev 3 Site Layout of Syd3

2.3 Hazard Identification

2.3.1 Introduction

The proposed MOD 1 Rev 3 development does not introduce new hazard classes to the SYD3 data centre campus but involves a reconfiguration and consolidation of previously approved infrastructure and hazardous materials.

Accordingly, the site hazard profile remains broadly consistent with that approved under SSD-41589232, with primary hazards associated with Lithium-ion battery (in PTU + Data Hall + Customer rooms), bulk diesel storage (in bulk tanks and generator belly tank), emergency power generation systems, electrical infrastructure, and building services.

However, the redistribution of infrastructure and reduction in spatial footprint results in a change to the concentration of fire load and critical systems within fewer data halls. This has the potential to influence fire severity, escalation pathways, and emergency response conditions.

This section identifies the key fire and hazardous material risks associated with the modified development configuration, with a focus on credible worst-case scenarios relevant to the revised layout.

2.3.2 Lithium-ion Battery Hazards (UPS Systems)

Lithium-ion batteries are utilised within the data centre as part of Uninterruptible Power Supply (UPS) systems and IT equipment. These batteries are distributed throughout the facility and operate within controlled indoor environments.

Failure of Lithium-ion batteries may occur due to thermal, mechanical, or electrical abuse, or manufacturing defects. Under extreme conditions, this may result in thermal runaway, characterised by rapid exothermic reactions leading to the release of heat, flammable gases, and potentially toxic by-products.

The primary hazards associated with Lithium-ion battery failure include:

- 1) Localised fire within battery modules or equipment
- 2) Generation of flammable gases (e.g., hydrogen and hydrocarbons) [3]
- 3) Release of toxic gases (e.g., carbon monoxide and hydrogen fluoride) [3]
- 4) Potential overpressure effects within enclosed spaces.

In the context of the data centre, these risks are mitigated through:

- 1) Use of battery management systems (BMS) to monitor temperature, voltage, and state of charge
- 2) Installation within dedicated electrical or battery rooms with fire-rated construction
- 3) Provision of mechanical ventilation systems to dilute and manage flammable and toxic gas accumulation
- 4) Integration with fire detection and suppression systems designed for electrical hazards.

Although the total quantity of Lithium-ion batteries remains unchanged, the change in data hall volume requires a review of consequence modelling for rack-mounted batteries. This review is necessary to assess potential fire and toxic impacts and to confirm the adequacy of the existing fire protection systems documented in the FSS. This is proposed to be undertaken as part of an Addendum to the existing approved Fire Safety Study (FSS) as the quantities previously assessed are not proposed to be exceeded.

2.3.3 Transformer Internal Arcing, Oil Spill, Ignition and Bund Fire

The proposed development includes multiple oil-filled transformers associated with electrical infrastructure, including substations and power distribution systems.

Transformers typically contain mineral insulating oil used for cooling and electrical insulation. Under fault conditions such as internal arcing, rapid energy release may vaporise the insulating oil, generate flammable/combustible gases and cause rapid pressurisation within the transformer enclosure.

If pressure relief mechanisms fail or are exceeded, rupture of the transformer tank may occur, resulting in:

- 1) Release of hot oil into surrounding banded areas.
- 2) Formation of flammable vapour clouds.
- 3) Potential ignition upon exposure to oxygen and ignition sources.

This may lead to sustained bund fires and radiant heat exposure to adjacent equipment. Protective systems such as Buchholz relays, pressure relief devices, and oil containment bunds are typically provided to mitigate these risks.

The introduction of dual substations under the MOD 1 Rev 3 development will not impact on the relevance of transformer-related fire scenarios and associated exposure risks as the overall quantities of oil have not changed.

2.3.4 Release of Potentially Contaminated Firewater to The Environment

In the event of a fire involving Lithium-ion battery in data halls, bulk diesel storage, generators, transformers, or building systems, firefighting activities may generate firewater runoff containing hydrocarbons, combustion by-products, and other contaminants.

Potential sources of contamination include:

- 1) Sprinkler activation and firewater contamination by lithium-ion battery in data halls.
- 2) Diesel fuel residues from storage and generator systems.
- 3) Transformer oil and associated degradation products.
- 4) Combustion products from building materials and electrical equipment.
- 5) Cooling system fluids and minor chemical inventories.

If not adequately contained, contaminated firewater may enter the stormwater system and pose environmental risks to surrounding areas.

Relevant guidelines, including NSW 'Best Practice Guidelines for Contaminated Water and Treatment Systems' [4], recommend that where contamination is possible, appropriate containment and control measures are implemented to prevent off-site discharge.

Given the modification to site infrastructure, including changes to data hall size, the generation of total firewater and containment requirement may be enhanced. Therefore, the adequacy of firewater containment and management systems requires validation in the FSS.

2.4 Impact Analysis

The proposed MOD 1 Rev 3 development involves a reconfiguration and consolidation of the previously approved SYD3 data centre layout, without introducing new land uses or additional classes of hazardous materials. While the overall Diesel, Lithium-ion batteries and transformer oil inventory

remains consistent with the approved development, there will likely be a change in the energy density in relation to the Lithium-ion battery.

Accordingly, the purpose of this section is not to assess new hazard types, but to evaluate the extent to which the proposed modifications may impact the assumptions, performance criteria, and adequacy of the existing FSS and associated fire protection strategy.

The assessment adopts a comparative approach, considering the approved SSD configuration against the proposed MOD 1 Rev 3 layout, with a focus on identifying areas where the existing fire safety provisions may require validation, refinement, or update.

2.4.1 Impact on the Existing FSS

Key areas requiring review and validation are outlined below.

2.4.1.1 Fire Load Distribution and Building Density

The consolidation of the development from ten (10) data halls to five (5) higher-capacity data shells will not increase overall quantity of Lithium-ion batteries. However it may vary individual data halls in rack battery quantity, which may lead to a higher quantity of fire load within each fire compartment.

The redistribution and increase in hazardous materials may influence:

- 1) The severity of credible fire scenarios within a single data hall.
- 2) The rate of heat release and smoke production during a fire event.
- 3) The potential for fire escalation within building compartments.

Accordingly, the existing FSS assumptions relating to fire size, growth rates, compartment performance, ventilation performance, separation distances, sprinkler system performance and external fire impacts should be reviewed to confirm their continued applicability under the revised configuration.

2.4.1.2 Separation Distances and Layout Configuration

The revised layout modifies the spatial arrangement of data halls, generators, substations, and associated infrastructure.

While no new hazard sources are introduced, the updated configuration may affect:

- 1) Separation distances between critical infrastructure elements.
- 2) Exposure of adjacent assets to radiant heat and flame impingement.
- 3) In rack batteries separation distances in the data halls.
- 4) Fire brigade access pathways and operational clearances.

Separation distances adopted in the approved FSS should be reviewed and validated against the revised layout to confirm the continued compliance with applicable criteria.

2.4.1.3 Firewater Demand and Storage Capacity

The proposed modification includes relocation of certain chilled water tanks. However, the number of tanks remains unchanged. There is no change to the firewater storage tanks or overall firewater storage capacity.

As such, the existing FSS assumptions regarding firewater demand, duration and redundancy remain applicable. No impact on the availability or reliability of firewater supply is anticipated under the revised configuration.

2.4.1.4 Hydrant Coverage and Accessibility

The existing facility is designed with a site-wide hydrant system to support firefighting operations across the campus.

Changes in building layout and infrastructure distribution may affect:

- 1) Hydrant coverage relative to revised hazard locations, especially bigger data halls may trigger deviation from the AS 24191.1 hydrant coverage requirements.
- 2) Accessibility of hydrants under credible fire scenarios.
- 3) Potential exposure of firefighting positions to heat, smoke, or other hazards.

The FSS addendum should review hydrant coverage and access arrangements to confirm that effective firefighting operations can be maintained under the modified site conditions.

2.4.1.5 Fire Detection and Protection Systems

The proposed modification does not introduce new fire protection system types. However, system coverage and effectiveness may be influenced by the revised layout.

Areas for review include:

- 1) Detection system coverage relative to revised layouts.
- 2) Applicability of existing sprinkler suppression strategies within reconfigured spaces.
- 3) Integration of fire protection systems with updated infrastructure.

The FSS should confirm that existing fire detection and protection systems remain appropriate and effective for the modified development. When any gap identified, that should be treated with appropriate recommendation.

2.4.1.6 Firewater Containment

The site is provided with infrastructure for containment of firewater runoff, including detention basins and controlled discharge systems.

The revised configuration with enhance data hall area may influence:

- 1) Volume and rate of firewater generation.
- 2) Flow paths and collection efficiency.
- 3) Effectiveness of containment in preventing off-site discharge.

The adequacy of firewater containment should be reviewed such that continued compliance with NSW 'Best Practice Guidelines for Contaminated Water and Treatment Systems' [4] is achieved. It is noted that the original fire water containment was substantially greater than the requirements for fire water based on the OSD basin being utilised to contain fire water runoff. Therefore, no substantial impact is expecting.

2.4.1.7 Ventilation and Smoke Management

The consolidation of data halls and associated increase in power density may influence internal heat generation rates and the behaviour of smoke and gases under fire conditions. Any escalation of in rack Lithium-ion battery thermal runaway may generate more smoke, flammable and toxic off-gas.

While detailed mechanical ventilation design, including air change rates and cooling performance, is outside the scope of this assessment, the revised configuration may affect:

- 1) The rate of off gas release and minimum air change requires.
- 2) Risk of explosion potential.
- 3) Indoor dispersion of flammable and toxic off gases from thermal runaway of Lithium-ion battery systems.
- 4) Tenability conditions for occupants and emergency responders.

The assumptions adopted in the existing FSS relating to ventilation performance, explosion, and tenability should be reviewed and validated against the revised building configuration.

2.4.1.8 Outcome

The proposed MOD 1 Rev 3 development does not introduce new hazard types.

Accordingly, while the overall fire safety strategy remains broadly applicable, targeted review and validation are required for the following:

- 1) Fire load distribution and severity within consolidated data halls.
- 2) Separation distances and layout configuration, including exposure between critical infrastructure from substations and in-rack battery arrangements.
- 3) Firewater demand, storage capacity, and system redundancy under revised conditions.
- 4) Hydrant coverage and accessibility, particularly in relation to revised building footprints.
- 5) Effectiveness of fire detection and suppression systems relative to updated layouts and may change fire load density.
- 6) Adequacy of firewater containment systems for credible fire scenarios involving Lithium-ion batteries.
- 7) Ventilation, explosion risk, and dispersion of flammable and toxic gases associated with Lithium-ion battery thermal runaway events in revised data hall layouts.

No fundamental redesign of the fire safety strategy is anticipated at this stage. However, the above aspects should be reviewed and, where necessary, refined as part of the FSS addendum such that continued compliance with applicable standards and alignment with fire authority expectations is maintained.

2.4.2 Impact on the Emergency Plan and Emergency Services Information Package

The proposed MOD 1 Rev 3 development does not introduce new hazard types or fundamentally alter the site's risk profile. Accordingly, the overall structure and intent of the existing Emergency Response Plan (ERP) and Emergency Services Information Package (ESIP) remain applicable.

Emergency planning for the facility continues to be guided by:

- 1) FRNSW Emergency Services Information Package (ESIP) Guideline [5] and
- 2) Hazardous Industry Planning Advisory Paper No. 1 (HIPAP 1): Emergency Planning [6].

The proposed modification does not introduce new emergency scenarios beyond those already considered under the approved development. Credible incidents, including diesel fires, generator fires, transformer liquid pool fire, and localised electrical fires, remain consistent in nature.

However, the revised site layout and reconfiguration of infrastructure may influence certain operational aspects of emergency response. In particular, updates may be required to reflect:

- 1) Revised locations and configurations of data halls, generators, substations, and associated infrastructure, including location of hydrants, sprinkler isolation point, booster station, FIP location, muster points, etc.
- 2) Updated site access arrangements, including entry points, internal roads, and equipment access zones, fire brigade staging area, hardstand area.
- 3) Changes in the spatial distribution of hazardous materials and critical systems.
- 4) Any adjustments to fire protection system layouts and key firefighting infrastructure.
- 5) Reimposing of any heat and toxic contours from the revised FSS.

It is anticipated that updates to the ERP and ESIP will be undertaken following completion of the amended FSS, which will incorporate the outcomes of this impact assessment and confirm the final fire safety strategy for the modified development.

2.4.2.1 Outcome

The proposed MOD 1 Rev 3 development does not introduce new hazard types or materially alter the emergency risk profile. Therefore, the existing ERP and ESIP frameworks remain applicable. Notwithstanding, targeted updates will be undertaken to reflect the revised site layouts, configuration, emergency access, fire services block plans, hazardous material distribution, fire protection systems tactical plans, and updated consequence contours, following completion of the FSS Addendum to enable alignment with final design and fire authority expectations.

2.4.3 Impact on the Compliances of Legislations, Codes and Standards

The proposed MOD 1 Rev 3 development does not introduce new land uses or additional classes of hazardous materials beyond those already approved under SSD-41589232. Accordingly, the overarching legislative and regulatory framework applicable to the development remains unchanged.

However, the proposed reconfiguration of buildings and supporting infrastructure necessitates a review such that compliance with relevant legislation, codes, and standards is maintained under the modified design.

2.4.3.1 Environmental Planning and Assessment Act 1979 (NSW) & Regulation 2021

The proposed modification is to be assessed under the Environmental Planning and Assessment Act 1979 and associated Environmental Planning and Assessment Regulation 2021.

The MOD 1 Rev 3 development represents a modification to the approved State Significant Development and is anticipated to be progressed via a Section 4.55 modification application.

As the nature and scale of hazardous materials remain consistent with the approved development, no additional approval pathways are triggered. However, consultation with FRNSW may be required as part of the modification process, particularly in relation to updates to fire safety documentation, including the FSS and ESIP.

2.4.3.2 Work Health and Safety Requirements

The development will continue to be subject to the Work Health and Safety Regulation 2025 (NSW) [7].

Class 9 Lithium-ion battery does not fit neatly into the Schedule 11 hazardous chemical thresholds of the NSW WHS Regulation 2025 because Schedule 11 is based on Globally Harmonised System of Classification and Labelling of Chemicals (GHS) hazard categories for individual hazardous chemicals, not on Australian Dangerous Goods (ADG) code.

However, Regulation 361(1A) of the current NSW WHS Regulation 2025 explicitly mandates that an Emergency Plan (EP) is required for a site that stores and handles a total quantity of 25,000 kg or more of Lithium-ion batteries.

Site current quantity of Class 9 lithium-ion battery is above 25,000 kg and facility ESIP have been shared with the FRNSW. In satisfying clause 361, the person conducting a business or undertaking (PCBU) of any applicable site or premises should lodge a copy of the emergency plan with FRNSW, which includes:

- *the emergency plan developed under clause 43 of the WHS Reg.*
- *an Emergency Services Information Package (ESIP) prepared in accordance with FRNSW fire safety guideline [Emergency services information package and tactical fire plans](https://www.fire.nsw.gov.au), available at [fire.nsw.gov.au](https://www.fire.nsw.gov.au).*
- *Any written recommendations made by FRNSW on the emergency plan, including within the ESIP, should be incorporated within the final emergency plan for the site.*

Upon update of the ESIP, it should be shared with the FRNSW.

2.4.3.3 Applicable Standards and guidelines

The development will continue to be designed, constructed, and operated in accordance with relevant Australian Standards and industry guidelines applicable to data centres, fire protection systems, and hazardous materials.

Key standards and guidance documents include, but are not limited to:

- 1) AS 2419.1:2021 – Fire hydrant installations – System design, installation and commissioning [8].
- 2) AS 1940:2017 - The storage and handling of flammable and combustible liquids [9].
- 3) AS 2067:2016 – Substations and High Voltage Installations Exceeding 1kV AC [10].

The proposed modification does not introduce new systems that would trigger additional specialised standards beyond those already applicable to the approved SSD and FSS. However, existing standards should be applied to the revised design and FSS to enable continued compliance.

2.4.3.4 Outcome

The proposed MOD 1 Rev 3 development is not expected to introduce new compliance pathways or fundamentally alter the applicable legislative and regulatory framework. Compliance obligations under existing legislation, codes, and standards remain applicable and are expected to be maintained, subject to the preparation of an FSS addendum reflecting the revised site configuration. In particular:

- 1) Existing WHS obligations will continue, with updates to reflect revised layouts and hazardous material distribution.
- 2) Ongoing consultation with FRNSW and incorporation of their recommendations will be required to support continued compliance - including submission of an updated ESIP to the FRNSW.

3.0 New Design Impact on the Fire Engineering Report (FER)

Table 3-1 below outlines the existing Performance Solutions from the original Fire Engineering Report [2] and commentary on Performance Solution revisions.

Table 3-1 – Existing Performance Solutions and the impact of the new design on the Performance Solutions

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
C3D3	Performance Solution #1 Due to the nature of the building, the compartment sizes will exceed the maximum allowable fire compartments for Type A construction (i.e. 5,000 m² and 30,000 m³): a) Compartment 1 consisting of the internal portion of Shells A, B and C has a floor area of 8,481 m² and volume of 50,886 m³. b) Compartment 2 consisting of the internal portion of Shells E, G, I and part of Shell D has a floor area of 8,965 m² and volume of 53,790 m³. c) Compartment 3 consisting of the internal portion of Shells F, H, J, K and part of Shell D has a floor area of 11,127 m² and volume of 66,762 m³. d) Gantry 1 consisting of the gantry portion of Shells A, B and C has a floor area of 16,688 m² and volume of 100,128 m³. e) Gantry 2 consisting of the internal portion of Shells E, G and I has a floor area of 16,647 m² and volume of 99,882 m³. f) Gantry 3 consisting of the internal portion of Shells F, H, J and K has a floor area of 22,135 m² and volume of 132,810 m³.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D3D26	Performance Solution #2 For security purposes, the doors to each of the data halls are required to be locked with access to and from the data halls being provided by means of electronic security key. As a result, an occupant seeking egress to the space would have to navigate the electronic lock to evacuate from the data hall.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
C4D15	Performance Solution #3 Penetrations passing through the 240/240/240 FRL walls are to be sealed using a tested system that achieve a -/120/120 FRL in lieu of a -/240/240 FRL as there is no system capable of achieving a -/240/240 FRL.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
C4D15	Performance Solution #4 Due to the open nature of the gantries and the requirements for ventilation, service penetrations through each of the six (6) gantry floor slabs, are to remain open and unprotected in lieu of achieving a -/240/240 FRL.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
C4D15	Performance Solution #5 Penetrations passing through the 240/240/240 FRL floors are to be sealed using a tested system that achieve a -/120/120 FRL in lieu of a -/240/240 FRL as there is no system capable of achieving a -/240/240 FRL.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D5	Performance Solution #6 The following variations to D2D5 are applicable to the internal spaces of the building: a) Up to 24 m to a point of choice in lieu of 20 m and up to 47 m to the closest exit on Level 1 exit in lieu of 40 m. b) Up to 86 m to an exit in data halls in lieu of 40 m Level 2 – 5. c) Up to 46 m to a point of choice in lieu of 20 m on Level 2 Compartments 1.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D6	Performance Solution #7 The following variations to D2D6 are applicable to the internal spaces of the building: a) Up to 102 m between exits on Level 1 in lieu of 60 m.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
	b) Up to 165 m between alternative exits on Level 2 – 5 in lieu of 60 m.	
D2D5	Performance Solution #8 The following variations to D2D6 are applicable to the external spaces of the building: a) Up to 60 m to an exit in lieu of 40 m on Level 6 Compartment 1. b) Up to 41 m to an exit in lieu of 40 m on Level 7 Compartment 1. c) Up to 83 m to an exit in lieu 40 m on Level 7 Compartments 2 and 3. d) Up to 30 m to a point of choice and 71 m to an exit on the Gantry.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D6	Performance Solution #9 The following variations to D2D6 are applicable to the external spaces of the building: a) Up to 120 m between alternative exits on Level 6 Compartment 1 in lieu of 60. b) Up to 166 m between exits in lieu of 60 m on Level 7 in lieu of 60 m.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D8	Performance Solution #10 The space between the containerised electrical switchrooms and the 240/240/240 FRL wall on the gantries is to be at least 850 mm in lieu of 1 m.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E1D2 AS 2419.1:2021	Performance Solution #11 Due to the size of the building and location of the fire stairs, the internal fire hydrants are to be located outside the fire stair on the floor plate to achieve coverage of the entire floor area.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. However, it is noted that based on confirmation from the Fire Services designer during the previous modification assessment that due to the reduced size of the building no hydrants are required on the floor plate of the building under the new design. As such, this Performance Solution will be removed.

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
E1D2 AS 2419.1:2021	Performance Solution #12 Due to the size of the building and location of the fire stairs, two (2) lengths of hose (i.e. up to 70 m) are required from internal fire hydrants to achieve coverage of the entire floor area on both the gantries as well as within the data halls.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E1D2 AS 2419.1:2021	Performance Solution #13 As the building is proposed to have a total volume greater than 108,000 m ³ , it is considered outside the scope of AS 2419.1:2021 and thus does not comply with the Standard or BCA E1D2. It is proposed to install a fire hydrant in accordance with AS 2419.1:2021 through consultation with FRNSW to determine the minimum operational requirements.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E1D2 AS 2419.1:2021	Performance Solution #14 The fire hydrant and sprinkler booster assembly will be located away from the main entrance, due to the site being provided with multiple entry points.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E1D3	Performance Solution #15 Due to the sensitive nature of the electrical equipment, fire hose reels are to be replaced with fire extinguishers in the following locations: a) All data halls on Levels 2 to 6; b) The GIS Switchrooms; and c) Substations	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E1D4	Performance Solution #16 The building is to be sprinklered throughout in accordance with AS 2118.1:2017 with the exception of the following locations due to the sensitive nature of the equipment: a) Within the generator enclosures on the gantries; and	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
	b) Within the low voltage switchrooms on the roof top.	
E1D16	Performance Solution #17 Construction of the building will occur over many stages. Stage 1 encompasses the development of the Level 1 office space, associated open carpark and all Levels of Shell A (i.e. Level 1-7). During this time, the existing building and carpark is to remain operational until its demolition in next stage for the rest of the building. During the construction of Stage 1, the new fire hydrant system that will serve the constructed data hall will be installed to service the works completed as part of Stage 1. As a result, the site will be provided with two (2) fire hydrant systems. The existing fire hydrant system and booster will service the existing buildings, and the new fire hydrant system and booster will service the Stage 1 works.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E2D6	Performance Solution #18 The building is to be without a zone smoke control system based on the compartmentation achieving 120/120/120 FRL and 240/240/240 FRL.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E2D4	Performance Solution #19 The fire-isolated stairs serving the building are to be without stair pressurisation based on the fire separation of the individual data halls and the corridor acting as a smoke lobby.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E4D9	Performance Solution #20 The following variations to the EWIS System are required for the subject building: a) Speech intelligibility is to be removed from the emergency warning and intercom	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
	system (EWIS) as a staged evacuation is not practical for the facility. b) Warden Intercom Points (WIPs) will be provided within the fire stairs only instead of being located throughout all parts of the building. This means that no WIPs will be provided on the gantries or within the individual data halls.	adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E4D9	Performance Solution #21 The EWIS fault zone is to be increased up to ~2,300 m² in lieu of 2,000 m² to match the sprinkler valve zoning.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
C3D7	Performance Solution #22 The building is proposed to be without spandrel separation based on the installation of an AS 2118.1:2017 sprinkler system. It is noted that this is a technical non-compliance as the building is not considered to be fully sprinkler protected as the areas outlined in Performance Solution #16.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D3D27	Performance Solution #23 The doors in the fire stairs are to be locked from the inside on all levels and do not permit re-entry into the building on any level during normal operation. On fire trip the doors on all levels will unlock. The door on every fourth level will be provided with a manual call point that will unlock the door and activate the fire alarm in lieu of it always being unlocked.	This item was not specifically mentioned in the Preliminary BCA Report [11]. However, due to the security requirements of the site it is expected that it will be retained to stop occupants from accessing other floors of the building. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
E1D17 & E2D21	Performance Solution #24 The subject building will contain two (2) special hazards: a) Diesel in the form of bulk storage and within day tanks in generators on the gantries; and	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
	b) Lithium-Ion batteries.	adversely impacting on the existing fire safety strategy or fire and life safety within the building.
S7C3 & S7C4	Performance Solution #25 The internal linings (i.e. floor, wall and ceiling) within the building are proposed to be based on the installation of an AS 2118.1:2017 sprinkler system. It is noted that this is a technical non-compliance as the building is not considered to be fully sprinkler protected as the areas outlined in Performance Solution #16.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D12	Performance Solution #26 The rooftop fire stairs will terminate on the level below the rooftop plant mezzanine space. Thus, occupants evacuating from the rooftop plant mezzanine are required to travel via a non-fire-isolated stair to reach the fire-isolated stair on the level below.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D14	Performance Solution #27 Egress from the mezzanine to a road or open space is via a mix of non-fire-isolated stairs and fire-isolated stairs with a total travel distance of more than 80 m.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
D2D12	Performance Solution #28 The building will have the following variations to BCA D2D12 in relation to the fire stair discharge: a) The discharge path from the fire stair on the level of egress discharges through the gantry on Level 2 and below the Level 3 gantry to reach a road or open space. b) The discharge pathway exceeds 20 m (up to 25 m) to an open space and requires occupants to pass unprotected openings from the gantries.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
D3D26	Performance Solution #29 The GIS switchrooms are to be provided with large fire doors in the path of egress that require fire activated bolts to maintain the FRL of the fire door.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The GIS Switchroom is constructed and the proposed design changes to the rest of the site are not expected to adversely impact on the egress from the GIS Switchroom.
AS 1668.1:2015	Performance Solution #30 The supply air system to the data halls is required to operate in the event of a fire in these spaces. Thus, the fusible link is to be removed from the damper such that only the damper that will operate in the fire affected compartment will remain open.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
AS 1668.1:2015	Performance Solution #31 The exhaust from the battery rooms is required to operate in the event of a fire in these spaces. Thus, the fusible link is to be removed from the damper such that only the damper that will operate in the fire affected compartment will remain open.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
AS 1668.1:2015	Performance Solution #32 The makeup air duct and exhaust duct connecting the data halls with the vertical riser shaft is to be constructed to achieve at least a - /120/120 FRL in lieu of a - /240/240 FRL.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
AS 1670.1:2018	Performance Solution #33 An additional line of detectors is to be provided in the hot corridors within the data halls which are located more than 600 mm below the ceiling.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
AS 2118.1:2017	Performance Solution #34	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design.

BCA Clause	Existing Performance Solution in Lote FER Rev B dated 24/03/25	Lote Comment on New Design
	The following variations to AS 2118.1 Clause 2.3.1.8 (a) are required to provide coverage to the building: a) A single tail end system will serve an area of up to 2,200 m² in lieu of 1,000 m²; and b) One (1) wet pipe installation will serve an area of up to 9,000 m² in lieu of 2,500 m².	The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
C3D13	Performance Solution #35 The containerised switchrooms located on the rooftop plant area are to be open to the atmosphere in lieu of being fire separated by construction achieving a 120/120/120 FRL.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
S19C4	Performance Solution #36 The Fire Control Centre is to be located ~3.5 m above the street level and 0.65 m above the access road in lieu of being not more than 300 mm above the street level based on the slope of the land.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
C3D13	Performance Solution #37 The emergency generators serving the mechanical exhaust systems in the data halls are to be open to the gantries instead of being fire separated from the gantries.	The Preliminary BCA Report [11] notes that this Performance Solution is still applicable to the proposed new design. The existing Performance Solution will be amended to cover the proposed changes to the design without adversely impacting on the existing fire safety strategy or fire and life safety within the building.
New Performance Solutions Proposed as part of Modification 2		
C4D6	N/A – Not part of the original FER	Egress doors are only capable of achieving up to - /120/30 FRL in lieu of -/240/30 FRL without the use of fire activated bolts. It is noted that the above are to be addressed through an additional Performance Solution.

4.0 Conclusions

4.1 Conclusions – Fire Safety Study

The proposed MOD 1 Rev 3 development represents a reconfiguration of the approved SYD3 data centre layout and does not introduce new land uses or additional classes of hazardous materials. The overall hazard profile of the site remains broadly consistent with the approved development.

No new fire or explosion scenarios beyond those previously assessed have been identified. However, changes to building configuration, consolidation of data halls, and modifications to supporting infrastructure such as additional substation may influence elements of the fire safety strategy.

The existing Fire Safety Study (FSS) remains applicable in principle. However, key assumptions require review and validation against the modified design. These include fire detection and protection system, hydrant coverage, firewater containment, separation distances, and ventilation-related considerations.

The Emergency Response Plan (ERP) and Emergency Services Information Package (ESIP) remain suitable in structure and will require updates to reflect the revised layout and infrastructure.

From a regulatory perspective, the proposed modification does not introduce new compliance pathways. The development will proceed under a Section 4.55 modification, with existing obligations under the NSW Government, Work Health and Safety Regulation 2025 (NSW), NCC 2022, and applicable standards continuing to apply.

Subject to updates to the FSS, ERP, ESIP, and associated fire safety documentation, the development is capable of maintaining compliance with applicable legislation, NCC 2022, and relevant standards. Ongoing consultation with FRNSW and incorporation of their recommendations will be required to support continued compliance.

Overall, the proposed MOD 1 Rev 3 development is considered compatible with the existing fire safety framework, subject to targeted updates and validation through the proposed FSS Addendum.

4.1.1 Scope of Works Arising

- 1) The proposed MOD 1 Rev 3 development does not introduce new hazard types. However, it may result in change concentration of Lithium-ion batteries within data halls.

Accordingly, while the overall fire safety strategy remains broadly applicable, targeted review and validation are required for the following:

- a) Fire load distribution and severity within consolidated data halls.
 - b) Separation distances and layout configuration, including exposure between critical infrastructure from substations and in-rack battery arrangements.
 - c) Firewater demand, storage capacity, and system redundancy under revised conditions.
 - d) Hydrant coverage and accessibility, particularly in relation to larger building footprints.
 - e) Effectiveness of fire detection and suppression systems relative to updated layouts and change fire load density.
 - f) Adequacy of firewater containment systems for credible fire scenarios involving lithium-ion batteries redistribution.
 - g) Ventilation, explosion risk, and dispersion of flammable and toxic gases associated with lithium-ion battery thermal runaway events.
- 2) The proposed MOD 1 Rev 3 development does not introduce new hazard types or materially alter the emergency risk profile; therefore, the existing ERP and ESIP frameworks remain applicable.

Notwithstanding, targeted updates will be undertaken to reflect the revised site layouts, configuration, emergency access, fire services block plans, hazardous material distribution, fire protection systems tactical plans, and updated consequence contours, following completion of the FSS addendum to confirm alignment with final design and fire authority expectations.

- 3) No fundamental redesign of the fire safety strategy is anticipated at this stage. However, the above aspects should be reviewed and, where necessary, refined as part of the FSS addendum to enable continued compliance with applicable standards and alignment with fire authority expectations.
- 4) The proposed MOD 1 Rev 3 development is not expected to introduce new compliance pathways or fundamentally alter the applicable legislative and regulatory framework. Compliance obligations under existing legislation, codes, and standards remain applicable and are expected to be maintained, subject to updates FSS reflecting the revised site configuration. In particular:
 - a) Existing WHS obligations will continue, with updates to reflect revised layouts and hazardous material distribution.
 - b) Ongoing consultation with FRNSW and incorporation of their recommendations will be required to support continued compliance - including submission of an updated ESIP to the FRNSW.

4.2 Conclusions – Fire Engineering Report

It is noted from the assessment presented in Section 4 that the proposed design changes can be addressed through updated Performance Solutions. It is noted from the assessment presented in Section 4 that the proposed design changes can be addressed through an update of the existing Performance Solutions and addition of one (1) new Performance Solution.

5.0 Quality Information

Revision	Revision Date	Details	Document Details		
			Prepared	Reviewed	Authorised
A	15/04/2026	Draft for Certifier and design team review only	Christopher Koch	Joyce Van	Dr S A Magrabi Director – Fire & Risk Engineering BDC No: 0240
B	22/04/2026	For Submission	Christopher Koch	Dr S A Magrabi	Dr S A Magrabi Director – Fire & Risk Engineering BDC No: 0240
C	24/04/2026	Updated with Client Comments	Christopher Koch	Dr S A Magrabi	Dr S A Magrabi Director – Fire & Risk Engineering BDC No: 0240
D	28/04/2026	Updated with Client Comments	Christopher Koch	Dr S A Magrabi	Dr S A Magrabi Director – Fire & Risk Engineering BDC No: 0240

6.0 Reference Documents

The review is based on the below documents:

- 1) Preliminary BCA Report prepared by Mckenzie Group dated 20/04/2026 [11]
- 2) Lote Fire Engineering Report (FER) Rev B dated 24/03/2025 [2]
- 3) Lote Fire Safety Study (FSS) Rev J dated 20/09/2025 [1]
- 4) Architectural Plans outlined in Table 6-1.

Table 6-1 – Architectural Plans

Drawing No.	Title	Issue	Date
DA010	OVERALL SITE PLAN	P	17/04/2026
DA011	OVERALL LEVEL 1 PLAN (LOWER GROUND)	M	17/04/2026
DA012	OVERALL LEVEL 2 PLAN (UPPER GROUND)	M	17/04/2026
DA013	OVERALL LEVEL 3 PLAN	L	17/04/2026
DA014	OVERALL LEVEL 4 PLAN	K	17/04/2026
DA015	OVERALL LEVEL 5 PLAN	K	17/04/2026
DA016	OVERALL LEVEL 6 PLAN (LOWER ROOF)	K	17/04/2026
DA017	OVERALL LEVEL 7 PLAN (UPPER ROOF)	K	17/04/2026
DA020	SITE ELEVATION	M	17/04/2026
DA030	SITE SECTION	L	17/04/2026
DA031	SITE SECTION	L	17/04/2026

7.0 References

- [1] Lote Consulting, 'Fire Safety Study - 51 Huntingwood Dr, Huntingwood', Lote Consulting, Sydney, Fire Safety Study (FSS) 380926, Sep. 2024.
- [2] Lote Consulting, 'Fire Engineering Report - Airtrunk SYD 3', Lote Consulting, Sydney, Fire Engineering Report (FER) 380926, Mar. 2025.
- [3] DNV, 'Technical Reference for Li-ion Battery Explosion Risk and Fire Suppression', Technical Reference 2019–1025 Rev 4, Nov. 2019.
- [4] NSW Department of Planning, 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. NSW Department of Planning, 1994.
- [5] Fire and Rescue NSW, 'Emergency services information package and tactical fire plans'. FRNSW, 2022. [Online]. Available:
https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/guidelines_ESIP_and_TFP.pdf
- [6] NSW Department of Planning, 'Hazardous Industry Planning Advisory Paper No. 1 (HIPAP 1) - Emergency Planning'. Department of Planning, Sydney, Jan. 2011. [Online]. Available:
<https://www.planning.nsw.gov.au/sites/default/files/2023-03/hazardous-industry-planning-advisory-paper-no-1-emergency-planning.pdf>
- [7] SafeWork NSW, 'Work Health and Safety Regulation'. SafeWork NSW, 2025.
- [8] Committee FP-009, 'AS 2419.1:2021 - Fire Hydrant Installations - System Design, Installation and Commissioning'. Standards Australia, Mar. 09, 2021.
- [9] Standards Australia, 'AS 1940:2017 - Storage and Handling of Flammable and Combustible Liquids'. Standards Australia, 2017.
- [10] Committee EL-043, 'AS 2067:2016 - Substations and high voltage installations exceeding 1 kV a.c.'. Standards Australia, Sep. 14, 2016.
- [11] Mckenzie Group Consulting, 'Regulatory Compliance Report - Air Trunk 1 SYD 3 Data Centre 51 Huntingwood Drive, Huntingwood NSW 2148', Mckenzie Group, Sydney, BCA Report 230329–14BCA, Apr. 2026.