Reference: 242040_SSD-RFI_01

11 February 2025

ESR Australia Pty Ltd
88 Phillip Street
Sydney NSW 2000

**Attn: Grace Mcdonald**

**RE: Horsley Logistics Park Stage 2 (SSD-71144719) | Fire Brigade Access Review**

## Introduction

The purpose of this statement is to respond to the Department of Planning, Housing and Infrastructure (DPHI) request for additional information made to ESR Australia on 30th January 2025 (DPHI reference: SSD-7114471).

The following provides clarity around the emergency vehicle perimeter access design's compliance with the deemed-to-satisfy (DtS) provisions of the Building Code of Australia 2022 (BCA), and the proposed fire safety engineering strategy to address those deviations from the BCA DtS provisions.

## BCA Compliance Review – Fire Brigade Access

A review of the perimeter vehicular access roadways for emergency vehicles has been completed relative to the prescriptive DtS provisions of the BCA.

The review has identified the areas of non-conformance detailed within Table-1 and as illustrated in Figure-1.

Table-1: Departures from BCA DtS Provisions Relative to the Vehicular Perimeter Access Roads

| Regulatory Clause/ Performance Requirement | Regulatory Variation |
|---|---|
| **Perimeter Vehicular Access**<br>BCA Clause C3D5<br>Performance Requirement C1P9 | ▸ Clause C3D5(2)(a): The vehicular access road is discontinuous in the following locations –<br>○ the western end of the southern dispatch hardstand; and<br>○ the western end of the central dispatch hardstand.<br>▸ Clause C3D5(2)(b): The vehicular access road navigates more than 18m from the building in the following locations –<br>○ Around the northern side of the site, along Johnston Crescent, where the roadway is 36m from Warehouse A. |

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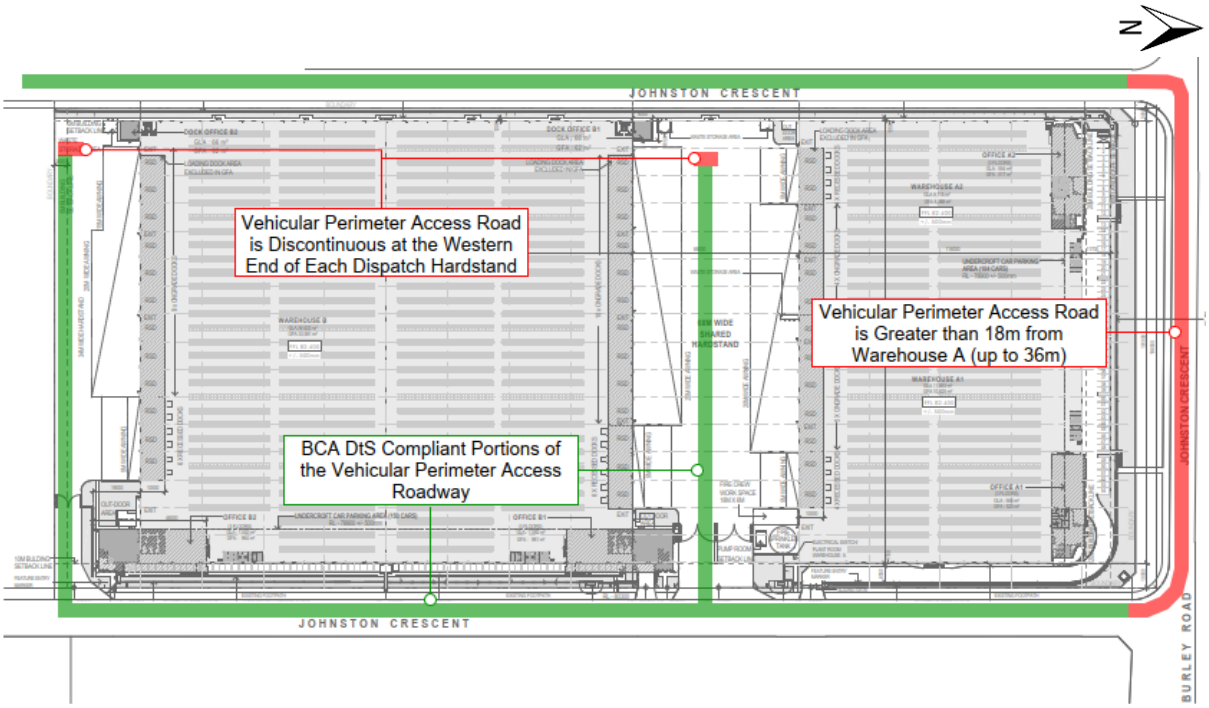


Figure-1: Vehicular Perimeter Access Road and Identified Areas of BCA Non-Conformance

## Compliance Pathway and Adhering to FRNSW Guidelines

A fire engineered Performance Solution will be developed ahead of the relevant Construction Certificate and subject to FRNSW approval through the Fire Authority referral pathway detailed within the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

The Performance Solution will specifically address the variation from the prescriptive BCA DtS provisions listed in Table-1; noting that a Performance Solution is permitted within Sections 10.2.4 and 10.2.6 of the FRNSW Fire Safety Guideline "Access for fire brigade vehicles and firefighters [1].

## Fire Brigade Access - Fire Safety Review

Adoption of any Performance Solution for vehicular perimeter access road must ensure that the fire brigade have adequate access to the building, and that the roadway is suitable for all intended uses by the fire brigade and other emergency vehicles.

The summarised fire safety review below has been developed to provide confidence in the design and demonstrate these objectives have been achieved to meet the BCA Performance Requirement C1P9 and the FRNSW Guidelines.

### *Fire Brigade Access Road >18m from the Building*

In this instance the fire brigade access road utilises Johnston Crescent on three (3) sides. The access road to the east and west are BCA DtS compliant, however the northern portion of the

*1 NSW Government, Fire + Rescue NSW Fire Safety Branch Community Safety Directorate, "Fire Safety Guideline - Access For Fire Brigade Vehicles and Firefighters" version 05.01, issued 17/11/2020.*

roadway is positioned 36m from the façade of Warehouse A. While this setback distance is a 100% increase from the BCA DtS limitation, Affinity Fire Engineering consider this arrangement to be a typical design common to many industrial facilities where vehicular access road travels around the staff carparking area.

While this setback is not significant or excessive relative to a DtS scenario, the landscape and staff carpark between Johnston Crescent and Warehouse A presents a challenge for fire fighter access due to the carpark being elevated by approximately 3.5m above Johnston Crescent and a site security fence separating the two locations. On account of the above the fire strategy incorporates:

- Two (2) additional pedestrian stairs to enable access between Johnston Crescent and the external carpark where fire hydrants and entry doors into Warehouse 1A and 1B are located.
- Given the two additional stairs are dedicated to FRNSW use, gates within the security fence shall be padlocked with 003 keys to ensure unrestricted fire fighter access.

The pedestrian stairways are defined in Figure-2. The stair locations have been strategically located to ensure an external hydrant would be accessible within 50m of Johnston Crescent as required in the FRNSW Guideline (Clause 8.2.1) and the Australian Standard for fire hydrant system design, AS2419.1:2021 (Clause 3.5.3.3(a)(i)).

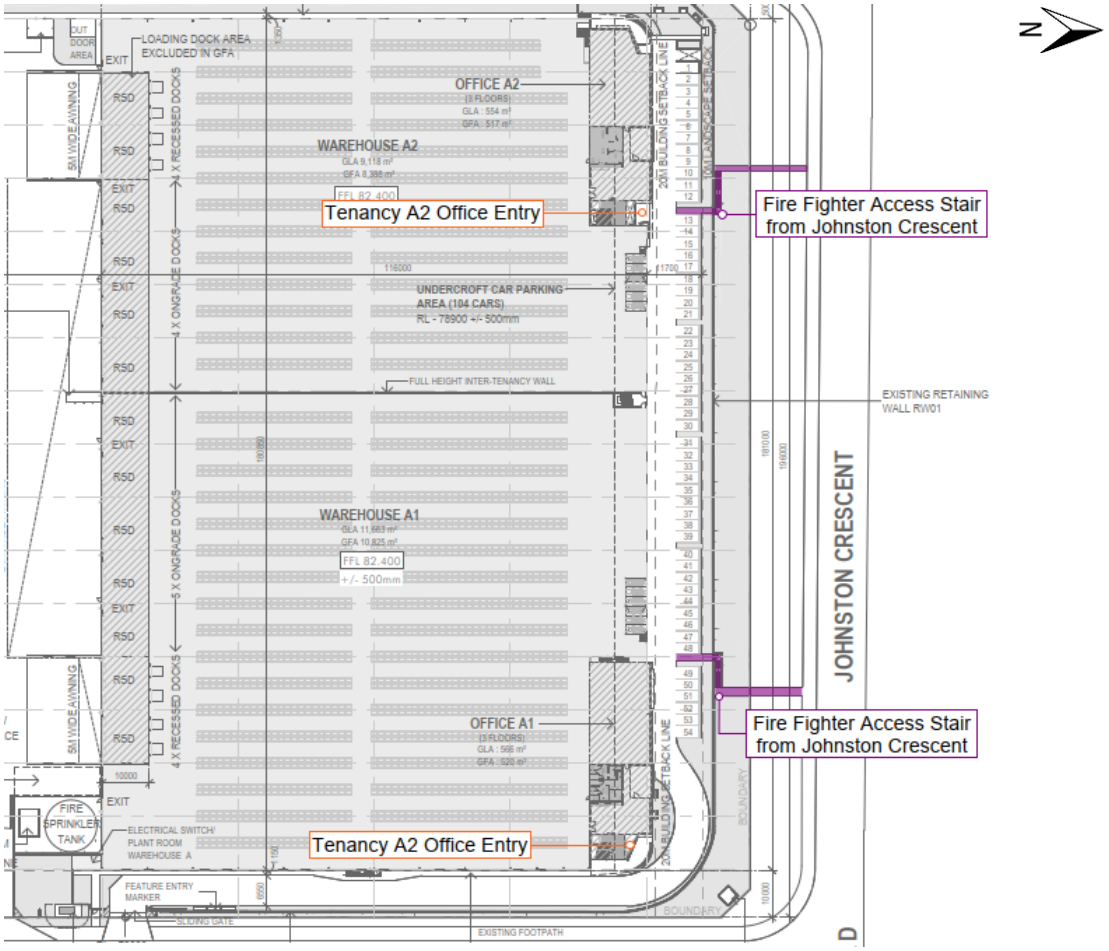


Figure-2: Fire Fighter Access Stairs from Johnston Crescent

It is also considered that Johnston Crescent is appropriate for aerial firefighting given the minor increase in setback distances and the topographical level changes. Based on the fire appliance reaches defined in Clause 10.4.5 of the FRNSW Guideline [2] *(repeated in below in Figure-3)* fire brigade appliances could be staged anywhere along Johnston Crescent and perform aerial firefighting operations to apply water to the buildings without significant difficulty.

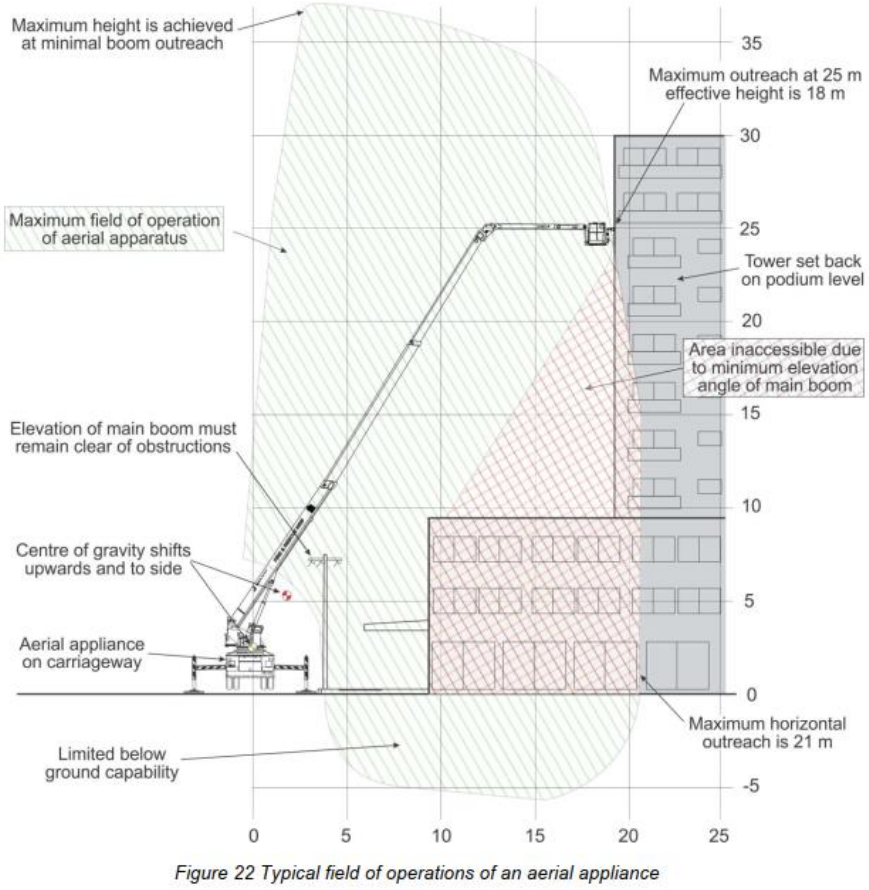


Figure-3: Excerpt from the FRNSW Guideline for Emergency Vehicles

### *Discontinuous Vehicular Access Path*

In this design a continuous roadway is predominately provided, with the exceptions being the western ends of the two (2) dispatch hardstands where there is a change in level between the dispatch hardstands and Johnston Crescent to the west.

A continuous vehicular travel path is important to fire brigade intervention as it allows fire fighter vehicles to quickly travel away from an immediate place of danger should there be a potential risk to safety. Potential risks may include a fire spreading to their location, structural collapse that may impact the access road, or a change in the wind direction where smoke moves to their location.

*2 NSW Government, Fire + Rescue NSW Fire Safety Branch Community Safety Directorate, "Fire Safety Guideline - Access For Fire Brigade Vehicles and Firefighters" version 05.01, issued 17/11/2020.*

By having a continuous travel path in a forward direction, an appliance can quickly evacuate without the large brigade appliances having to undertake a complicated turning manoeuvre or reverse an extended distance to exit the site and avoid the danger.

In a typical BCA DtS compliant design, the standard 6m wide road does not allow for any form of turning when considering the 10m long (pumper) or 12.5m long (aerial) appliances that FRNSW use. Hence brigade would need to reverse at a slow pace to remove themselves from any fire threatening situations if the fire is in the path of travel.

This design the areas of discontinuous access are afforded a much wider access road on account of the concrete hardstands. This design is therefore considered to mitigate the above noted risks through the following design measures:

- The dispatch hardstands have been sized to ensure there is ample room for FRNSW appliances to undertake a quick manoeuvre to turn around and exit the site if deemed necessary.

Detailed sweep path diagrams were prepared as part of the original design and presented below in Figure-4.

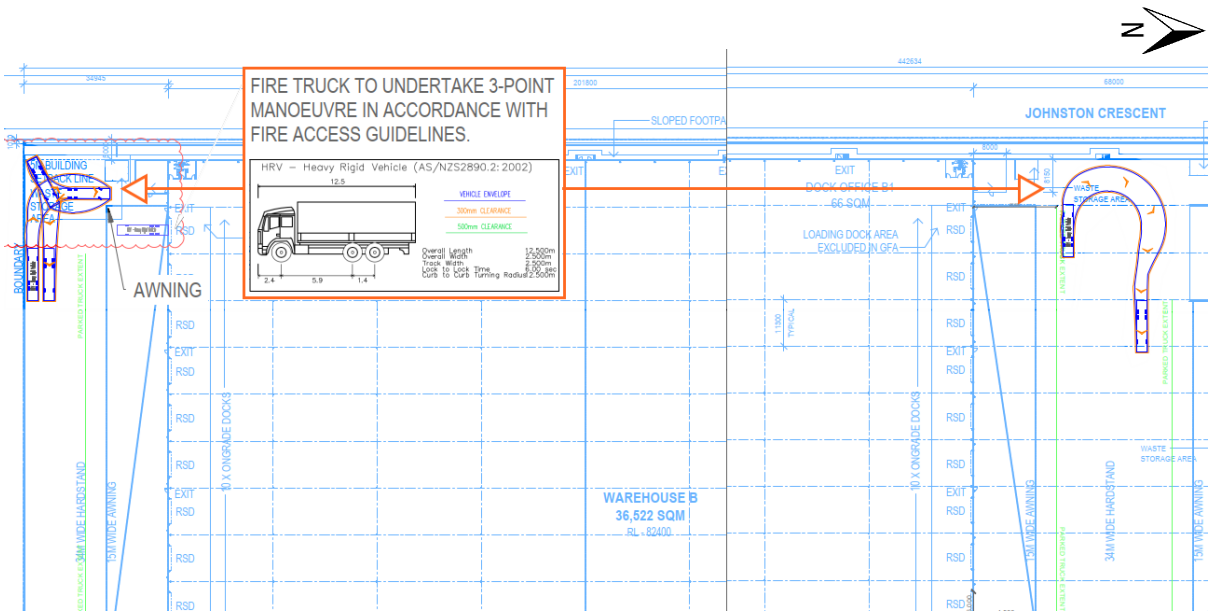


Figure-4: Fire Brigade Appliance Turning Sweep Path Diagrams at the Southern and Central Hardstands

As illustrated above, by allowing an appliance to turn around with relative ease, fire fighters can position their appliance in an arrangement that it is pointing towards the site's exit prior to setting up any equipment or deploying the aerial appliance stabilisers. Therefore, when an emergency arises, the vehicle can quickly exit from the location with minimal delay to meet the operational needs of FRNSW while ensuring operator safety.

## Conclusion

Based on the provisions incorporated into this development submission and Affinity Fire Engineering's recent experience on projects of a similar design arrangements, we anticipate the fire safety engineering assessment to be conducted as part of the Construction Certificate stage will achieve the Performance Requirements of the relevant BCA and all FRNSW requirements.

As noted previously, formal engagement with FRNSW will be completed at the through the Legislative requirement for Fire Authority referral pathway detailed within the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

We trust that the above information is sufficient for Consent Authority's needs with respect to fire safety design and compliance with the relevant building regulations in this regard. Should any further information be required for a determination to be made please contact the undersigned on 02 9194 0590.

Yours faithfully

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