

Fire Safety Engineering Design Review for SSDA Submission



Project Bower Bird –15 Gow Street, Padstow NSW

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Author: **Parkan Behayeddin**

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1. General

Scientific Fire Services (SFS) has undertaken a preliminary review and high-level assessment of the architectural drawings and concepts for the proposed development which comprises the redevelopment of an existing site. The existing site currently consists of a number of industrial warehouse structures and administration buildings operated by Dulux Group and Selleys. The proposal is to refurbish an existing manufacturing building, demolish existing buildings and construct a new structure which ultimately will abut against the existing manufacturing building on the southern side of the site. Other works also include the retention of the existing office building, technical centre greenhouse and nearby Manufacturing Building 1 and Manufacturing Building 2.

This Fire Safety Engineering Design Review has been prepared by SFS Australia P/L to accompany a State Significant Development Application (SSDA) for the SSDA associated with the works at 15 Gow Street, Padstow. The site is legally described as Lot 100 in Deposited Plan 1011185.

It is noted that the site across the public road (i.e. 20 Gow Street, Padstow - Deposited Plan 1064349) shall not consist of any building works and as such, is generally excluded from the scope of works for this fire safety engineering package. This site is currently used as an open (external) carpark and is proposed to continue to be used as an open (external) carpark for employees/visitors attending the buildings owned/operated by Dulux Group.

2. The Project

This report has been prepared to accompany an SSDA (SSDA Submission Reference: SSDA-71052213) pursuant to 15 Gow Street and 20 Gow Street, Padstow. The overall proposed development applies to the land identified as 15 Gow Street and 20 Gow Street, Padstow, being Lot 100 DP1011185 and Lot 53 DP1064349. The subject sites are currently occupied by Dulux Group and Selleys and constitutes an area of approximately 6ha. The subject site is within the IN1 General Industrial zone pursuant to the Canterbury-Bankstown Local Environmental Plan 2023 (CBLEP2023). The subject site is located within the Canterbury-Bankstown Local Government Area (LGA). The subject site is located approximately 3.5km from Bankstown, 12km from Liverpool and 20km from Sydney CBD. Access to the road network is from the north of the subject site which is within close proximity to the South Western Motorway.

Surrounding land uses in the vicinity of the subject site include:

- North – a range of industrial developments zoned IN1 General Industrial and Bankstown STS; and
- Substation zoned SP2 Infrastructure; and
- East – Salt Pan Creek zoned RE1 Public Recreation and W1 Natural Waterways; and
- South – a range of industrial developments zoned IN2 Light Industrial; and
- West - a range of industrial developments zoned IN1 General Industrial.

The location of the subject site and the existing development is depicted below. Please also refer to the attached Project Brief prepared by Willowtree Planning (refer to Appendix C for details).

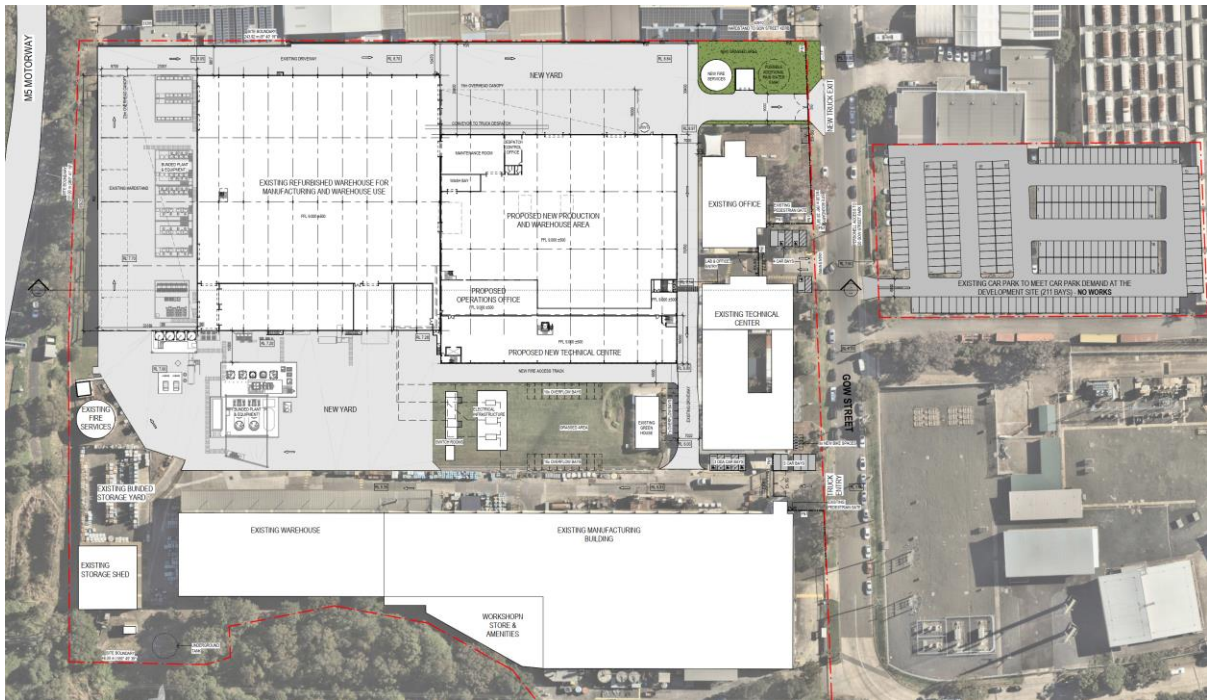


Figure 2.1: Proposed Site Plan

Below is a markup illustrating the perimeter vehicular access provisions depicting the proposal for operational access for emergency services personnel.

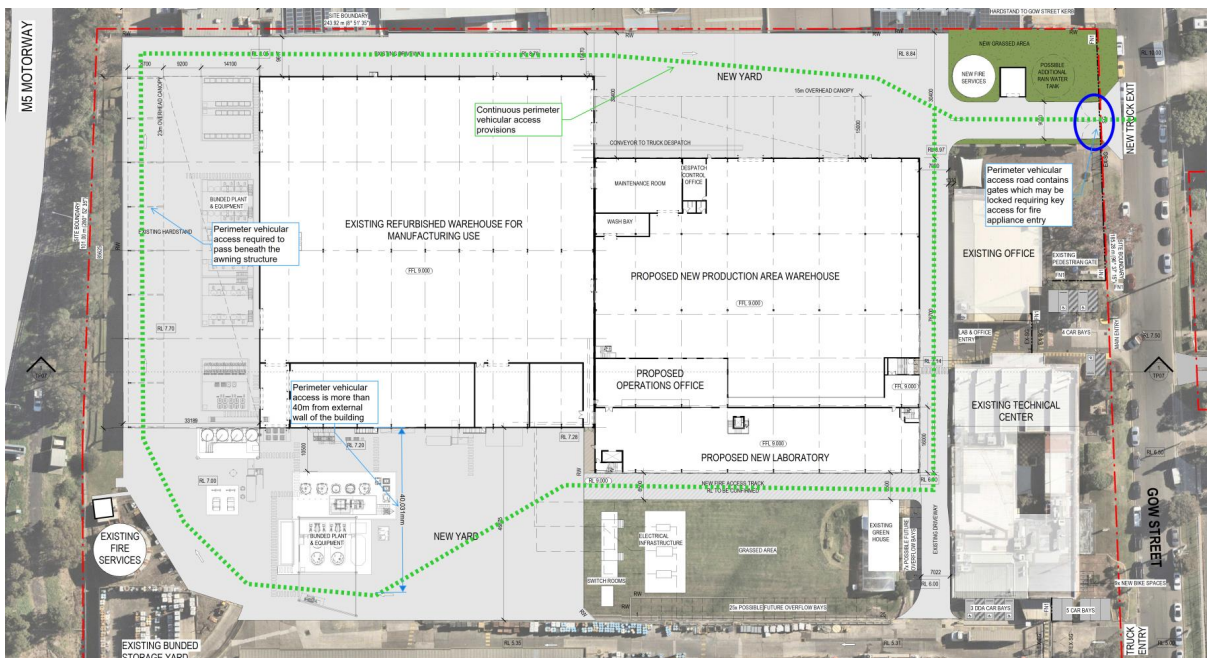


Figure 2.2: Perimeter Vehicular Access Provisions

The proposed development comprises Class 5 (Office/Administrative), Class 7b (warehouse), Class 8 (Manufacturing/Laboratories) occupancies.

The Development Site Areas are:

- 15 Gow Street: 53,830m²

- 20 Gow Street: 6,341m²
- Total Site Area is: 60,171m²

The subject buildings are proposed to be designed and constructed in accordance with the provisions commensurate with Type C fire resisting construction and the *Large Isolated Building* (LIB) provisions prescribed in Volume One of the Building Code of Australia (BCA 2022).

Outlined below is a BCA summary of the overall details of the buildings.

Table 2.1: Description of Building

Building's Summary	
Building Classification	Class 5 (Office), Class 7b (Warehouse) and Class 8 (Manufacturing/Laboratory)
Number of Storeys Contained	Three (3)
Rise in Storeys	Three (3)
Type of Construction Required	Type B (<i>Large Isolated Building</i>)

3. Purpose

The preliminary fire safety engineering review is in the process of being undertaken to determine 'in-principle' whether the designs for each building will achieve compliance with the Performance Requirements of the Building Code of Australia (BCA) (ABCB, 2022). The design review relates to the fire-resisting construction, egress provisions and fire protection services proposed for the entire development.

The design issues specific to the development (refer to Table 4.1) will be formally assessed through the application of the fire safety risk engineering process in accordance with the Australian Fire Engineering Guidelines (AFEG) (ABCB, 2021). It is the expectation that a suitable *Performance Solution* will be developed and supported through robust fire engineering methodologies in accordance with the current design proposal.

4. Compliance Expectation

The relevant *Performance Requirements* against which the Performance Solution is assessed must be established in accordance with the BCA 2022. From Clause A2G2, a number of *Performance Solutions* may be used to show that a *Building Solution* complies with the Performance Requirements. The following table provides a summary of the fire safety risk engineering aspects of the designs that will be the subject of the project *Performance Solution*. It shall be noted that the design issues listed in the table below are indicative only. The full extent of the BCA DtS departures is to be identified by the BCA consultant in due course.

Table 4.1: BCA departures – Anticipated fire safety engineering scope of works

Design Issues to be Addressed	BCA DtS Provision	Performance Requirement
The following design issues have been identified with respect to the proposed perimeter vehicular access serving each building: • The perimeter vehicular access is located more than 18m away from the external wall of the building (i.e. eastern aspect); and • Any perimeter fence gates (and gates forming part of the vehicular access) that are proposed to be locked are required to be fitted with suitable conventional padlocks to enable fire-fighter access with a standard key (i.e. 003 key locks). Alternatively, non-	Clause C2D3 Clause C2D4	C1P9

Design Issues to be Addressed	BCA DtS Provision	Performance Requirement
conventional padlocks are permitted provided access keys are provided to Fire & Rescue New South Wales (FRNSW) responding fire station stations; and The perimeter vehicular access on the southern aspect requires fire appliances to pass beneath the awning structure Note: The perimeter vehicular access must be designed taking into consideration to the FRNSW Policy 4 Vehicular Access Guidelines. Refer to Fire Safety Guideline “Access for fire brigade vehicles and firefighters” https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/guidelines_access_for_emergency_vehicles.pdf Note: The perimeter vehicular access provisions will comply with the relevant Performance Requirements of the BCA and furthermore, conform with the aforementioned FRNSW Policy 4 Vehicular Access Guidelines.		
It has been identified that the exit travel distance to one of the alternative exits within the <u>warehouse/manufacturing portions</u> exceeds the maximum prescribed exit travel distances. More specifically: - The exit travel distance to the nearest of two (2) exits exceeds 40m; and - The distance between alternative exits exceeds 60m.	Clause D2D5 Clause D2D6	D1P4 & E2P2
The fire hydrant system is proposed to be designed & installed in accordance with AS2419.1:2021. With reference to adoption of AS2419.1:2021, the following specific variations from AS2419.1:2021 are proposed to be assessed as part of the Performance Solution: - Permit fire hydrants to be located beneath awning structures and furthermore, be designed to achieve external fire hydrant performance whilst utilising two (2) lengths of 30m hydrant hose for the purpose of achieving fire hydrant coverage. In this instance, fallback fire hydrants will be required providing coverage to the fire hydrant located beneath the awning/canopy structure; and - Permit the hydrant booster assembly to be located within a distance from the buildings which is less than 1.5 times the building height; and - Permit the fire hydrant booster assembly to not within direct line of sight of the main entry to the buildings.	Clause E1D2 inter alia AS2419.1:2021	E1P3
The fire hose reel system shall be designed and installed in accordance with AS2441.1:2005 with the exception of the following: It is proposed to permit 50m fire hose reels in lieu of 36m fire hose reels at the warehouse portions only.	Clause E1D3 inter alia AS2441:2005	E1P1
It is proposed to permit the sprinkler booster assembly to be located adjacent to the sprinkler tank facing the emergency vehicular access road; and - Not being within direct line of sight of the main entry contrary to Clause 7.3(d)(i) from AS2419.1:2021; and - Not be adjacent to the principal vehicular entry contrary to Clause 7.3(d)(i) from AS2419.1:2021; and - Not be located at the site boundary; and - Sprinkler booster is located within 1.5 x the building height.	Clause E1D4, Specification 17, AS2419.1:2021 & AS2118.1:2017	E1P3 & E1P4
It is proposed to omit the requirement to provide an automatic smoke exhaust system and associated smoke baffle & automatic smoke detection within the buildings. In this instance, it is proposed to permit a manually operated smoke clearance system having a smoke clearance capacity of 1 air change per hour for the warehouse enclosure.	Clause E2D10, & Specification 21	E2P2
Directional and non-directional exit signs are to be installed throughout the buildings in accordance with Part E4 from Volume One of the BCA and AS2293.1:2005 with the exception that the mounting heights of intermediate exit signage within the warehouse storage portions of the buildings. In this instance, it is proposed to permit intermediate exit signs to be mounted between 2.7m to 5.0m above the finished floor level within the warehouse portions only in lieu of 2.7m as required by the prescriptive provisions from Volume One of the BCA.	Clause E4D6 & E4D8 inter alia AS2293.1:2018	E4P2

5. Statement of Endorsement

The fire and life safety related design issues will be addressed through the performance-based path of compliance. Scientific Fire Services can confirm that the proposed design will achieve fire safety design compliance to the Performance Requirements of C1P9, D1P4, E1P1, E1P3, E1P4, E2P2, E4P2 of the BCA (ABCB, 2022).

The formulation of the Performance Based Design Brief (formerly Fire Engineering Brief) represents the next step in the approvals process. Scientific Fire Services shall commence the process of developing this document and will provide a formal comprehensive Performance Based Design Brief submission. As part of the process, a Fire Engineering Brief Questionnaire (FEBQ) document shall be prepared in accordance with the Fire and Rescue NSW pro forma and formally submitted as part of the referrals process.

Finally, and in order to ensure that the client can obtain a Construction Certificate for the proposed building works, Scientific Fire Services will prepare a Fire Safety Engineering Report (FSER) incorporating stakeholder conditions, comments and advice to the satisfaction of the Principle Certifying Authority (PCA).

On the basis of the review of the proposed design issues identified herein, Scientific Fire Services can confirm that the documentation in relation to the subject development will achieve fire safety design compliance to the relevant Performance Requirements of the National Construction Code Series – Volume 1 Building Code of Australia (BCA 2022).

I trust the above is satisfactory for your current purposes. Should you have any queries, please do not hesitate to contact me on (02) 9221 3658 or email to parkan.behayeddin@scifire.com.au



Parkan Behayeddin
Scientific Fire Services
BDC: 0756 - Certifier – Fire Safety

Appendix A. Architectural Drawings

Drawing No.	Title	Date / Revision
TP00	Cover Sheet	-
TP01	Site Locality Plan	04/10/2024 / A
TP02	Existing Survey	04/10/2024 / A
TP03	Site Analysis	04/10/2024 / A
TP04	Demolition Plan	04/10/2024 / A
TP05	Site Plan	21/10/2024 / B
TP06	Overall Master Elevations	04/10/2024 / A
TP07	Overall Master Sections	04/10/2024 / A
TP08	Shadow Diagrams	04/10/2024 / A
TP100	Existing Warehouse Ground Floor	21/10/2024 / B
TP101	Existing Warehouse Mezzanine	04/10/2024 / A
TP102	Existing Warehouse Elevations	04/10/2024 / A
TP103	Operations Office & Technical Centre (Existing Warehouse Sections)	04/10/2024 / A
TP104	New Yard	04/10/2024 / A
TP105	Bunded Plant Views	04/10/2024 / A
TP200	Proposed Warehouse Ground Floor	21/10/2024 / B
TP201	Proposed Warehouse Elevations	04/10/2024 / A
TP202	Proposed Warehouse Sections	04/10/2024 / A
TP300	Operations Office & Technical Centre (Ground Floor)	04/10/2024 / A
TP301	Operations Office & Technical Centre (First Floor & Second Floor)	04/10/2024 / A
TP302	Operations Office & Technical Centre (Elevations)	04/10/2024 / A
TP303	Operations Office & Technical Centre (Sections)	04/10/2024 / A
TP400	Roofs Plan	04/10/2024 / A
TP500	External Finishes	04/10/2024 / A

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Appendix C. Project Brief – Willowtree Planning

PROJECT BRIEF

Proposed Chemical Manufacturing Facility and Associated Warehouse or Distribution Centre
15 and 20 Gow Street, Padstow

SSD-71052213

WILLOWTREE PLANNING

The Site

The proposed development applies to land identified as 15 and 20 Gow Street, Padstow, being Lot 100 DP1011185 and Lot 53 DP1064349.

The Subject Site is currently occupied by Dulux Group and Selleys and constitutes an area of approximately 6ha. The Subject Site is within the IN1 General Industrial zone pursuant to the *Canterbury-Bankstown Local Environmental Plan 2023* (CBLEP2023). The Subject Site is located within the Canterbury-Bankstown Local Government Area (LGA). At present, 15 Gow Street is occupied by a number of industrial warehouse facilities and administration buildings operated by Dulux Group and Selleys with car parking provided opposite at 20 Gow Street, Padstow, which is owned by Dulux Group.

15 Gow Street is located on the southern side of Gow Street, with 20 Gow Street opposite to the north, between Fairford Road and Salt Pan Creek, Padstow. The Subject Site is located approximately 3.5km from Bankstown, 12km from Liverpool and 20km from Sydney CBD. Access to the road network is from the north of the Subject Site which is within close proximity to the South Western Motorway.

Surrounding land uses in the vicinity of the Subject Site include:

- North – a range of industrial developments zoned IN1 General Industrial and Bankstown STS Substation zoned SP2 Infrastructure;
- East – Salt Pan Creek zoned RE1 Public Recreation and W1 Natural Waterways;
- South – a range of industrial developments zoned IN2 Light Industrial; and
- West - a range of industrial developments zoned IN1 General Industrial.

PROJECT BRIEF

Proposed Chemical Manufacturing Facility and Associated Warehouse or Distribution Centre
15 and 20 Gow Street, Padstow

SSD-71052213



The location of the Subject Site and the existing development is depicted in **Figures 1 and 2** below.



Figure 1. Cadastral Map (Source: SIX Maps, 2024)



PROJECT BRIEF

Proposed Chemical Manufacturing Facility and Associated Warehouse or Distribution Centre
15 and 20 Gow Street, Padstow

SSD-71052213



Figure 2. Aerial Map (Source: Nearmap, 2024)

Background

The proposed development will allow for Selleys to meet the growing demand for sealants, adhesives and fillers across Australia and New Zealand and will allow for future export to Asia as a result of the current and project growth of development, particularly in the south and north-west growth corridors. The proposed development will also secure the viability of the existing operations at the Subject Site as it revitalises underutilised industrial land with ageing infrastructure (being post WW2 factory construction with assets and technology linking back to this period), creating a state-of-the-art manufacturing facility which will allow for continued growth into the foreseeable future.



PROJECT BRIEF

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SSD-71052213

**Proposed Development**

The proposed development seeks consent for the following works:

- Demolition of existing warehouse and maintenance building;
- Strip out and refurbishment of existing warehousing space to create a state-of-the-art manufacturing facility with ancillary raw materials storage which will continue to be operated by the Dulux Group and Selleys;
- Construction of external tank storage and tanker unloading area; and
- Remodeling of the existing vehicle access to allow uni-directional truck flow.

The proposed development includes those works as identified in **Table 1** below.

TABLE 1. DEVELOPMENT STATISTICS

Component	Proposed Outcome
Site Area	60,171m ²
Cost of Works	\$123,241,221

