



Preliminary Hazard Analysis

230 Martin Road Badgerys Creek NSW 2555

EMKC³

Level 11, 37 York Street
Sydney NSW 2000 Australia

Prepared by:

SLR Consulting Australia

Tenancy 202 Submarine School, Sub Base
Platypus, 120 High Street, North Sydney NSW
2060, Australia

SLR Project No.: 610.031445.00002

Revision: R02 v1.5

29 April 2026

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
R02 v1.5	29 April 2026	Craig Simpson	Peter Georgiou	Craig Simpson

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with EMKC3 (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



Executive Summary

SLR Consulting Australia Pty Ltd (SLR) has been engaged by EMKC³ Pty Ltd (the Proponent) to assess the potential impacts of the proposed construction and operation of two contemporary warehouse or distribution centre buildings at 230 Martin Road, Badgerys Creek, NSW 2555 (the “Project”).

The Secretary’s Environmental Assessment Requirements (SEARs) for the project require a Preliminary Hazard Analysis (PHA) completed in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 and Applying SEPP 33 (DoP, 2011).

This report addresses the Project in relation to SEARs Hazards & Risk in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 (the SEPP).

Preliminary Hazard Analysis below in **Table 1**.

Table 1 Industry Specific Secretary’s Environmental Assessment Requirements

Regulatory Authority	Requirement	Addressed
DCCEW	Hazards and Risk – including: A preliminary risk screening completed in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 and Applying SEPP 33 (DoP, 2011), that includes:	
	a clear indication of class, storage and handling quantities and location of all dangerous goods and hazardous materials associated with the development	Section 4.1
	Should the preliminary risk screening indicate that the project is “potentially hazardous”, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).	Section 4.0 Section 4.1 Section 4.2 Section 6.0

The Preliminary Risk Screening for storage and transport of dangerous goods indicated that the development would not be classified as a hazardous or offensive industry with regards to off site risks.

However as there will be two tenants onsite, (Lot 1 and Lot 2) then a further screening of dangerous good storage against Safework Placard Quantities found there maybe the potential for onsite hazards to impact the two tenancies. Accordingly, a further hazard analysis was undertaken in the form of a PHA assessing the following hazards in Lot 1.

- LPG storage
- Gas cylinders storage (other than LPG)
- Class 3 Dangerous Goods storage

The PHA found that the residual risks associated with the above Lot 1 hazards, once controls are implemented were rated as Negligible to ALARP (i.e. the risk is acceptably low).

The risk of onsite propagation of an accident causing a “domino” effect on adjoining premises in Lot 2 is considered unlikely This conclusion is based on the assumption that Lot



2 storage of dangerous goods will be limited to quantities less than the Safework Placard Quantities and Lot 1 will have the required engineering and design controls that will be in place.

If future tenants of Lot 2 want to increase dangerous goods storage to quantities greater than the Safework Placard Quantities then an undated PHA must be undertaken by the tenant or their representative. The resulting PHA will then need to be reviewed and approved by relevant planning authorities before the tenant moves into Lot 2.

The risk of biophysical damage outside the Site is considered unlikely based on the engineering and design controls that will be in place.

It is the conclusion of this Preliminary Hazard Analysis that the proposed development would be identified as a suitable development for the area, with suitable engineering controls, operational controls and management controls in place. These controls are standard industry practice and readily implemented as part of safety engineering.



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1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by EMKC³ Pty Ltd (the Proponent) to assess the potential impacts of the proposed construction and operation of two contemporary warehouse or distribution centre buildings at 230 Martin Road, Badgerys Creek, NSW 2555 (the “Project”).

The Secretary’s Environmental Assessment Requirements (SEARs) for the project require a preliminary risk screening completed in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 and Applying SEPP 33 (DoP, 2011), that includes:

A clear indication of class, storage and handling quantities and location of all dangerous goods and hazardous materials associated with the development

Should the preliminary risk screening indicate that the project is “potentially hazardous”, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).

This report addresses the Project in relation to SEARs Hazards & Risk in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 (the SEPP).

This involves a two-stage process:

Stage 1 – Preliminary Risk Screening (PRS)

Under the SEPP, the PRS stage assesses the storage and transport of specific dangerous goods classes that have the potential for significant, off-site effects. Specifically, this stage involves the identification of classes and quantities of all dangerous goods to be used, stored or produced on site with respect to storage depot locations as well as transported to and from the site.

Stage 2 – Preliminary Hazard Analysis (PHA)

If screening thresholds for the identified dangerous goods are exceeded, the SEPP requires a Preliminary Hazard Analysis (PHA) to be undertaken.

The PHA determines the level of risk to people, property, the environment and surrounds, taking into account the implementation of controls.

- If the risk levels exceed the criteria of acceptability and/or if the controls are assessed as inadequate, or unable to be readily controlled, then the development is classified as “hazardous industry”.
- Where it is unable to prevent offensive impacts on the surrounding land users, the development is classified as “offensive industry”.

Preliminary Hazard Analyses are prepared in accordance with the Department’s Hazardous Industry Planning Advisory Paper No. 6, ‘Hazard Analysis’ (HIPAP 6) and Multi-Level Risk Assessment (MLRA).

HIPAP 6 provides guidance on the general approach recommended for hazard analysis. The objective of hazard analysis is to develop a comprehensive understanding of the hazards and risks associated with an operation or facility and of the adequacy of safeguards. The hazard analysis process may include qualitative and quantitative methods. Consideration should include:

- the nature and quantities of hazardous materials stored and processed on the site;
- the type of plant and equipment in use;



- the adequacy of proposed technical, operational and organisational safeguards;
- the surrounding land uses or likely future land uses; and
- the interactions of these factors.

The MLRA provides guidance on the criteria for using the results of the screening, classification and prioritisation steps to determine which of three levels of further analysis is appropriate.

Level 1 is an essentially qualitative approach based on comprehensive hazard identification to demonstrate that the activity does not pose a significant off-site risk.

Level 2 supplements the qualitative analysis by sufficiently quantifying the main risk contributors to show that risk criteria will not be exceeded.

Level 3 is a full quantitative analysis.

The MLRA guidance states a Level 1 qualitative assessment may suffice provided all or most of the following conditions are met:

- screening and risk classification and prioritisation indicate there are no major off-site consequences and societal risk is negligible;
- the necessary technical and management safeguards are well understood and readily implemented; and
- there are no sensitive surrounding land uses.

The current Preliminary Hazard Analysis study for the Project met the MLRA criteria for a Level 1 assessment as the activity does not pose a significant off-site risk and the necessary technical and management safeguards are well understood and readily implemented.

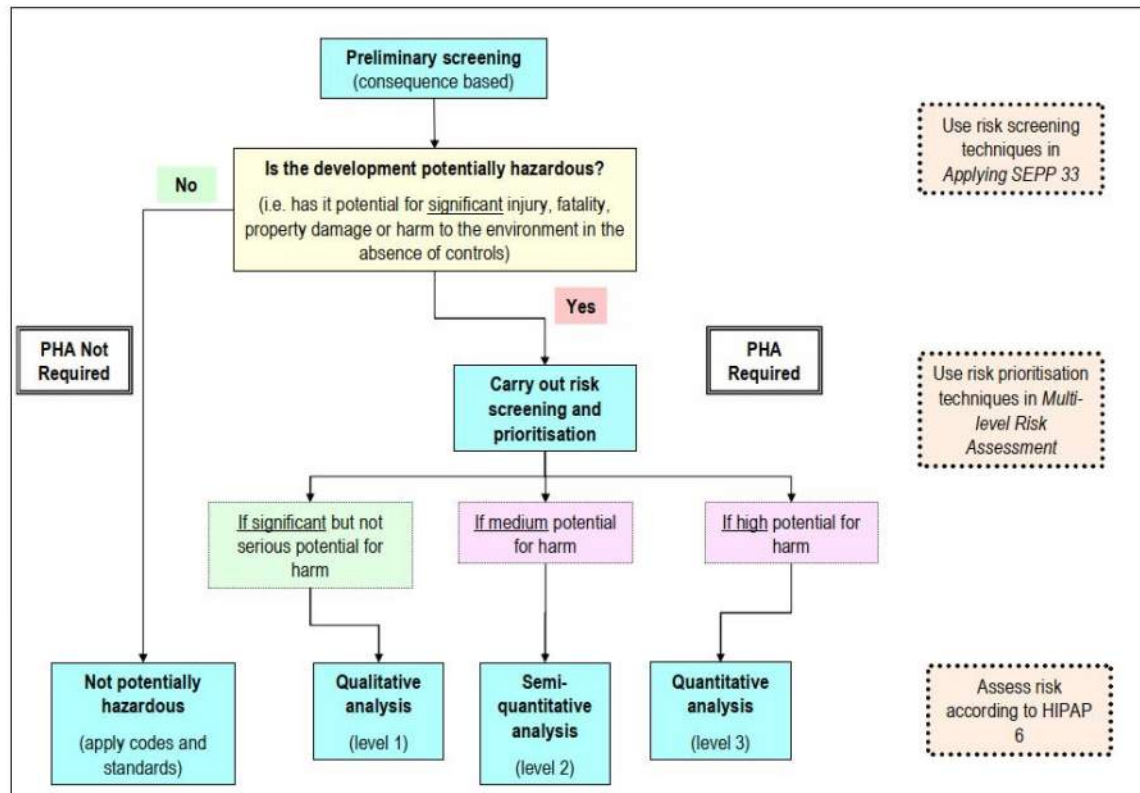
It further states the following three stages are used in the assessment process:

- preliminary screening
- risk classification and prioritisation
- risk analysis and assessment.

The overall MLRA approach can be seen in Figure 1 below.



Figure 1 The Multi-Level Risk Assessment Approach¹



The Preliminary Hazard Analysis should estimate the cumulative risks from the existing and proposed development. To determine the level of risk to people, property and the environment at the proposed location and in the presence of controls.

If the risk levels exceed the criteria of acceptability and/or if the controls are assessed as inadequate, or unable to be readily controlled, then the development is classified as 'hazardous industry'. Where it is unable to prevent offensive impacts on the surrounding land users, the development is classified as 'offensive industry'.

A development may also be considered potentially hazardous with respect to the transport of dangerous goods. A proposed development may be potentially hazardous if the number of generated traffic movements (for significant quantities of hazardous materials entering or leaving the site) is above the cumulative annual or peak weekly vehicle movements. Applying SEPP 33: Hazardous and Offensive Development Application Guidelines (NSW Department of Planning, 2011), outlines the screening thresholds for transportation.

¹ Source = Planning NSW 2011a Multi-Level Risk Assessment, New South Wales Government, figure 3



2.0 Methodology of this Study

This Preliminary Hazard Analysis (PHA) forms part of the supporting documentation for the Development Application (DA) for the Proposal, undertaken as a State Significant Development (SSD) Application in accordance with the NSW Department of Planning, Housing and Infrastructure (DPHI) Secretary's Environmental Assessment Requirements (SEARs).

The purpose of this report is to provide a assessment of the hazards associated with the storage of dangerous goods on the site in accordance with the SEPP. The purpose of the initial SEPP risk screening is to exclude from more detailed studies those developments which do not pose significant risk. This Preliminary Risk Screening is based on the guidance set out in government publication, Applying SEPP 33: Hazardous and Offensive Development Application Guidelines (NSW Department of Planning, 2011).

Where the SEPP identifies a development as potentially hazardous and/or offensive, developments are required to undertake a Preliminary Hazard Analysis (PHA) to determine the level of risk to people, property and the environment at the proposed location and in the presence of controls.

If the risk levels exceed the criteria of acceptability and/or if the controls are assessed as inadequate, or unable to be readily controlled, then the development is classified as 'hazardous industry'. Where it is unable to prevent offensive impacts on the surrounding land users, the development is classified as 'offensive industry'.

A development may also be considered potentially hazardous with respect to the transport of dangerous goods. A proposed development may be potentially hazardous if the number of generated traffic movements (for significant quantities of hazardous materials entering or leaving the site) is above the cumulative annual or peak weekly vehicle movements. The screening thresholds for transportation are set out in the government publication, Applying SEPP 33: Hazardous and Offensive Development Application Guidelines (NSW Department of Planning, 2011).

This current SLR report presents information pertaining to the presence of any hazardous materials, flammable substances, and compressed or liquefied gases proposed to be stored or handled in relation to the Development Site, including on site storage, or transported to or from the site.



3.0 PROPOSED DEVELOPMENT

3.1 Project Description

The development site details are described below in **Table 2**

Table 2 Site Identification & Description*

Descriptor	Site Details
Street Address	230 Martin Road, Badgerys Creek NSW 2555
Legal Description	Lot A in DP406215
Site Area	24.28 ha
Land Configuration	The site has an area of approximately 24.28ha. It is irregular in shape. The eastern boundary corresponds with the alignment of South Creek.
Existing Attributes	Agricultural land with an existing farm dam and associated structures. The Wianamatta South Creek vegetated riparian corridor runs along the eastern boundary
Existing Site Access	Access to the site is currently provided from Martin Road (north-south), connecting to Elizabeth Drive and the future Eastern Ring Road.
Local Context	The land immediately adjoining the site forms part of the Western Sydney Aerotropolis and is expected to undergo significant transformation. The surrounding locality is described below: • North: The adjacent site is operated by Australian Native Landscapes (ANL), a landscaping, agricultural and gardening supplier. It includes several 'warehouse' buildings. Aerial imagery shows large stockpiles on the site. Further north, the area is characterised by agricultural landholdings and some dwellings. • East: The Wianamatta South Creek waterway runs north to south along the sites eastern boundary and is Crown Land. An agricultural research station and cemetery is located beyond on its eastern bank. • South: The adjacent land currently comprises agricultural farm holdings, with South Creek beyond. • West: A large brick manufacturing facility operated by CSR (comprising several structures and existing dams) is located to the southwest of the site on the opposite side of Martin Road.



Descriptor	Site Details
Regional Context	The site is located within the Western Sydney Aerotropolis and is a short distance east of the new Western Sydney International Airport, which is currently under construction and is expected to be completed and operational in 2026. Approximately 11,000 hectares of land was rezoned for employment uses in 2020 under the Precincts SEPP to support the WSI. A new Metropolitan Centre (to be known as 'Bradfield') will be developed to the southwest of the site in the adjoining 'Aerotropolis Core Precinct'. The Western Sydney Aerotropolis Precinct Plan identifies several other smaller Neighbourhood Centres nearby the site, including centres to the north (around Pitt Street), west and south.

Note: * SIX Maps

The site is within the local government area of Liverpool City Council (Council).

Figure 2 Location of Proposed Development (Lot DP406215)



3.2 Brief Description

Development Description

The SSDA seeks consent for:

- Site clearance works, including the removal of existing structures
- Bulk earthworks and the installation and augmentation of utilities infrastructure and other services

- Construction and operational use of two warehouse or distribution centres containing ancillary manufacturing use in the proposed Lot 1 building with associated parking, landscaping across the site and access
- Other ancillary works including stormwater infrastructure (excluding works to be delivered by public authorities e.g., Park Edge Street and the Regional Stormwater Infrastructure basin) and delivery of the frontage upgrade of along Martin Road to facilitate access to the site.

3.3 Detailed Description

Construction of two warehouse or distribution centre buildings with ancillary office, amenities and manufacturing use in Lot 1 as described in Table 3 below:

Table 3 Project Details

Component	Details
Project Area	The site has a total area of 24.28 ha. Approximately 81,021 m ² will be affected by the project (excluding the potential park edge street which separates ENT land from ENZ).
Proposed Use	<u>Lot 1</u> Large format warehouse with ancillary office and manufacturing (including steel cutting) <u>Lot 2</u> Large format warehouse with ancillary office
Project Description	The project comprises: ▪ Bulk earthworks and site preparation works. ▪ Utility services and stormwater infrastructure (interim and ultimate scenarios) excluding the regional stormwater basin. ▪ Subdivision of the existing allotment into three (3) new allotments. ▪ Construction and operational use of two warehouse and distribution centres with ancillary office and manufacturing (Warehouse 1 only). Approval is sought for the fit-out of Warehouse 1. ▪ Landscaping ▪ Site Access
Subdivision	Proposed Lot 1: 4.19 ha Proposed Lot 2: 9.1ha Proposed Lot 3: 10.52 ha
Warehouse 1 (Lot 1)	Gross Floor Area (GFA):



Component	Details
	- Warehouse and distribution centre – 16,465m² - Ancillary office – 600m² - Amenities block - 37m² Total – 17,102m² Maximum Building Height = 12.95m 24 loading docks Access: - Truck entry driveway in the northwest corner of the site - Combined car park entry / exit located to the south of the truck entry - Truck exit driveway located in southwest corner of Lot 1
Warehouse 2 (Lot 2)	GFA: - Warehouse and distribution centre – 18,564m² - Ancillary office building 2A – 600m² - Ancillary office building 2B - 504m² Total – 19,668m² Maximum Building Height = 12.65m 18 loading docks Access: - Combined car park entry / exit driveway located opposite Office 2A - Truck entry / exit driveway located to the north of the car park entry / exit
Car Parking	<u>Lot 1</u> 86 spaces <u>Lot 2</u> 119 spaces
Landscaping	<u>Lot 1</u> 4,206m² <u>Lot 2</u> 3,412m²
Earthworks	Bulk cut and fill will be required to achieve flat pads for industrial development; access to the site from Martin Road; and flood immunity. The proposed surface grading will follow the existing site topography.



Component	Details
Infrastructure Upgrades	Interim: - The proposal includes provision for on-site stormwater detention that can appropriately service the site from a stormwater management perspective, until such a time as the regional stormwater basin is delivered by Sydney Water. - Noting the low traffic generation proposed, the proposal will have a negligible material impact to the performance of the external road network when compared to the existing site. Note: ongoing discussions with Council and investigations are currently being undertaken to determine whether the proposal will generate the requirement for pavement upgrades along a portion of Martin Road. - The proposal includes provision to upgrade the frontage of Martin Road to accommodate the future Collector Road in accordance with the Precinct Plan and Liverpool Aerotropolis 7.12 Contributions Plan (7.12 Plan) by means of a half-width upgrade for the length of the frontage only. - The proposal accommodates the possible future provision of a corridor for the future Park Edge Street – which is not a contributions road and will be delivered by the relevant roads authority (Council), subject to separate planning approval processes. Connections to the Park Edge Street will be provided by a future Riparian Street (contributions road) which is located in the property directly north providing a permeable and accessible solution to the future Park Edge Street. The subject proposal does not propose the dedication of land or carrying out of works for the future Park Edge Street. Ultimate: - The proposal will provide connection to the future regional stormwater basin once constructed by Sydney Water and the regional scheme is operational. - The proposal will utilise the future Collector Road and Eastern Ring Road for access to regional road network once delivered. Ongoing discussions are required with Council (and adjacent landowners) to understand the full extent of upgrades required to Martin Road.
Employment opportunities	Construction: 60 FTE jobs Operational: 108 FTE jobs
Estimated Development Cost	\$108,866,194 (excluding GST) The Estimated Development Cost (EDC) has been calculated in accordance with DPHI's required form and is provided within the EDC Report located at Appendix T which also satisfies DPHI's requirements.
Staging/Phasing	The proposal will be constructed over a single construction phase. Note: staged construction certificates would be issued; however, the proposal does not constitute staged development pursuant to the Act.

Lot 1 Warehouse will be used mainly as a metal logistics facility with some processing of steel coils. Colorbond Coil will be processed and packaged in bundles for delivery to clients. This will be discussed in more detail later in the report

The use of Lot 2 warehouse is yet to be determined. However for the purposes of the current study, it is assumed that for future tenants of Lot 2, dangerous goods storage on site will be limited to quantities less than SafeWork Placard Quantities. Accordingly, if future tenants of



Lot 2 wish to exceed Placard Quantities then they will be required to conduct a PHA to demonstrate the proposed activities for Lot 2 do not increase the overall hazards onsite and to offsite locations.

Details of the site plan have been set out below.

- **Figure 3** shows the proposed warehouses in a section of the site plan.
- **Figure 4** shows the full site plan.



Figure 3 Section of Site Plan Showing Building Design

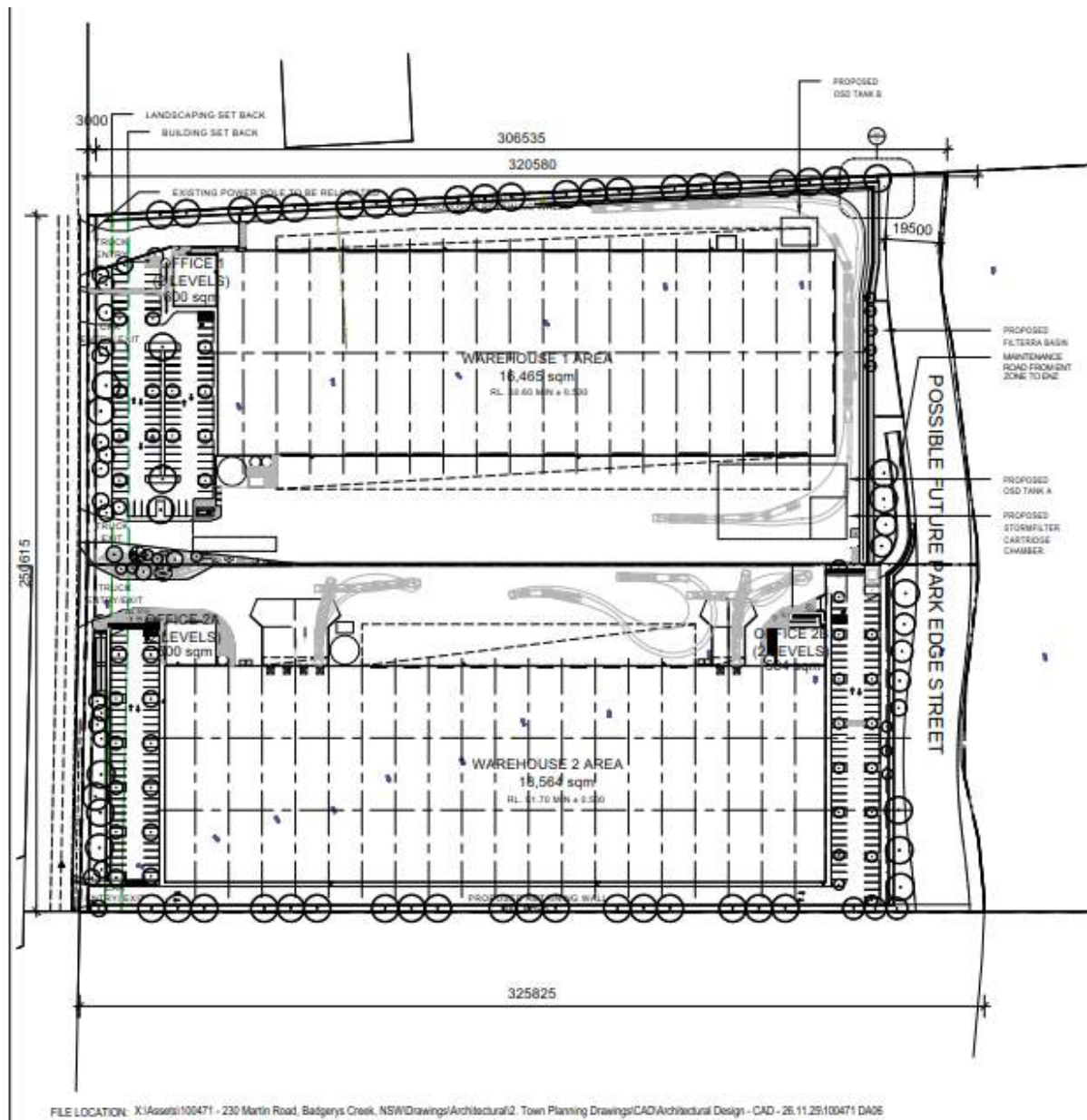
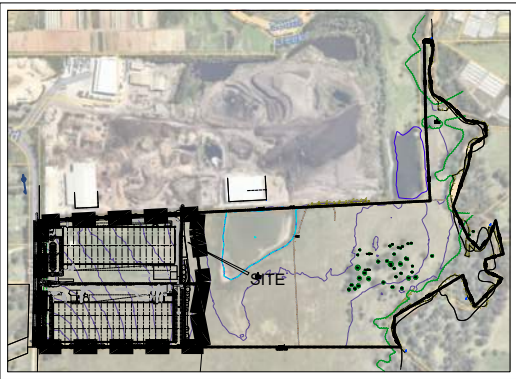
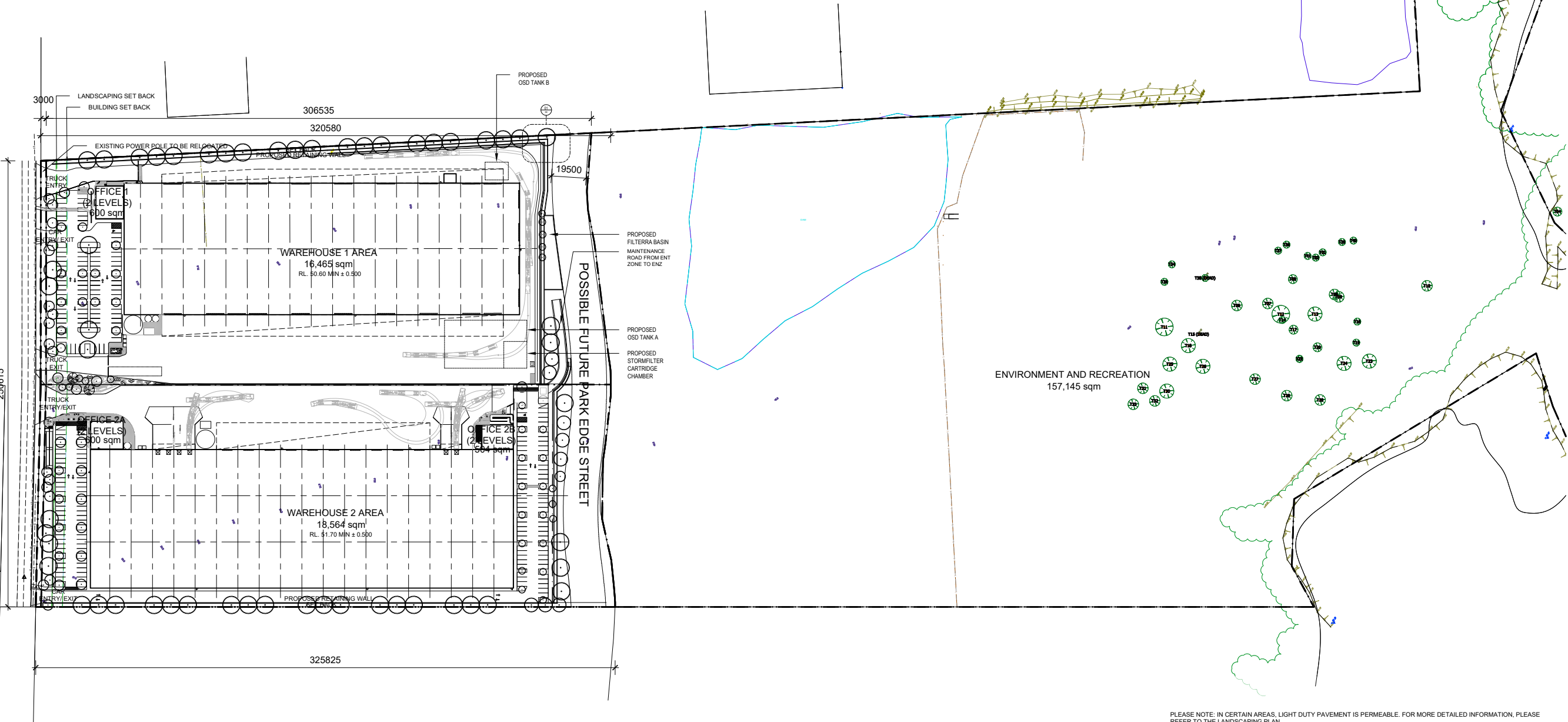


Figure 4 Layout of the Site (over page)





LOCATION PLAN



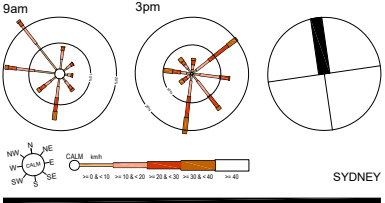
REVISIONS		
E	REVISION – PAD LEVEL CHANGE	15.02.24
F	REVISION – ADDITIONAL WESTERN CAR ENTRY/EXIT	15.02.24
G	REVISION – 2B CARPARKING LEVEL CHANGE + 2B OFFICE RAMP	24.04.24
H	REVISION – REMOVED ADDITIONAL WESTERN CAR ENTRY/EXIT	24.06.24
I	REVISION – UPDATED IN ACCORDANCE TO CIVIL AND LANDSCAPE	09.07.24
J	REVISION – ADDED DANGEROUS GOODS AND RACKING	02.05.25
K	REVISION – RELOCATION OF PARK EDGE STREET	16.09.25
L	REVISION – UPDATED IN ACCORDANCE TO CIVIL	26.11.25
M	REVISION – UPDATED IN ACCORDANCE TO TRAFFIC & FIRE CONSULTANTS	22.01.26

DEVELOPMENT SUMMARY

LOT 1	
SITE AREA SUBDIVISION	41,414 sqm
WAREHOUSE AREA	16,465 sqm
OFFICE (2 LEVELS)	600 sqm
AMENITIES BLOCK	37 sqm
TOTAL BUILDING AREA	17,102 sqm
EFFICIENCY	41.3 %
AWNING (5-8m)	1,439 sqm
AWNING (12m)	2,304 sqm
CARPARKING PROVIDED	86 spaces
HEAVY DUTY PAVEMENT (H)	13,838 sqm
LIGHT DUTY PAVEMENT (L)	2,631 sqm
LANDSCAPING AREA	4,206 sqm
PARK EDGE STREET AREA	2,759 sqm

DEVELOPMENT SUMMARY

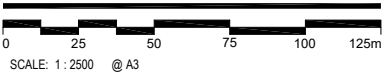
LOT 2	
SITE AREA SUBDIVISION	39,607 sqm
WAREHOUSE AREA	18,564 sqm
OFFICE (2 LEVELS)	1,104 sqm
TOTAL BUILDING AREA	19,668 sqm
EFFICIENCY	49.66 %
AWNING (3m)	108 sqm
AWNING (15m)	1,800 sqm
CARPARKING PROVIDED	119 spaces
HEAVY DUTY PAVEMENT (H)	7,993 sqm
LIGHT DUTY PAVEMENT (L)	5,024 sqm
LANDSCAPING AREA	3,412 sqm
PARK EDGE STREET AREA	2,445 sqm



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DEP0003111 | PDP0001062

PROJECT
METROLL & SPEC
230 MARTIN ROAD
BADGERYS CREEK, NSW

DRAWING TITLE
PROPOSED MASTERPLAN W BUILT FORM



CREATE DATE : 21.04.2026
LAST SAVED BY: HAN XU
PLOT DATE : 22.01.2026

100471 DA06 003 M

PLEASE NOTE: IN CERTAIN AREAS, LIGHT DUTY PAVEMENT IS PERMEABLE. FOR MORE DETAILED INFORMATION, PLEASE REFER TO THE LANDSCAPING PLAN

3.4 Lot 1 Operations & Processes

Lot 1 Warehouse will be used mainly as a metal logistics facility with some processing of steel coils. Colorbond Coil will be processed and packaged in bundles for delivery to clients.

The processing of steel coils into sheets involves unwinding large coils of steel, flattening the sheets, cutting to size and stacking for a customers order.

A diagram of the process is set out below in Figure 5, Figure 6, and Figure 7.

Figure 5 Steel coil processing

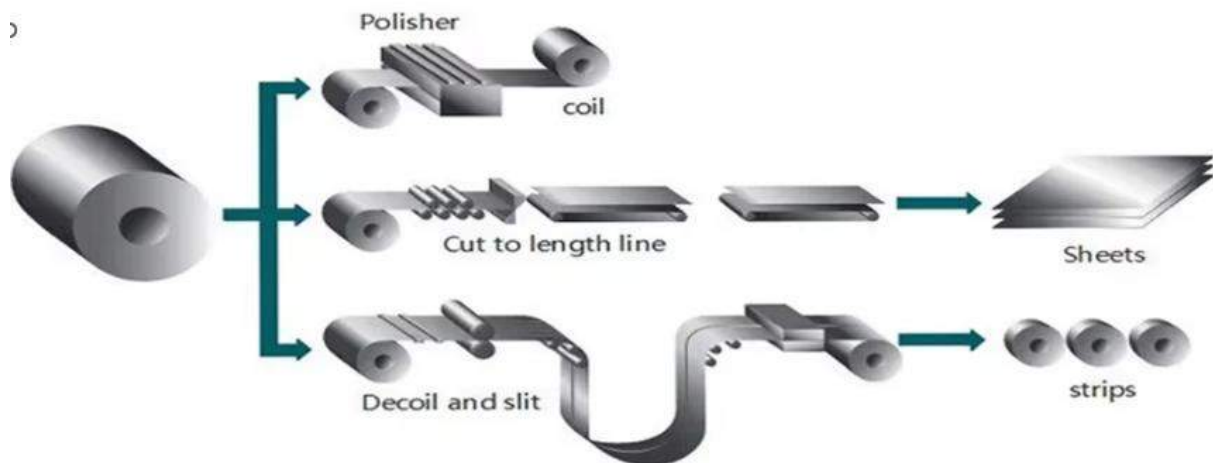


Figure 6 Example of steel coil



Figure 7 Example of steel coil processing



The onsite process consists of the following:

- The Colorbond steel coils are delivered to site and stored until required for processing.
- A crane is used to load Colorbond steel coils in the processing machine.
- The processing equipment produces the Colorbond sheets
- The finished product is prepared in bundles by the operator
- The operator uses a crane to move the bundles of finished product to the loading area
- The operator uses a crane to move the bundles of finished product onto trucks for delivery to sites.

3.5 Lot 2 Operations & Processes

As previously stated, the use of Lot 2 warehouse is yet to be determined. However for the purposes of the current study, it is assumed that for future tenants of Lot 2, dangerous goods storage on site will be limited to quantities less than SafeWork Placard Quantities.

It should be noted that Placard Quantities are set at a level, below which it is considered unlikely for dangerous goods quantities to increase hazards associated with a development / process.

Accordingly, if future tenants of Lot 2 wish to store dangerous goods at quantities that exceed Placard Quantities, then they will be required to conduct a PHA to demonstrate the proposed activities for Lot 2 do not increase the overall hazards onsite and to offsite locations.

3.6 Hours of Operation

The proposed development will operate during normal business hours, taken to be during the hours of 6am to 6pm, five days a week.



3.7 Land Zoning

The Development Site is zoned ENT – Enterprise and ENZ - Environment and Recreation under State Environmental Planning Policy (Precincts - Western Parkland City) 2021, as are the lots to the north, south and west of the site. The lots to the east are zoned RU4 - Primary Production Small Lots (see **Figure 8**).

Figure 8 Land Zoning Applicable to the Subject Site*



Source: *NSW Planning Portal Spatial Viewer

The proposed warehouse or distribution centre and ancillary manufacturing and office uses will be located entirely within the ENT zoned land and are permissible in this zone.



3.8 Surrounding Land Uses

Details of neighbouring properties and distance to residential properties have been set out in Table 2 and **Figure 2**.

Regarding any significant proposed changes to the use of neighbouring properties, SLR understands that Boral has a development application for 235 Martin Road Badgerys Creek. This includes the Concept and Stage 1 application for Boral's Badgerys Creek Industrial Area comprised of the following:

- Stage 1 - concrete batching plant and research & development lab
- Stage 2 - resource management facility for the processing of construction & demolition waste.



4.0 Preliminary Risk Screening

Preliminary risk screening of the proposed development is required under the Resilience & Hazard SEPP to determine the need for a Preliminary Hazard Analysis (PHA). The preliminary screening assesses the storage of specific Dangerous Goods classes that have the potential for significant, off-site effects. Specifically, the assessment involves the identification of classes and quantities of all dangerous goods to be used, stored or produced on site with respect to storage depot locations as well as transported to and from the site.

4.1 Dangerous Goods Storage

Only relatively small amounts of Dangerous Goods, below the Resilience & Hazard SEPP Threshold Quantities, are to be used or stored on site. Therefore, the facility is not considered potentially hazardous to offsite locations with regards to Dangerous Goods.

However the Resilience & Hazard SEPP threshold quantities relate to a process being potentially hazardous to offsite locations. In the current study there are two warehouses in the proposed development. In this scenario, to conduct a preliminary risk screening for the potential hazard impacts onsite requires screening against Safework Placard Quantities. If the quantities of dangerous goods onsite are less than Placard Quantities, then there is unlikely to be an onsite hazard which could impact Lot 1 and Lot 2. If the Placard Quantities are exceeded then the operations may be potentially hazardous to the other onsite tenant. In this scenario a PHA is required to fully investigate the potential hazards and the suitability of the processes in each tenancy to be conducted onsite without creating any undue hazards to each other.

The proposed inventory of dangerous goods and classification is provided in **Table 4** below.



Table 4 Dangerous Goods in Storage – Lot 1 Warehouse*

Substance	Hazardous Class	Packing Group	Total Storage on Site	Resilience & Hazard SEPP Threshold Quantity	Placard Quantity	Findings
Liquified Petroleum Gas (LPG)	2.1	n/a	1,304 L Comprised of gas cylinders 2 x 190kg (450 L water capacity), 11 x 15 kg (36.7 L water capacity)	10,000 kg or 16m ³	200 L	Below SEPP threshold
Acetylene	2.1	n/a	125L Comprised of 5 x E2 gas bottles (25 L water capacity)	100kg and greater compare against separation distances	200 L	Below SEPP threshold
Total Storage	2.1		1,429 L		200 L	Above Placard Quantity
Oxygen	2.2 Subsidiary risk group 5.1	n/a	125L Comprised of 5 x E2 gas bottles (25 L water capacity)	5 tonnes (Subsidiary risk group 5.1)	1,000 L	Below SEPP threshold
Argoshield	2.2	n/a	204L Comprised of 6 x F3VIR gas cylinders (34 L water capacity)	n/a	1,000 L	n/a
Total Storage	2.2		329 L		1,000 L	Below Placard Quantity
Recosol	3	ii	1,100L Comprised of 4 x 200L and 2 x 150L	5 tonnes	250 L	Below SEPP threshold
Brake Cleaner	3	ii	40L Comprised of 2 x 20L	5 tonnes	250 L	Below SEPP threshold
Total Storage			1,140 L			Below SEPP threshold Above Placard Quantity
Degreaser	8	ii	20L	25 tonnes	250 L	Below SEPP threshold Below Placard Quantity
Renoform MW	9	iii	3 x 200L	n/a	n/a	n/a

Note: * Information supplied by EMKC³

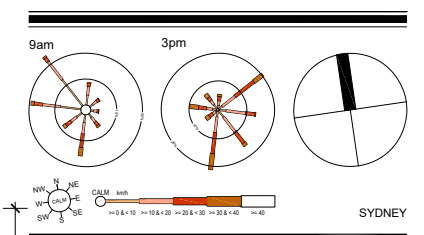
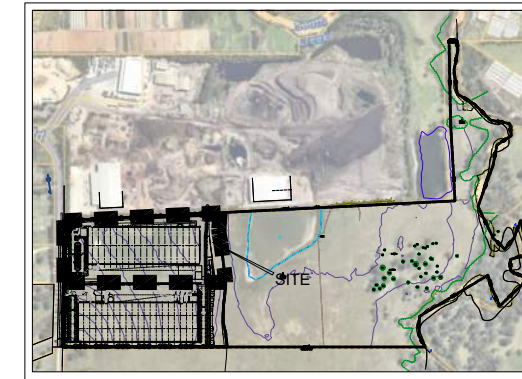
Source = Hazardous and Offensive Development Application Guidelines, Applying SEPP 33 (Department of Planning NSW, 2011)



It is anticipated that for bulk storage there will be two storage locations for dangerous goods. LPG cylinder storage will be outside the building, in an exterior storage compliant with AS/NZS 1596 The storage and handling of LP Gas. The second storage will be for Class 3 flammable liquids with that storage complying with AS 1940 The storage and handling of flammable and combustible liquids. The proposed locations of these storages in Warehouse One has been set out in Figure 9.

Figure 9 Lot 1 Warehouse (overpage)





EMKC³
development | cubed

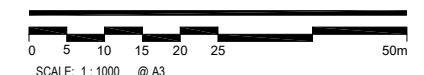
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DEP0003111 | PDP0001062

PROJECT

METROLL & SPEC

230 MARTIN ROAD
BADGERYS CREEK, NSW

DRAWING TITLE
PROPOSED SITE PLAN



CREATE DATE : 21.04.2026
LAST SAVED BY: HAN XU

100471 DA06 004 |

PLEASE NOTE: IN CERTAIN AREAS, LIGHT DUTY PAVEMENT IS PERMEABLE. FOR MORE DETAILED INFORMATION, PLEASE REFER TO THE LANDSCAPING PLAN

FILE LOCATION: X:\Assets\100471 - 230 Martin Road, Badgerys Creek, NSW\Drawings\Architectural\2. Town Planning Drawings\CAD\Architectural Design - CAD - 26.11.25\100471 DA06

It is anticipated that most classes of dangerous goods will be used and stored in dedicated sections of the warehouse area, compliant with the relevant Australian Standards, including (but not limited to) AS 4332-2004 The storage and handling of gases in cylinders, AS/NZS 1596 The storage and handling of LP Gas, AS 1940 The storage and handling of flammable and combustible liquids, AS / NZS 4681 The Storage and Handling of Class 9 (Miscellaneous) Dangerous Goods and Articles , etc . LPG cylinder storage will be outside the building, in an exterior storage compliant with AS/NZS 1596 The storage and handling of LP Gas.

4.2 Dangerous Goods Transport

In applying SEPP 33 a proposed development may be deemed potentially hazardous if the numbers of generated traffic movements for significant quantities of dangerous goods entering and leaving the site, are above the cumulative vehicle movements shown in the SEPP 33 guideline (Table 2).

The transport of Dangerous Goods will to site will be minimal based on the small volumes required on site. Therefore, the facility is not considered potentially hazardous with regards to transport of Dangerous Goods.

5.0 Preliminary Risk Screening Conclusions

This report has reviewed and applied the requirements of Hazards & Risk in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 (the SEPP) in order to determine whether the policy applies to the Project.

The Preliminary Risk Screening for storage and transport of dangerous goods indicate that the development would not be classified as a hazardous or offensive industry with regards to off site risks.

However as there will be two tenants onsite, (Lot 1 and Lot 2) then a further screening of dangerous good storage against Safework Placard Quantities found there maybe the potential for onsite hazards to impact the two tenancies. Accordingly, a further hazard analysis was undertaken in the form of a PHA assessing the following hazards.

- LPG storage
- Gas cylinders storage (other than LPG)
- Class 3 Dangerous Goods storage



6.0 Preliminary Hazard Analysis

A Preliminary Hazard Analysis must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis (DoP, 2011). The Preliminary Hazard Analysis should estimate the cumulative risks from the existing and proposed development.

Where SEPP 33 identifies a development as potentially hazardous and/or offensive, developments are required to undertake a Preliminary Hazard Analysis to determine the level of risk to people, property and the environment at the proposed location and in the presence of controls.

The purpose of the Preliminary Hazard Analysis is to assess whether the proposed development impacts on the current surrounding land uses and/or if the development is offensive or hazardous, thereby posing an unacceptable risk to the surrounding community or if the proposed development may be potentially subject to hazards or risks from existing development in the surrounding area.

6.1 Hazard Identification

The hazard analysis and quantified risk assessment approach developed and recommended in HIPAP relies on a systematic and analytical approach to the identification and analysis of hazards and the quantification of off-site risks to assess risk tolerability and land use safety implications. HIPAP advocates a merit-based approach, the level and extent of analysis must be appropriate to the hazards present and therefore, need only progress to the extent necessary for the particular case.

6.1.1 Methodology

The procedures adopted by this study for assessing hazardous impacts involve the following steps:

Step 1: Hazard identification;

Step 2: Hazard analysis (consequence and probability estimations); and

Step 3: Risk evaluation and assessment against specific criteria.

The following sections of the report discuss the hazard identification and analysis process as prescribed in HIPAP.

6.1.2 Hazard Identification

This is the first step in the risk assessment. It involves the identification of all theoretically possible hazardous events as the basis for further quantification and analysis. This does not in any way imply that the hazard identified or the theoretically possible impact will occur in practice. Essentially, it identifies the particular characteristics and nature of hazards to be further evaluated in order to quantify potential risks.

To identify hazards, a survey of operations was carried out to isolate the events which are outside normal operating conditions and which have the potential to impact outside the boundaries of the site, in this case Lot 1 and also impact on Lot 2. These events do not include occurrences that are a normal part of the operation cycles of the site but rather the atypical and abnormal.



6.1.3 Hazard analysis

After a review of the events identified in the hazard identification stage and the prevention/protection measures incorporated into the design of the site, any events which are considered to have the potential to result in impacts off-site or which have the potential to escalate to larger incidents are carried to the next stage of analysis.

6.1.4 Consequence Estimation

This aspect involves the analysis and modelling of the credible events carried forward from the hazard identification process in order to quantify their impacts outside the boundaries of the site. These events typically include explosion, fire fume, dispersion/propagation and stormwater contamination and their potential effects on people and/or damage to property.

6.1.5 Probability Likelihood Estimation

Where necessary, the likelihood of incidents quantified as a result of Section 6.1.4 are determined by adopting probability and likelihood factors derived from published data.

6.1.6 Risk Evaluation and Assessment

The risk analysis includes the consequences of each hazardous event and the frequencies of each initiating failure. The results of consequence calculations (radiation and overpressure contours, and toxic exposure levels) together with the probabilities and likelihood's estimated are then compared against the accepted criteria, as specified by the HIPAP series applicable for the site. Whether it is considered necessary to conduct the predictions would depend on the probabilities and likelihood estimated and if the risk criteria are exceeded.

6.1.7 Risk Criteria

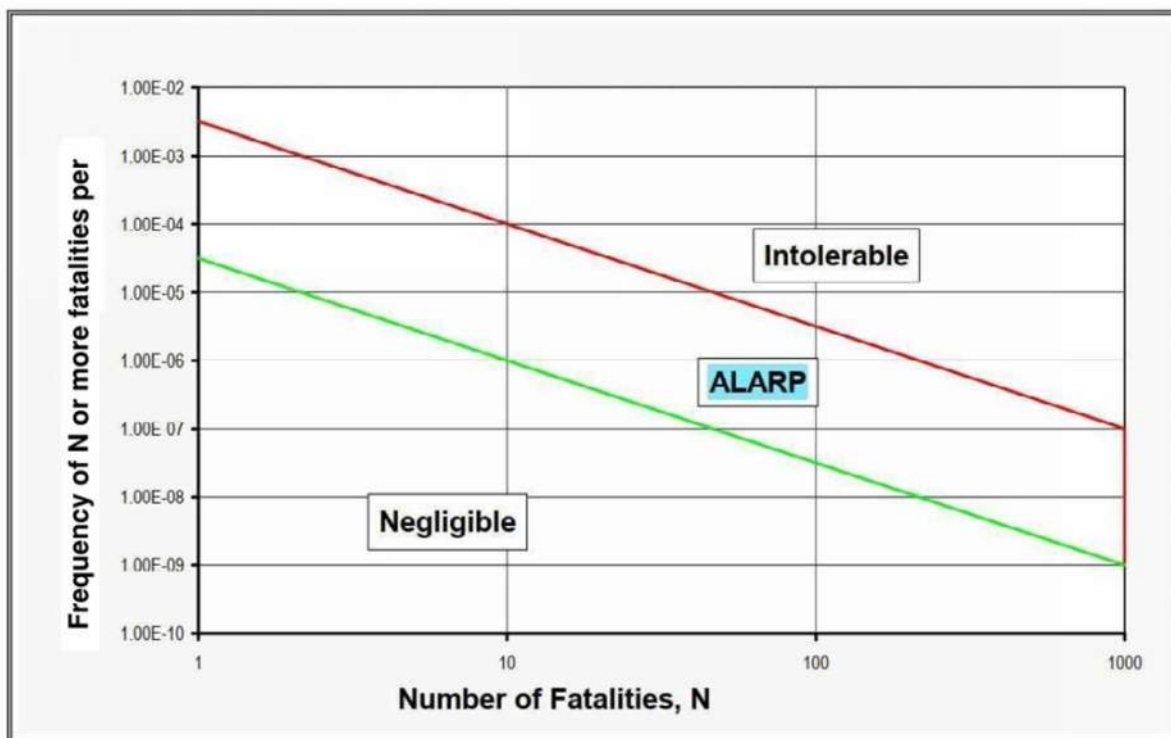
As part of the MLRA, hazards are identified and the risk from the hazards estimated. Risk criteria take into consideration surrounding land uses, and the category of risk. They encompass such elements as injury/ irritation, individual and societal risk of fatality, property damage and harm to the biophysical environment. Criteria may be expressed in qualitative or quantitative terms. (Planning NSW, 2011a) A key concept in the risk criteria is that societal risks should be "as low as reasonably practical", known as the ALARP principle.

ALARP is a principle that may be applied in relation to the degree of risk reduction that may be sought from a particular activity. It has been described by the UK Health and Safety Executive (HSE) in the following terms: 'In weighing the costs of extra safety measures the principle of reasonable practicability (ALARP) applies in such a way that the higher or more unacceptable a risk is, the more, proportionately, an employer is expected to spend to reduce it'.

The indicative societal risk criteria reflect these regions as three societal risk bands: negligible, ALARP and intolerable, as shown in the example below in Figure 10.



Figure 10 Indicative Societal Risk Criteria²



Below the negligible line, provided other individual criteria are met, societal risk is not considered significant. Above the intolerable level, an activity is considered undesirable, even if individual risk criteria are met. Within the ALARP region, the emphasis is on reducing risks as far as possible towards the negligible line. Provided other quantitative and qualitative criteria are met, the risks from the activity would be considered tolerable in the ALARP region.

The risk assessment in the current study was based on hazard identification, consequence assessment and likelihood assessment, to create an overall risk assessment. Descriptors for the qualitative risk assessment at the various levels of consequence of a particular event, and the likelihood (or probability) of such an event occurring are presented in Table 5 and Table 6.

Table 5 Qualitative Likelihood Rating

Level	Descriptor	Description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Could occur
D	Unlikely	Could occur but not expected
E	Rare	Conceivable, but only in exceptional circumstances

² Source Planning NSW, HIPAP 4, New South Wales Government, figure 3



Table 6 Qualitative Consequence Rating

Level	Descriptor	People	Environment	Asset / Production
5	Catastrophic	Multiple fatality	Extreme environmental harm, eg. widespread catastrophic impact	More than \$5M (\$5 million) loss or production delay
4	Major	Permanent total disabilities, single fatality	Major environmental harm, eg. Widespread substantial impact	\$1M to \$5M loss or production delay
3	Moderate	Major injury or health effects, eg. major lost workday case/permanent disability	Serious environmental harm, eg. widespread and significant impact	\$500k (\$500k thousand) to \$1M loss or production delay
2	Minor	Minor injury or health effects, eg. restricted work or minor lost workday case	Material environmental harm, eg. localised and significant impact	\$50k to \$500k loss or production delay
1	Insignificant	Slight injury or health effects, eg. first aid/minor medical treatment level	Minimal environmental harm, eg. interference or likely interference to an environmental value	Less than \$50k loss or production delay

The risk ratings are defined as the following:

- Negligible – The risk is acceptably low
- ALARP – As Low As Reasonably Practical, the risk has been reduced to as low a level as possible and all feasible controls and mitigation strategies are implemented.
- Intolerable - The risk cannot be reduced to an acceptable level with residual impacts likely to have significant impact on the local environment or stakeholders. Intolerable risk would preclude the development of the Project.

The risk rating matrix has been set out below in Table 7.

Table 7 Risk Rating Matrix

			Risk Rating		
Likelihood			Consequence		
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	ALARP	ALARP	Intolerable	Intolerable	Intolerable
Likely	Negligible	ALARP	ALARP	Intolerable	Intolerable
Possible	Negligible	Negligible	ALARP	ALARP	Intolerable
Unlikely	Negligible	Negligible	Negligible	ALARP	ALARP
Rare	Negligible	Negligible	Negligible	Negligible	ALARP

In assessing the tolerability of risk from potentially hazardous development, the relevant general principles set out in HIPAP 6 are:

- the avoidance of all avoidable risks;



- the risk from a major hazard should be reduced wherever practicable, even where the likelihood of exposure is low;
- the effects of significant events should, wherever possible be contained within the site boundary; and
- where the risk from an existing installation is already high, further development should not pose any incremental risk.

6.1.8 Risk of Property Damage and Accident Propagation

The siting of an installation must account for the potential for propagation of an accident causing a “domino” effect on adjoining premises. This risk would be expected within an industrial estate where siting of hazardous materials on one site may potentially cause hazardous materials on an adjoining premises to further develop the size of the accident.

In the current study this includes the propagation of an accident in Lot 1 warehouse causing a domino effect in the adjoining warehouse Lot 2 warehouse in the development.

6.1.9 Criteria for Risk Assessment to the Biophysical Environment

The siting of potentially hazardous developments also needs to consider the risk from accidental releases into the biophysical environment.

The suggested criteria for sensitive environmental areas relate to the potential effects of an accidental release or emission on the long-term viability of the ecosystem or any species within it and are expressed as follows:

- Industrial developments should not be sited in proximity to sensitive natural environmental areas where the effects or consequences of the more likely accidental emissions may threaten the long-term viability of the ecosystem or any species within it; and
- Industrial developments should not be sited in proximity to sensitive natural environmental areas where the likelihood or probability of impacts that may threaten the long-term viability of the ecosystem or any species within it is not substantially
- lower than the existing background level threat to the ecosystem.

In the current study, the risk of biophysical damage outside the Site is considered unlikely based on the engineering and design controls that will be in place.

6.2 Potential Hazardous Incidents Identified in Lot 1 for Further Discussion

Following a review of surrounding land use a series of potentially hazardous events or scenarios were considered to identify if further comprehensive qualitative analysis is required. Each event or scenario shall be discussed in detail.

The following dangerous goods storage from Lot 1, listed below were identified in the SEPP 33 Preliminary Risk Screening as requiring more comprehensive analysis:

- LPG storage
- Gas cylinders storage (other than LPG)
- Class 3 Dangerous Goods storage



6.2.1 Incident Scenarios and Control Measures

The control measures, provided below, are designed to maintain and contain the risks within the boundaries of the site and reduce the risk to areas outside the boundaries. The technical and management safeguards required are self-evident and readily implemented as part of plant safety engineering. Following these safeguards, including codes and standards will ensure the risk level is ALARP and that the Project design meets the principles of:

- the avoidance of all avoidable risks;
- the risk from a major hazard should be reduced wherever practicable, even where the likelihood of exposure is low;
- the effects of significant events should, wherever possible be contained within the site boundary; and
- where the risk from an existing installation is already high, further development should not pose any incremental risk.

6.2.2 LPG Storage – Lot 1

The LPG storage must follow the guidance set out in AS/NZS 1596 The storage and handling of LP Gas and specifically section 4.0. The large cylinders will be used for in situ filling of the smaller cylinders used for fork lifts. Accordingly the storage and operations will need to follow the additional requirements in section 4.4.12 of AS/NZA 1596.

The storage design requirements are an exterior storage with location in part based on separation distances from other areas near the storage. Such as the safety minimum separation distances set out in Tables 4.1 and 4.2, and 4.3. The final design will need to show these separation details.

The Hazard Identification Word Diagram listing hazards considered can be found in Table 8.

It should be noted that the technical and management safeguards required are standard industry practice and readily implemented as part of safety engineering.

6.2.3 Gas Cylinders Storage & Use (other than LPG) - Lot 1

The storage and handling of gases in cylinders. Australian Standard AS 4332-2004 sets out the requirements and recommendations for safely storing and handling compressed gases in cylinders. The storage requirements are set out in section 4 of AS 4332.

All the gases are Dangerous goods class 2.1 or 2.2. However the oxygen cylinders and cylinders do have a subsidiary hazard class of 5.1.

Based on the total storage of 454 L (water capacity) the separation distances requirements from the store will range from no separation distance requirements to “protected places” to 3m separation distance from other dangerous goods stores and filling / decanting points for dangerous goods. As set out in AS 4332, Table 4.1 and Figure 4.2.

6.2.4 Class 3 Dangerous Goods Storage & Use - Lot 1

Australian Standard AS 1940-2017 sets out the requirements and recommendations for safely storing and handling of flammable and combustible liquids, that is Class 3 Dangerous Goods. The storage requirements are set out in section 4 of AS 4332.

The location of the store can be inside or outside. But it will need to have fire rated walls and mechanical ventilation to the exterior of the building. The store will also need to be 3m from a “protected place” and 3m from ignition sources (such as the processing plant).

In the proposed design, the store will be located outside as set out in Figure 9



6.2.5 Hazard Identification Word Diagram

Major incidents possible at the site along with potential outcomes, consequences and control measures and residual risk after the implementation of control measures have been outlined in the Hazard Identification Word Diagram can be found in Table 8.



Table 8 Summary of Lot 1 Potential Major Incident Scenarios & Residual Risk after Implementation of Controls

Hazard / Incident	Scenario	Likely Consequences	Controls	Likelihood	Consequence	Residual Risk
LPG Storage						
LPG Release - Using large cylinders to refill smaller gas cylinders	Maintenance error or accident	Minor leak/plant shutdown and isolation Minor irritation/injury to staff in close proximity. No off site impacts expected	All refilling of smaller gas cylinders from large cylinders carried out by competent personnel	Unlikely	Minor	Negligible
LPG Release – car / mechanical impact on storage	Impact causes cylinder rupture or leak	Minor leak/plant shutdown and isolation Minor irritation/injury to staff in close proximity. No off site impacts expected	Protection of LPG storage to conform with AS 1596. Storage separated from normal operations or protected where possible. For example with bollards and exclusion zones.	Unlikely	Minor	Negligible
LPG Release – during bulk delivery	Problems with bulk delivery of LPG. Range from minor leak and isolation to major leak.	Some potential for minor, short term off site impacts downwind from a release. Some medical treatment may be required in a worst case scenario Localised evacuation of site may be required	LPG storage to conform with AS 1596. Industry standard delivery procedures followed. Regular condition inspections of cylinder fill point. Use of established industry procedures minimize likelihood of LPG leak during delivery. Emergency response plan in place	Unlikely	Minor to Moderate	Negligible to ALARP



Hazard / Incident	Scenario	Likely Consequences	Controls	Likelihood	Consequence	Residual Risk
LPG – Fire Impact (external)	Fire starts off site, moves on site and impinges on LPG storage.	Potential for fire to spread, LPG may be released and act as accelerant. Potential for downwind irritation from smoke plume. Localised radiant heat effects	Facility has appropriate fire control systems in place. Emergency response plan in place Emergency evacuation plans in place.	Rare	Major	Negligible
Site Fire	Fire starts in another section of the site and impinges on LPG storage	Potential for fire to spread, LPG may be released and act as accelerant. Potential for downwind irritation from smoke plume. Localised radiant heat effects	Facility has appropriate fire control systems in place. Emergency response plan in place Emergency evacuation plans in place.	Rare	Major	Negligible
Gas cylinders storage & use (other than LPG)						
Release of gas during normal usage of cylinders	Maintenance error or accident	Minor leak/plant shutdown and isolation Minor irritation/injury to staff in close proximity. No off site impacts expected	All use of gas cylinders for welding, etc carried out by competent personnel	Unlikely	Minor	Negligible



Hazard / Incident	Scenario	Likely Consequences	Controls	Likelihood	Consequence	Residual Risk
Incident during pickup and delivery of gas cylinders	Problems with delivery of gas cylinders, damaging cylinders. Range from minor leak to major leak.	Some potential for minor, short term on site impacts downwind from a release. Torpedoing of gas cylinder possible. Some medical treatment may be required in a worst case scenario. Localised evacuation of site may be required	Industry standard delivery procedures followed. Use of established industry procedures minimize likelihood of gas cylinder damage during delivery. Emergency response plan in place	Unlikely	Minor to Moderate	Negligible to ALARP
LPG – Fire Impact (external)	Fire starts off site, moves on site and impinges on LPG storage.	Potential for fire to spread, gases may be released and act as accelerant. Potential for downwind irritation from smoke plume. Localised radiant heat effects	Facility has appropriate fire control systems in place. Emergency response plan in place Emergency evacuation plans in place.	Rare	Major	Negligible
Site Fire	Fire starts in another section of the site and impinges on gas cylinder storage	Potential for fire to spread, gases may be released and act as accelerant. Potential for downwind irritation from smoke plume. Localised radiant heat effects	Facility has appropriate fire control systems in place. Emergency response plan in place Emergency evacuation plans in place.	Rare	Major	Negligible



Hazard / Incident	Scenario	Likely Consequences	Controls	Likelihood	Consequence	Residual Risk
Class 3 Dangerous Goods Storage & Use (flammable and combustible liquids)						
Release flammable and combustible liquids during storage or use	Maintenance error or accident	Minor leak/plant shutdown and isolation Minor irritation/injury to staff in close proximity. No off site impacts expected	Bunding in place where appropriate to capture spills, as set out in AS 1940. The design and location of bunding will be dependent on storage / work areas and follow guidance in AS 1940. Handling of flammable and combustible liquids carried out by competent personnel Facility has appropriate spill kits and control systems in place. Emergency response plan in place Emergency evacuation plans in place.	Unlikely	Minor to Moderate	Negligible to ALARP
Release of flammable and combustible liquids – during delivery	Problems with delivery of flammable and combustible liquids, range from minor leak and isolation to major leak.	Some potential for minor, short term off site impacts downwind from a release. Some medical treatment may be required in a worst case scenario Localised evacuation of site may be required	Flammable and combustible liquids storage to conform with AS 1940. Industry standard delivery procedures followed.	Unlikely	Minor to Moderate	Negligible to ALARP



Hazard / Incident	Scenario	Likely Consequences	Controls	Likelihood	Consequence	Residual Risk
			Use of established industry procedures minimize likelihood of flammable and combustible liquids leak during delivery. Emergency response plan in place			
Fire Impact (external)	Fire starts off site, moves on site and impinges on Class3 Dangerous Goods storage.	Potential for fire to spread, flammable and combustible liquids may be released and act as accelerant. Potential for downwind irritation from smoke plume. Localised radiant heat effects	Facility has appropriate fire control systems in pace. Emergency response plan in place Emergency evacuation plans in place.	Rare	Major	Negligible
Site Fire	Fire starts in another section of the site and impinges on Class3 Dangerous Goods storage	Potential for fire to spread, flammable and combustible liquids may be released and act as accelerant. Potential for downwind irritation from smoke plume. Localised radiant heat effects	Facility has appropriate fire control systems in pace. Emergency response plan in place Emergency evacuation plans in place.	Rare	Major	Negligible



7.0 Conclusion

The Preliminary Hazard Analysis has found that the main dangerous goods potential hazard in Lot 1 associated with the development was the following:

- LPG storage
- Gas cylinders storage and use (other than LPG)
- Class 3 Dangerous Goods storage and use

The residual risks associated with these hazards once controls are implemented were rated as Negligible to ALARP (i.e. the risk is acceptably low).

The risk of onsite propagation of an accident causing a “domino” effect on adjoining premises in Lot 2 is considered unlikely. This conclusion is based on the assumption that Lot 2 storage of dangerous goods will be limited to quantities less than the Safework Placard Quantities and Lot 1 will have the required engineering and design controls that will be in place.

If future tenants of Lot 2 want to increase dangerous goods storage to quantities greater than the Safework Placard Quantities then an undated PHA must be undertaken by the tenant or their representative. The resulting PHA will then need to be reviewed and approved by relevant planning authorities before the tenant moves into Lot 2.

The risk of biophysical damage outside the Site is considered unlikely based on the engineering and design controls that will be in place.

It is the conclusion of this Preliminary Hazard Analysis that the proposed development would be identified as a suitable development for the area, with suitable engineering controls, operational controls and management controls in place. These controls are standard industry practice and readily implemented as part of safety engineering.

Sincerely,

SLR Consulting Australia



Dr Craig Simpson, *BAppSc MSc PhD MAIOH*
Certified Occupational Hygienist (COH)®

Principal – Occupational Hygiene & Hazardous Materials



8.0 References

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State Environmental Planning Policy (Resilience and Hazards) 2021

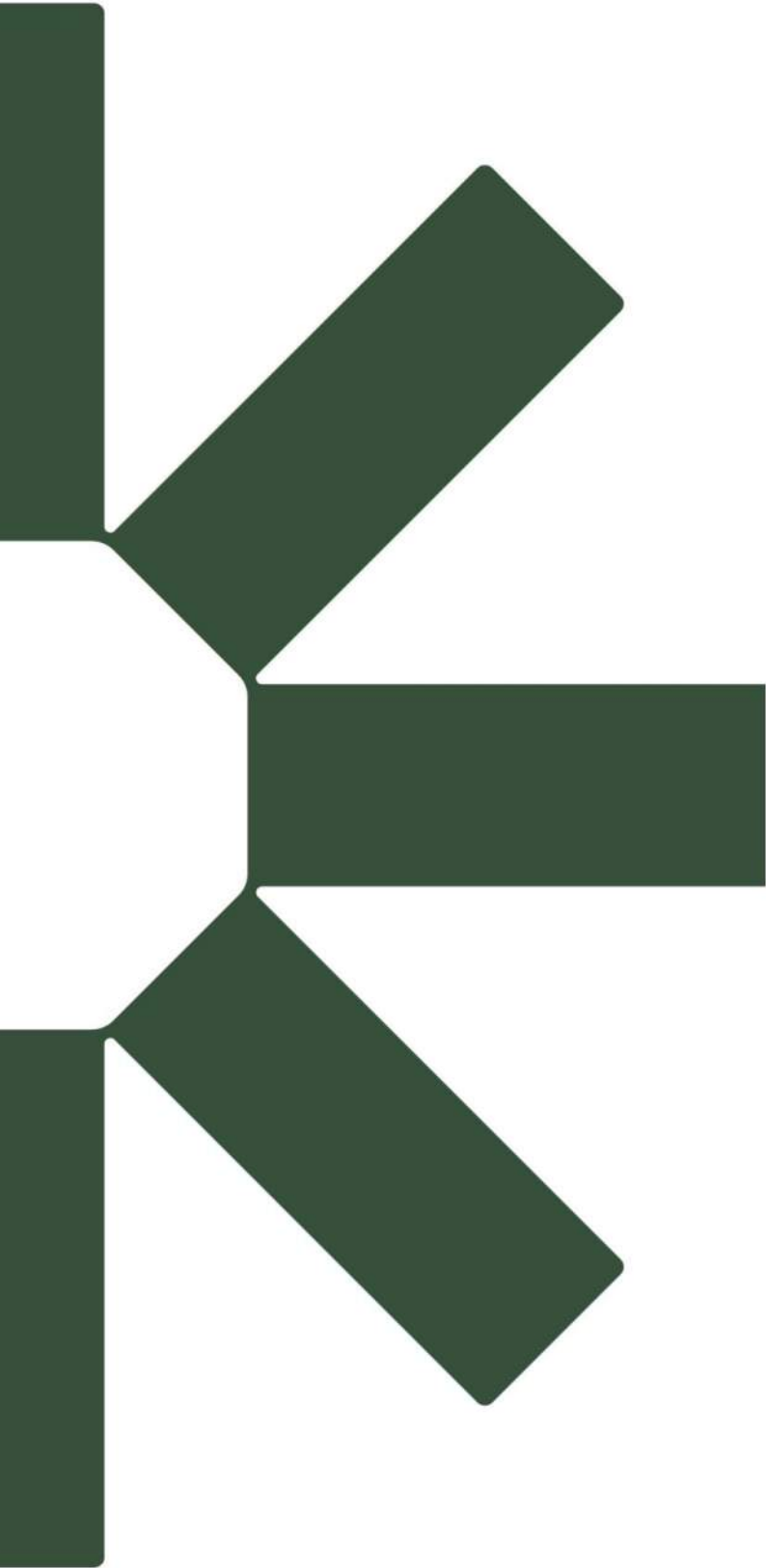


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