ADDENBROOKE PTY LTD

REDEVELOPMENT OF ROSE BAY AND POINT PIPER MARINAS

SEPP 33 REVIEW

REPORT

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REDEVELOPMENT OF ROSE BAY AND POINT PIPER MARINAS	**Katie Brookes**
SEPP 33 REVIEW	**Date:**
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ABBREVIATIONS

AS	Australian Standard
DG	Dangerous Good
EIS	Environmental Impact Statement
HAC	Hazardous Area Classification
L	Litres
NSW	New South Wales
PG	Packing Group
PHA	Preliminary Hazard Analysis
Ref	Reference
SEPP 33	State Environmental Planning Policy No. 33
UN	United Nations (No.)

HOLDS

There are no holds in this document.

1.0 INTRODUCTION

1.1 Background

JBA Pty Ltd and Patterson Britton & Partners Pty Ltd (PBP) are currently preparing an Environmental Impact Statement (EIS) for the proposed redevelopment of Rose Bay and Point Piper Marinas.

As part of the EIS Submission, PBP has identified that the Proposed Rose Bay Marina Redevelopment will store and handle diesel (C1 combustible liquid) and has requested a review of the applicability of State Environmental Planning Policy No. 33 (SEPP 33) to the Proposed Development, to determine if the Proposed Development is "potentially hazardous" and/or "potentially offensive" in the context of SEPP 33, and a review of the requirements of the NSW Dangerous Goods Regulations.

Patterson Britton & Partners Pty Ltd retained Sherpa to undertake the SEPP 33 Review of the fuel storage facility associated with the Proposed Rose Bay Marina Redevelopment.

1.2 Study Objectives

The high level objective of the study was to determine if SEPP 33 applies to the proposed redevelopment of Rose Bay and Point Piper Marinas. The constituent objectives of the study were to:

1. Review the proposed fuel storage quantities and fuel delivery frequencies against the screening threshold method given in *Applying SEPP 33 – Hazardous & Offensive Development Application Guidelines* (Ref.1); and
2. Establish whether the proposed redevelopment of Rose Bay and Point Piper Marinas is "potentially hazardous" in the context of SEPP 33 and, hence, whether a Preliminary Hazard Analysis (PHA) is required as part of the EIS Submission (and Development Application).

NOTE: The "potentially offensive" aspects of the proposed redevelopment of Rose Bay and Point Piper Marinas are addressed in the EIS and have not been covered in this SEPP 33 Review. This report does not comment on the "potentially offensive" aspects of the Proposed Redevelopment.

3. Identify the requirements of the NSW Dangerous Goods Regulations in relation to the storage and handling of Dangerous Goods at the proposed redevelopment of Rose Bay and Point Piper Marinas (Note, these are addressed in Appendix 1).

1.3 Scope of Study

The scope of this Review includes the proposed 75,000 L marine diesel (DG Class C1, UN 00C1) storage facility to be located below a proposed concrete hardstand at Rose Bay Marina. In addition to the storage tanks, the proposal includes the existing tank filling point and upgraded fuel dispensing equipment.

1.3.1 Point Piper Marina Upgrades

The Development Application (DA) submitted for the proposed redevelopment of Rose Bay and Point Piper Marinas will include the upgrade of the fuel dispensing equipment (bowser) at the Point Piper Marina.

The existing Point Piper Marina includes a 5,100 L DG Class 3 unleaded gasoline UN 1203 underground storage tank. In accordance with *Applying SEPP 33* (Ref.1), the capacity of an underground tank (storing Class 3 materials) is to be divided by five prior to assessing it against the screening threshold. Therefore, the equivalent tank quantity for screening is 1020 L (1.02 m^3) of Class 3 PGII – this quantity is below the minimum quantity in Table 1 (Screening Method to be Used) of *Applying SEPP 33* (Ref.1) and, hence, the Point Piper Marina underground fuel storage tank is not "potentially hazardous".

Furthermore, in accordance with *Question 6.1 of Applying SEPP 33* (Ref.1), SEPP 33 does not apply to existing developments if the proposed modification is considered not "potentially hazardous" *in its own right* and does not interact with the existing facility in such a way that cumulative hazards from the existing facility may be significantly increased.

The DA for the Point Piper Marina involves the modification (like-for-like replacement) of the existing fuel dispensing bowser. Noting that an upgrade of the existing bowser is likely to be a safety improvement, the modification:

- is not considered "potentially hazardous" *in its own right*; and
- will not interact with the existing facility (5,100 L DG Class 3 unleaded gasoline UN 1203 storage tank) in such a way that cumulative hazards from the existing facility may be significantly increased.

Therefore, it is considered that SEPP 33 does not apply to the Point Piper Marina modifications.

1.3.2 Decommissioning of Existing Rose Bay Marina Fuel Storage Tank

As part of the overall Redevelopment Project activity, the existing Rose Bay Marina 4,300 L fuel (DG Class 3 unleaded gasoline UN 1203) storage tank will be decommissioned.

2.0 DESCRIPTION OF PROPOSED DEVELOPMENT

2.1 Existing Facilities

The existing Rose Bay and Point Piper Marinas currently have petrol refuelling facilities which have been previously-licensed by NSW WorkCover (Rose Bay: 4,300L UN 1203 and Point Piper: 5,100L UN 1203).

The existing facilities (excluding the existing Rose Bay Marina fuel tank filling point) and any associated proposed modifications are not subject to this SEPP 33 Review (see Section 1.3).

2.2 Description of Proposed Redevelopment

The concrete-hardstand, floating walkways, berths and upgraded power supply associated with the Proposed Redevelopment are discussed in detail in the EIS (Ref.2). The description provided below addresses only the new diesel storage tanks, existing tank filling point and fuel dispensing aspects of the proposal.

The proposed fuel storage facility, illustrated in Figure 2.1, will include:

- Modification of the existing Rose Bay Marina filling point (located within the road reserve on New South Head Road) to allow for diesel deliveries (modification details yet to be confirmed).
- Installation of 3 new custom-built 25,000L double-walled rectangular storage tanks to store up to a total of 75,000 L of marine diesel (DG Class C1, UN 00C1) for retail-customer sales.
- Tank design, construction and installation will conform to the relevant standards for fuel storage tanks, e.g. AS 1629 and AS 1210.
- Installation of the tanks within a concrete chamber, beneath the proposed concrete hardstand. The underside of the chamber will not intersect the seabed as shown in Figure 2.1.
- Decommissioning of the existing Rose Bay Marina 4,300 L fuel (DG Class 3 unleaded gasoline UN 1203) storage tank.

2.3 Surrounding Land-Uses

Rose Bay Marina is situated on New South Head Road. It is proposed that public access to the marina will be allowed during normal business hours; berth holders will have access to the marina at all times.

The existing Rose Bay Marina building accommodates a café, offices and storage on the ground floor and a restaurant on the first floor.

The surrounding land use is a mixture of residential, commercial and recreational, and is considered “sensitive” in the context of SEPP 33.

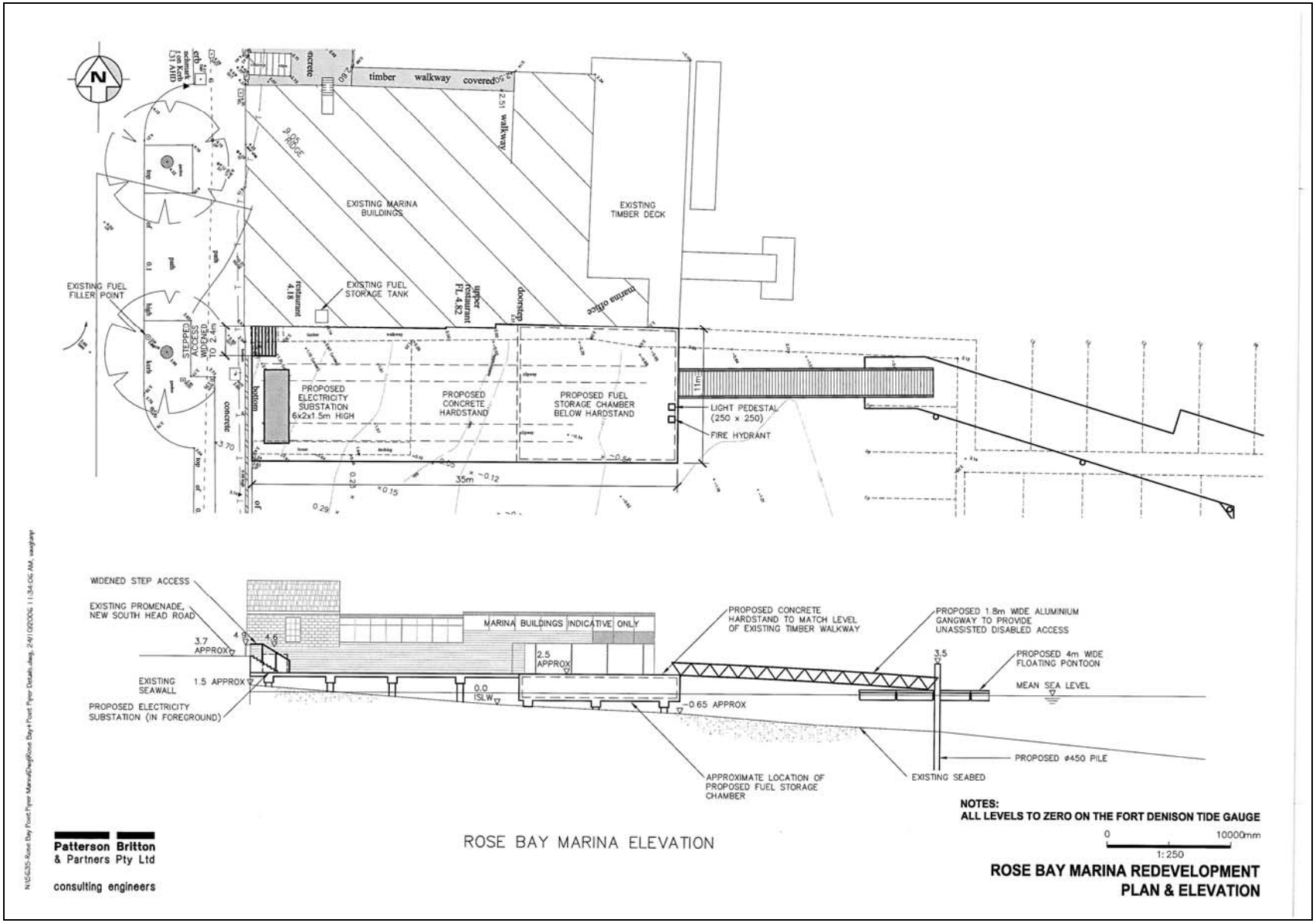

Figure 2.1 Proposed Fuel Storage Facility - Redevelopment of Rose Bay and Point Piper Marinas

3.0 SEPP 33 REVIEW

3.1 Risk Screening

3.1.1 Decommissioning of Existing Rose Bay Marina Fuel Storage Tank

As part of the overall redevelopment project activity, the existing Rose Bay Marina 4,300 L fuel (DG Class 3 unleaded gasoline UN 1203) storage tank will be decommissioned.

SEPP 33 does not apply to the decommissioning of the existing fuel storage tank, provided that there is no period during which there is simultaneous operation of both the existing tank and the proposed diesel fuel storage facility. The SEPP 33 Review was undertaken on the basis that the existing Rose Bay Marina fuel storage tank will be decommissioned (i.e. free of flammable liquid and vapour) when the proposed diesel storage tanks are commissioned.

3.1.2 Information Required for Screening

The Proposed Redevelopment relates to the storage of 75,000 L of marine diesel, a C1 Combustible Liquid.

A summary of the information required for reviewing the proposed fuel storage quantities and fuel delivery frequencies against the *Applying SEPP 33* screening threshold method (Ref.1) is given below:

- Material to be stored: marine diesel (UN 00C1, DG Class C1);
- Maximum storage quantity: 75,000 L of marine diesel;
- Frequency of road tanker deliveries for tank filling:
  - once per fortnight during peak boating season (November – April);
  - once per 3-week period during other months of the year (May – October).

3.2 Findings

Applying SEPP 33 guidance on the screening method to be used (Ref.1, Table 1) does not list Class C1 dangerous goods; instead, it states that:

> *If class C1 and/or class C2 are present on site and are stored in a separate bund or within a storage area where they are the only flammable liquid present they are not considered to be potentially hazardous. If, however, they are stored with other flammable liquids, that is, class 3PGI, II or III, then they are to be treated as Class 3PGIII, because under these circumstances they may contribute fuel to a fire.*

Given that the Proposed Redevelopment will store and handle ***only*** marine diesel, a C1 Combustible Liquid, it is considered to be not “potentially hazardous”.

The transportation screening thresholds described in *Applying SEPP 33* (Ref.1, Table 2) do not apply to road tanker deliveries of C1 Combustible Liquids.

4.0 CONCLUSIONS

Based on the findings of this SEPP 33 Review, it is concluded that:

1. The proposed redevelopment of Rose Bay and Point Piper Marinas, as described in Section 2.2, is not “potentially hazardous” in the context of SEPP 33.

2. SEPP 33, therefore, does not apply to the proposed redevelopment of Rose Bay and Point Piper Marinas (as described in Section 2.2) on the grounds that it is not considered “potentially hazardous” (see Note below).

   NOTE: The “potentially offensive” aspects of the proposed redevelopment of Rose Bay and Point Piper Marinas are addressed in the EIS and were not covered in this SEPP 33 Review. This report does not comment on the “potentially offensive” aspects of the Proposed Development.

3. A Preliminary Hazard Analysis (PHA) of the proposed redevelopment of Rose Bay and Point Piper Marinas, as described in Section 2.2, is not required for submission with the Development Application, as determined by the SEPP 33 Review.

APPENDIX 1 - OTHER REGULATORY REQUIREMENTS

There are no proposed changes to the existing fuel storage facility at Point Piper Marina and hence that DG storage is not discussed further in this section.

The proposed redevelopment of Rose Bay and Point Piper Marinas involves the storage and handling of diesel, a C1 combustible liquid.

Whilst the proposed redevelopment of Rose Bay and Point Piper Marinas is considered not "potentially hazardous" in the context of SEPP 33, diesel is a Dangerous Good (DG) and its storage and handling is subject to the following statutory requirements.

A1.1 NSW Dangerous Goods Regulations

The quantity of diesel, a C1 Combustible Liquid (UN 00C1), to be stored at the proposed redevelopment of Rose Bay and Point Piper Marinas is 75,000 L.

The NSW Dangerous Goods Regulation stipulates the following thresholds for C1 combustible liquids in bulk, stored and handled separately from other dangerous goods:

- Placard threshold = 10,000 L
- Manifest threshold = 100,000 L

Therefore, the proposed redevelopment of Rose Bay and Point Piper Marinas:

- is required to provide placarding for the outer boundary of the facility and for the storage tanks, in accordance with Schedule 6 of the NSW Dangerous Goods Regulations; in particular:
  - Clause 1 for the outer warning placard/s (see Figure 1, Page 50 of the NSW Dangerous Goods Regulations); and
  - Clause 2 for the C1 Combustible Liquids tanks (see Figure 5, Page 54 of the NSW Dangerous Goods Regulations).
- is not required to keep a DG Manifest and the diesel storage does not require Notification to NSW WorkCover (i.e. previously DG Storage Licence application).

In addition to the above, the NSW Dangerous Goods Regulation requires the occupier of a dangerous goods storage facility to prepare and make available up-to-date risk assessments for the DG storages.

A1.2 Australian Standards

The NSW Dangerous Goods (DG) Regulations are performance-based and require, as a minimum, the occupier of a dangerous goods storage facility to prepare a risk assessment covering DG storage and handling. Whilst the DG Regulations do not prescribe/ mandate application of the relevant Codes and Australian Standards, it is recognised that application of the Australian Standards, in particular, for storage and handling of flammable and combustible liquids (AS 1940), implicitly satisfies the requirements for risk assessment. Any deviation from the standards, however, must be justified by demonstration of equivalent safety by way of risk assessment.

The following Australian Standards are provided as a suggested source for industry-best-practise safeguarding for storage and handling of flammable and combustible liquids.

A1.2.1 AS 1940: The storage and handling of flammable and combustible liquids

The storage tanks, tank filing point and dispensing equipment are subject to the following clauses of *AS 1940-2004 The storage and handling of flammable and combustible liquids*:

SECTION 3 GENERAL REQUIREMENTS

SECTION 5 STORAGE IN TANKS

This section covers:

- storage tank fill points
- venting
- separation of above-ground tanks
- requirements for above-ground tanks with integral secondary containment [**Note:** in particular, Clauses:

  5.9.2(d) The secondary containment shall be adequately designed and constructed, to contain the entire contents of the primary tank.

  5.9.4 Fire rated tanks include 'vaulted' tanks which comply with UL 2085 (or have an FRL of at least 240/240/240) or are approved by Underwriters Laboratories (UL) or Factory Mutual (FM) to the equivalent US fire rating.]
- installation methods for above-ground tanks
- installation methods for tanks in tank chambers

SECTION 6 SYSTEMS FOR PIPING, VALVES PUMPS AND TANK HEATING

This section covers:

- general design and construction
- piping
- valves
- pumps

SECTION 7 FUEL DISPENSING

This section covers:

- general requirements
- dispensers
- delivery hoses and nozzles
- marine dispensers
- operations

SECTION 9 OPERATIONAL AND PERSONNEL SAFETY

This section covers:

- general precautions
- operating procedures
- management of leaks and spills
- placarding [**Note:** see also DG Regulations requirements in Section 0 of this report]
- effluent control
- construction and maintenance work
- gas-freeing of tanks and packages
- personnel training
- records
- personal protective equipment
- first aid
- additional requirements for piping and valve systems
- additional requirements for pipework
- additional requirements for tanks
- bulk transfer

SECTION 10 EMERGENCY MANAGEMENT

This section covers:

- planning for emergencies
- placarding

SECTION 11 FIRE PROTECTION

This section covers:

- general requirements for fire protection equipment
- portable fire extinguishers [**Note:** Clause 11.9.1 states that “Extinguishers may be omitted where only combustible liquid is dispensed.”]
- fire protection requirements for product pumps, manifolds and hose connection points
- fire protection requirements for fuel dispensing installations [**Note:** Clause 11.9.1 states that “Extinguishers may be omitted where only combustible liquid is dispensed.”]
- fire protection requirements for above-ground fire-rated tanks, tanks underground or in chambers [**Note:** Clause 11.10 states that “Any tank that is fire-rated (see Clause 5.9.3), or installed underground or in a tank chamber may be operated without fire protection additional to that otherwise required for the site.”]

SECTION 12 WASTE DISPOSAL

This section covers:

- storage of wastes
- waste management
- waste disposal
- pre-disposal treatment of empty containers
- methods of disposal

A1.2.2 AS 60079.10: Classification of hazardous areas

Diesel fuel is a C1 combustible liquid with a flashpoint greater than 61ºC. The diesel will be stored and handled at atmospheric temperatures. At a high level this would appear to preclude any hazardous area requirements as the material is handled more than 6ºC below its flash point. However, the following issues required consideration:

- **Generation of Foam and Spray**

  AS/NZS 60079.10:2004 Clause 2.16 describes Flammable Mist as “Droplets of flammable liquid, dispersed in air so as to form an explosive atmosphere” and notes that “Droplets of combustible liquid in air may also form flammable mists”. The following situations are considered credible scenarios for the generation of flammable diesel mists:

  1. Pump seal failure or flange failure leading to atomisation and spraying;
  2. Where tanks are top filled (i.e. splash filling);
  3. Where the diesel is subject to mechanical agitation;
  4. Where the potential exists for tanks to overflow and product to splash.

- **Local Heating**

  The bulk temperature of the diesel will be at greater than 6ºC below its flashpoint; however, the potential exists for localised heating. The following situations are considered credible scenarios for localised heating:

  1. Localised heating may occur where the potential exists for liquids to be re-circulated through pumps.
  2. Solar load on tanks or pipework may lead to localised heating.

- **Alternative Classification Techniques**

  IP 15 contains a guide for relating material properties and operating conditions to fluid categories. Reference is made to Table A3 of IP15. A material with a flash point between 55ºC and 100ºC, that is handled below its flash point and can be released as a mist is categorised as a “Category C” fluid. The general examples for point source releases contain details of hazardous radii associated with “Category C” fluids. Hence, IP15 would require HAC for diesel.

Based on the above, it is recommended that, where it is handled under pressure or at elevated temperatures, the diesel be treated as a “flammable” material for the purposes of hazardous area classification.

The following Australian Standards provide guidance on hazardous area classification:

Standard	**Title**
AS/NZS 60079.10:2004	Electrical apparatus for explosive gas atmospheres Part 10: Classification of hazardous areas
AS/NZS60079.20-2000	Electrical apparatus for explosive gas atmospheres Part 20: Data for flammable gases and vapours relating to the use of electrical apparatus
AS/NZS 2430.3.1:2004	Classification of hazardous areas Part 3.1: Examples of area classification
AS/NZS 2430.3.2:2004	Classification of hazardous areas Part 3.2: Examples of area classification-Vehicle workshops, vehicle parking, **fuel dispensing stations** and aircraft hangars
AS/NZS 2430.3.3:2004	Classification of hazardous areas Part 3.3: Examples of area classification-Flammable liquids
AS/NZS 2430.3.4:2004	Classification of hazardous areas Part 3.4: Examples of area classification-Flammable gases
AS/NZS 2430.3.9:2004	Classification of hazardous areas Part 3.9: Examples of area classification-Miscellaneous
IP15 August 2002	Area Classification Code for Installations Handling Flammable Fluids 2nd Edition

APPENDIX 2 - REFERENCES

1. NSW Department of Planning (1995): *Applying SEPP33 – Hazardous & Offensive Development Application Guidelines.*

2. JBA Pty Ltd (2006): *Environmental Impact Statement, Redevelopment of Rose Bay and Point Piper Marinas*, Document Ref. 06209, October 2006.