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# Sydney Airport Construction Environmental Management (CEM) Handbook

## Disclaimer

This Handbook has been developed using information available from various sources. Specific projects or sites may require special or different practices. It is the contractor's responsibility to adequately manage work practices in accordance with environmental Statutory Requirements. SYD will have no liability to any person or persons for any procedure, process or any other thing done or not done resulting from the use of and reliance on this Handbook.

# SYD

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# Acronyms and Abbreviations

Acronym	Description
ABC	Airport Building Controller
AEO	Airport Environment Officer
AEPR	<i>Airports (Environment Protection) Regulations 1997</i>
AES 2019–2024	Sydney Airport Environment Strategy 2019–2024
ASS	Acid sulphate soils
CEMP	Construction Environmental Management Plan
CLMA	<i>Contaminated Land Management Act 1997</i>
DITRDC (or the Department)	Department of Infrastructure, Transport, Regional Development and Communications
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act</i>
Handbook	Construction Environmental Management Handbook
HMP	Heritage Management Plan
ICAM	Investigation-Cause Analysis Method
IOC	Integrated Operation Centre
MDP	Major Development Plan
NEMP	PFAS National Environmental Management Plan
NEPM	<i>National Environment Protection (Assessment of the Site Contamination) Measure 1999</i> (NEPM; NEPC, April 2013)
NSW EPA	New South Wales Environment Protection Authority
OEMP	Operational Environmental Management Plan
PFAS	Per- and poly- fluoroalkyl substances
POEOA	<i>Protection of the Environment Operations Act 1997</i>
REF	Review of Environmental Factors
SDS	Safety Data Sheet
SYD	Sydney Airport (Corporation Limited)

# 1 Introduction

**Sydney Airport (SYD) is committed to continuous environmental improvement and becoming an industry leader in sustainability. As a major airport, we are responsible for developing in an environmentally sustainable way and minimising negative impacts on the surrounding environment and communities.**

**This responsibility extends to all airport staff, tenants, contractors, licensees and any other business operator at the airport. Environmental considerations are therefore embedded in all stages of the development approval process, from concept to planning to construction to operation.**

## 1.1 Scope of this Handbook

This Construction Environmental Management Handbook (Handbook) is focused on the stages leading up to and including construction. It sets out how to go about building your project, be it major or minor works, and satisfy the associated environmental regulatory requirements and the development intent of SYD.

**The environmental approval approach is best considered as two distinct stages:**

### Environmental Impact Assessment

which is identifying the environmental impact of your proposed project during all stages of its life (i.e. planning, design, construction, operation and decommissioning) on the surrounding environment

### Construction Environmental Management

which is developing ways to avoid or reduce the negative effects and optimise any beneficial effects on the environment throughout the construction stage of the project

This Handbook will break these concepts down for your project so that you can prepare the appropriate documentation at the right time to allow your project approvals to be efficiently processed and meet all your environmental regulatory obligations.

## 1.2 Why the need for this Handbook?

There can be hundreds of building projects in progress at the airport at any given time. The coordination of all the activities is a complex matter which can potentially affect airport users, neighbouring communities and the local environment.

To enable SYD to manage and coordinate activities across the airport, while also ensuring all environmental obligations are being met, SYD must be informed of the potential impacts of a proposal and how any impacts are going to be managed.

Given the wide variety of construction projects that can be undertaken at the airport, SYD has adopted a risk-based approach to its assessment and management. As such, the greater the potential environmental risk, the greater the expected standards in environmental impact assessment and construction management documentation and effort.

This Handbook aims to deliver the tools to prepare appropriate environmental impact assessment and construction management documents commensurate with the level of environmental risk each individual construction project poses.

## 1.3 Intended users of this Handbook

This Handbook is intended for use by:

- SYD staff involved in planning, designing, building and approvals
- all other organisations involved in building, or planning to build, at Sydney Airport

Users of this Handbook also typically include those in positions such as:

- project planners
- project managers
- contract and procurement managers
- environment managers
- compliance managers and teams
- anyone involved in the planning, design or construction of a new development
- anyone involved in the planning, design or construction of the alteration to an existing development

## 1.4 Distribution of this Handbook

The Handbook is available for download on the internal [Sydney Airportal](#) for SYD employees. Contractors and other non-SYD employees can also view and download the Handbook from [SYD's Airport planning approvals](#) extranet page.

A copy of the Handbook is provided to contractors during the tender phase. Contractors are encouraged to demonstrate an understanding of environmental requirements in tender submissions and propose initiatives to improve environmental management.

## 1.5 Review of this Handbook

This Handbook will be reviewed and updated in line with any relevant legislative and regulatory changes. A printed copy will be an uncontrolled copy, and contractors and staff must ensure they are working from the most updated version of the document.

# 2 Background

## 2.1 Surrounding Environment

The airport is located on the northern side of Botany Bay, with a section of the north-south parallel runways built on reclaimed land jutting into the bay. SYD is responsible for protecting important areas of biodiversity in the Botany Bay area, primarily the Sydney Airport Wetlands, which includes Mill Pond, Engine Pond East, Engine Pond West, and Mill Stream.

The airport site is generally flat, with the underlying geology comprising unconsolidated sediments (sand and silt) above sandstone and shale bedrock. The land has been significantly modified since 1920, when the site was first declared an aerodrome, including the redirection of Cooks River, which originally ran through the centre of the airport. Therefore, the potential for contamination and dewatering risk must be considered when planning excavations.

The land surrounding the airport site is characterised by mixed-use development, including residential and industrial areas. Consequently, environmental impacts on the airport's neighbouring communities must be accounted for in planning construction works at the airport.

The airport represents 100 years of aviation and economic development of the Sydney region, and accordingly, there is important heritage value associated with the airport. Construction activities will need to account for potential impacts on heritage listed assets located across the site.

The *Airports Act 1996* requires SYD to identify environmentally significant areas on the airport site (presented in **Table 1**). Impacts of construction activities on these areas will require increased management during planning and delivery of works. The requirements in this Handbook address aspects relevant to the airport's environmental context.

**Table 1: Environmentally significant areas at the airport**

Site	Significance
Sydney Airport Wetlands	Heritage and biodiversity
Main north-south and east-west runways	Heritage
Keith Smith Avenue	Heritage

## 2.2 Environmental Management Framework

SYD adopts a risk-based approach to environmental management. The environmental management framework ensures that environmental risks are identified and controlled for activities at the airport and that a high standard of environmental management is achieved.

The framework is underpinned by legislative requirements and primarily consists of the Airport Environment Strategy (AES) 2019–2024, the Environmental Management System (EMS) and SYD's corporate Airport Environment Policy.

While the primary purpose of the framework is to comply with legislation, it aims to drive continuous improvement of SYD's commitments to sustainable environmental outcomes.



## 2.2.1 Airport legislation

SYD is located on Commonwealth leased land where both Australian and NSW State Government environmental legislation applies. Environmental management at the airport is predominantly regulated by Commonwealth Government airport legislation, the *Airports Act 1996* and the *Airports (Environment Protection) Regulations, 1997* (AEPR) administered by the Commonwealth Department of Infrastructure, Transport, Regional Development and Communications (DITRDC or the Department).

A Department appointed Airport Environment Officer (AEO) monitors the activities on the airport to ensure implementation of and compliance with legislation and regulations.

Planning and building control on the airport is also regulated by the *Airports Act 1996* and its Regulations, primarily the *Airports (Building Control) Regulations 1996* overseen by a Department appointed Airport Building Controller (ABC).

### **Interaction with State legislation**

The application of Commonwealth Government legislation or NSW State legislation to airport operations and activities is complex but is generally resolved as follows:

NSW legislation applies in circumstances where:

- no Commonwealth law exists; or
- Commonwealth law exists but can operate concurrently with State legislation

#### **For example:**

*The AEPR regulates pollution to air, soil, water and ground-based noise and therefore is the applicable legislation on and within the airport. Handling of waste is not addressed in the AEPR and therefore NSW State law applies.*

NSW legislation may also become relevant where environmental impacts (such as leaks, spills, contamination, noise and the like) extend beyond the boundaries of airport land and impact upon NSW land, which is regulated by the NSW Environment Protection Authority (EPA) and/or Bayside Council.

For example, where construction activities cause the migration of contamination or pollution from airport land onto adjoining NSW land, provisions of the *Contaminated Land Management Act 1997* (CLMA) and *Protection of the Environment Operations Act 1997* (POEOA) (such as the duty to report contamination to the NSW EPA under s60 of the CLMA or to notify a pollution incident to the NSW EPA under s148 of the POEOA) may apply to the regulation of that contamination or pollution.

Contractors are responsible for determining the applicability of any Statutory Requirement and for referencing it in project documents, and ensuring compliance is achieved.

### Major Development Plan

The *Airports Act 1996* requires the preparation of a Major Development Plan (MDP) for major developments, which may include development projects such as new runways or taxiways, new or expanded terminal buildings. Under the *Airports Act 1996*, a project can also be considered a major development if it "*is likely to have a significant environmental or ecological impact*" or "*affects an area identified as environmentally significant in the Environment Strategy*". A Review of Environmental Factors (REF – see Section 3.3) will help determine if an MDP is required on any of the grounds listed in the *Airports Act 1996*.

### Environment Protection and Biodiversity Act

SYD will consider whether the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) applies to your project. In accordance with the EPBC Act's Significant Impact Guidelines 1.1 and 1.2 (2013, or as updated), if SYD considers that the action may, or is likely to, have a significant environmental impact on a matter of national environmental significance, the proposal will be referred to the Commonwealth Department of Agriculture, Water and the Environment to determine if further assessment and which form of assessment is required under that EPBC Act. A REF will help determine if an EPBC Referral to the Commonwealth Environment Minister is required.

## 2.2.2 Airport Environment Policy

The SYD Airport Environment Policy establishes the environmental vision and principles for driving improvements in environmental performance at the airport. SYD requires all operators, contractors and workers at the airport to align their operations to SYD's Airport Environment Policy ([available here](#)).

## 2.2.3 Airport Environment Strategy

SYD's AES 2019–2024 ([available here](#)) provides strategic direction for environmental management and underpins SYD's approach to achieving the following objectives:

- establish a framework to ensure that all operations at the airport are undertaken in accordance with relevant environmental Statutory Requirements and standards
- promote continual improvement of environmental management and performance at the airport and build on the achievements and goals of previous strategies
- realise improvements in environmental sustainability, by minimising the airport's environmental footprint and working towards a more efficient and resilient airport

The AES 2019–2024 is implemented through 11 Environmental Action Plans (EAPs), which address risks and impacts specific to the Environmental Aspects of airport activities and services. The EAPs outline SYD's environmental management commitments and list key improvement initiatives over a five-year period.

The AES 2019–2024 is a legally binding document developed in line with the *Airports Act 1996* and the AEPR.

**Anyone engaged in work at Sydney Airport is obliged to comply with the AES 2019–2024.**

## 2.2.4 Environmental Management System

In compliance with the *Airports Act 1996* and the AEPR, SYD has formalised its approach to environmentally responsible operations into an EMS. SYD's EMS supports the continual improvement of environmental performance by providing a framework to identify, manage, monitor and control environmental impacts in a systematic way.

**All people working at the airport are required to operate under SYD's EMS.**

SYD's EMS is integrated within the business and operational structure of the airport. It provides tools for establishing operational frameworks, monitoring progress, reviewing performance and implementing corrective actions. This includes plans to drive improvement in the environmental management of construction processes across the airport. The requirements and guidance in this Handbook have been developed to support compliance with SYD's EMS.

**SYD adopts a comprehensive review process to ensure the effectiveness of the EMS. Construction activities and contractor operations are subject to audits by SYD throughout the delivery of the works.**

# 3 Environmental Impact Assessment

**A systematic assessment of the environmental impacts of a project's construction and operational phases is the starting point for a project to achieve an environmentally sound approach for final design, building approval, construction methodology and operational efficiency. Therefore, all construction projects, irrespective of size, require an appropriate level of Environmental Impact Assessment (EIA).**

# 3.1 Project categories for Environmental Impact Assessment

Projects on airport fall into one of three different categories of environmental risk.

<b>Tier</b> <span style="font-size: 2em; border: 1px solid white; border-radius: 50%; padding: 5px; display: inline-block; margin: 5px;">1</span>	<p>Major Developments include any projects which conform to the requirements outlined in Section 89 of the <i>Airports Act 1996</i>.</p>	
<b>Tier</b> <span style="font-size: 2em; border: 1px solid white; border-radius: 50%; padding: 5px; display: inline-block; margin: 5px;">2</span>	<p>Developments include any projects that do not trigger an MDP and that in the construction phase have one or more of the following:</p> <ul style="list-style-type: none"> <li>• ground excavations greater than 100 mm in depth</li> <li>• groundwater interception</li> <li>• vegetation removal</li> <li>• works within 50m of an Environmentally Sensitive Area or other waterway or water body</li> <li>• any works that have the potential to result in a Level 3 and above environmental incident (refer to SYD's Incident response classification in <b>Section 5.2.2</b>).</li> </ul>	<p>Examples of Tier 2 developments are:</p> <ul style="list-style-type: none"> <li>• construction or extension of any building, airside or landside</li> <li>• construction or repairs to the airfield, including the seawall, reclamation area, lighting</li> <li>• resurfacing or repairs to any runway, taxiway, road or other stabilised surface</li> <li>• installation of a new or upgraded service or pipeline, underground or aboveground</li> <li>• investigation works including geotechnical, contamination, recovery works</li> <li>• removal or relocation of stockpiled materials</li> <li>• removal of any vegetation for any purpose</li> </ul>
<b>Tier</b> <span style="font-size: 2em; border: 1px solid white; border-radius: 50%; padding: 5px; display: inline-block; margin: 5px;">3</span>	<p>developments include projects that in the construction phase <b>do not</b> include any of the following:</p> <ul style="list-style-type: none"> <li>• ground excavations greater than 100 mm in depth</li> <li>• groundwater interception</li> <li>• vegetation removal</li> <li>• works within 50m of an Environmentally Sensitive Area or other waterway or water body</li> <li>• any works that have the potential to result in a Level 2 or below environmental incident (refer to SYD's Incident response classification in <b>Section 5.2.2</b>).</li> </ul>	<p>Examples of Tier 3 developments are:</p> <ul style="list-style-type: none"> <li>• internal terminal retail or other commercial shop fit out, office reconfiguration</li> <li>• internal connections to any service</li> </ul>

## 3.2 Type of Environmental Impact Assessment

The following table outlines the type of environmental impact assessment required for differing levels of potential environmental impact of projects for general guidance.

**Table 2: Type of EIA for different types of development**

Type of Development	Description	Type of Assessment
<b>Tier 1 (Major Development)</b>	A development that Section 89 of the <i>Airports Act 1996</i> applies to	MDP and/or EPBC Referral potentially requiring a further form of assessment such as an EIS
<b>Tier 2</b>	Multiple environmental aspects with the potential to cause serious or material environmental harm	REF
<b>Tier 3</b>	Environmental impacts considered low to negligible (no ground-breaking works)	Planning checklist

### 3.2.1 Tier 1 of Major Airport Development

For Tier 1 or Major Airport Developments, an MDP must be prepared, which examines, among other things, the environmental impact of the development and is subject to a public consultation period and approval decision by the Commonwealth Minister for Infrastructure. The content of an MDP is detailed in Section 91 of the *Airports Act 1996*.

EPBC matters of national environmental significance will also be assessed to ensure all relevant environmental legislation has been considered for any development.

For projects that potentially trigger an MDP or EPBC Act Referral, there will be intensive engagement between SYD Planning, the ABC and AEO and the applicant. Any additional guidance and requirements relevant to the specific case will be determined as a result of such engagement.

### 3.2.2 Tier 2 development

For a Tier 2 development, a REF must be prepared. A REF, similar to an MDP, must include, among other things, the environmental impact of the development in both the construction and operation phase. A detailed list of the contents of a REF is found in **Appendix 1**.

### 3.2.3 Tier 3 development

For a Tier 3 development, considered to be very low to negligible in environmental risk, no site-specific impact assessment is necessary. The information provided in the planning approvals tool is usually sufficient to enable SYD to form a view about the proposal's environmental impact.

It is, however, up to the SYD Planning and Environment Teams, in consultation with the ABC/AEO, for final determination on the type of environmental impact assessment for a project.

## 3.3 Review of environmental factors

SYD requires a development application for Tier 2 developments and above to prepare a REF.

### A REF is used for the following:

- to assess the environmental impact of the proposal in both the construction and operation phases
- determine whether the development triggers either the requirement for an MDP and/or an EPBC Act Referral
- to inform the Construction Environmental Management Plan (CEMP) for the construction period
- to inform the Operation Environmental Management Plan (OEMP), if one is applicable, the operational phase of the project (not considered in this Handbook)

### 3.3.1 What is a REF?

A REF is similar to a Statement of Environmental Effects required when development applications are lodged with local councils. It introduces the project to the planning and approval process. It describes in as much detail as possible what the project consists of in its ultimate operational phase but also in the construction phase in establishing the development.

A REF is particularly concerned with how the development will impact the surrounding environment through both these phases. Several environmental studies and/or investigations will be undertaken to inform the REF. These, typically, could include some, or all, of the following:

- soil and groundwater characterisation
- surface water quality modelling
- flora and fauna studies
- heritage investigation
- construction noise impacts
- flood study
- air quality study

Each project is unique, and the scope of environmental studies will vary depending on which environmental elements are being impacted and the degree of impact. Some projects may require detailed field studies to obtain the necessary information, while others may warrant a desktop review. These determinations will be made in consultation with the SYD Planning and Environment Teams and the AEO.

The REF is typically completed during the planning/approval phase and provided to SYD Planning and Environment Teams before the formal building application process to confirm the correct environmental approval pathway.

### 3.3.2 How do I conduct a REF?

A REF can either be prepared by your organisation or, preferably, by a suitably qualified consultant. The SYD Environment Team can provide guidance on preferred consultants. Although REFs may follow a standard format, the level of detail and scope required is determined by the extent of environmental impact. That is, the greater the scale of the activity and impact, the greater the detail required.

The minimum requirements for inclusion in a REF are in **Appendix 1**. **Appendix 1** is also used by SYD as a review checklist.

The key pieces of work in the REF are documenting the "existing environment" and the development of the Environmental Aspects and Impacts Risk Register, which is a means to capture the breadth of environmental risk of your project in a systematic and standardised way. For submission to SYD, a REF must include, as a minimum, the items listed in **Appendix 1** and the associated checklist of where in the document each is addressed.

### 3.3.3 What is an Environmental Aspects and Impacts Risk Register?

The Environmental Aspects and Impacts Risk Register method is the standard recognised methodology to capture all possible environmental impacts, assess those impacts, and propose risk mitigation measures efficiently and effectively. A worked example of this method is shown in **Appendix 4**.

An "aspect" is an element of your organisations' activities (this could be existing products, services, infrastructure or expansion, alteration or termination of any of these) that can affect the environment. Essentially, every activity has some level of environmental impact, so it is important to prioritise those most harmful for close attention and management.

An "impact" is the change to the environment caused by the activity. This change can be adverse or beneficial and wholly or partially resulting from environmental aspects. Put simply, it is cause and effect. An aspect is what is done that can affect the environment, and the impact is what that effect is.

In the context of a new development, firstly all activities to be undertaken should be listed for the construction and the operation. Operational activities need to address conditions at commencement and for a future period (e.g. >10 or >20 years if the operation is expected to grow over time).

This must include all steps from beginning to end, from day to day, from ongoing regular to one-off activities. Once this list has been developed, you can start looking at the risk of each, in a very similar way to a health and safety assessment. Different organisations use several different risk rating tools. The risk rating method used for your project must be included in the REF.

All the detail may not be fully known or understood at the stage of developing the REF. Still, it is helpful to capture as much as possible at this stage to inform subsequent environmental documentation in the next stages of the approval process.

The information captured in the register can also be used as the basis to develop Environmental Management Plans and their associated Sub plans for the subsequent construction and operational phases of the project. It can also be included in the project overall risk register.



Detailed guidance and prompts on the aspects and impacts that may arise from your project are outlined in a series of environmental element-based sections in **Section 6**.

**Table 3: Environmental impacts assessment summary**

What	REF
<b>When</b>	Pre-lodgement (prior to formal lodgement of SYD Planning Application)
<b>Where</b>	SYD Planning and Environment Teams + ABC/AEO
<b>Who</b>	Qualified environmental consultant on behalf of the applicant
<b>Why</b>	To identify the level of environmental impact, compliance with AES, EMS, SYD Planning Requirements, set the basis for CEMP inclusions

# 4 Construction Environmental Management Plan

**Construction contractors are responsible for preparing and implementing the CEMP for the project. A contractor's aim in developing a CEMP is to outline how works shall be conducted to minimise or eliminate environmental risks for its employees and sub-contractors. It is also the instrument that communicates how that will be done to the airport administration and the regulator.**

**The EIA process undertaken in the early planning phase informs the applicant of the issues that must be addressed for both the construction and operation phases of the project and should be provided to the construction contractor when tendering, so the scope of the CEMP is considered in their pricing and resourcing.**

## 4.1 Works requiring a CEMP

All Tier 1 and Tier 2 projects are required to develop a project-specific CEMP. Refer to Section 3.1 of this document for the definition of Tier 1 and Tier 2 projects.

A CEMP must be developed and lodged as part of the application for SYD planning approval through its planning approvals system, Appian ([available here](#)).

**Works cannot commence until the CEMP has been approved by SYD's Environment Team and the AEO and all relevant conditions from SYD's planning consent process are met.**

## 4.2 Contents of a CEMP

The minimum requirements for a CEMP are in **Appendix 2**. These requirements are not exhaustive as contractors are responsible for ensuring the CEMP covers all applicable environmental aspects and their appropriate mitigation measures. **Appendix 2** also includes the CEMP checklist by which the SYD Environment Team will review the CEMP for planning and works approvals.

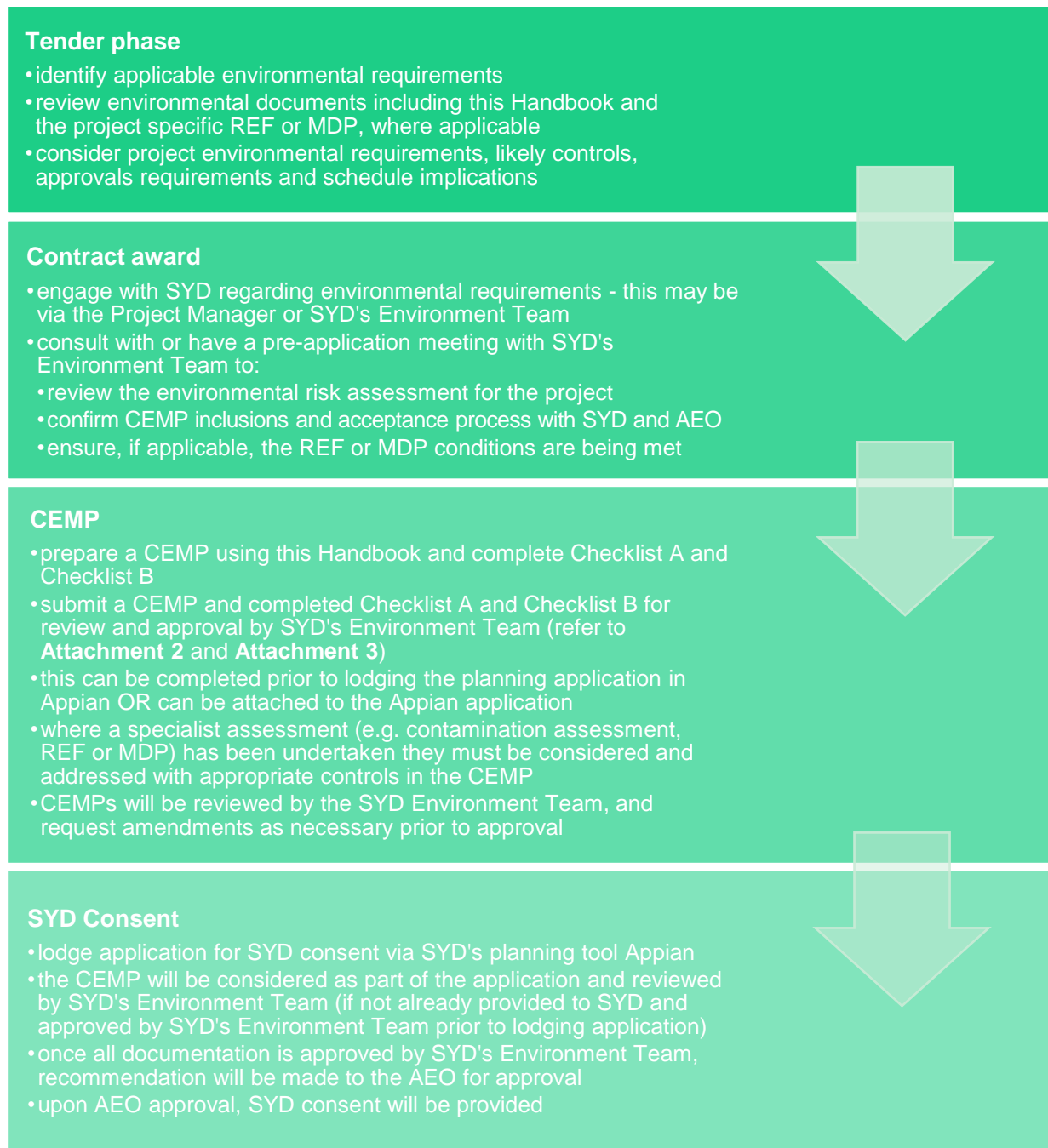
Contractors must engage with SYD Planning and Environment Teams as early as possible to ensure they have captured all requirements for the CEMP. Design and/or methodology may have changed since the original REF was prepared, and so the Environmental Aspects and Impacts Risk Register must be updated to reflect the final design and construction activities.

When lodging an application through Appian, contractors must ensure they meet the environmental conditions and requirements found in any of the following that apply to the project:

- this Handbook
- the project's EIS/MDP (if applicable)
- the project's REF
- any subsequent studies or investigations that were conducted on the back of the REF or SYD environment requests
- the project's contractual requirements
- the project's Statutory Requirements
- SYD's AES 2019–2024

During the SYD consent application review, SYD may grant approval provided additional conditions are met prior to or during the works. Contractors are expected to implement controls and provide evidence of having met any approval conditions of SYD's consent (or exemption).

**Figure 1** provides an overview of SYD's construction planning and approvals process and maps contractor responsibilities throughout the different stages of this process.



**Figure 1: Construction planning and approvals process. MDPs require additional and early engagement with SYD's Environment Team, given they follow a more complex approvals process.**

# 5 CEMP compliance and review process

**Environmental compliance and review processes also need to be addressed within the CEMP.**

**The following sections outline areas which need to be covered in the CEMP and the level of detail that is required.**

## 5.1 Environmental management responsibilities

As described in the AES 2019–2024 and SYD's EMS, there is a responsibility when undertaking any works at the airport to protect and minimise impact to the environment. Responsibility for environmental management is part of everyone carrying out activities on airport. The following highlights the types of responsibility expected of different personnel groups.

**Table 4: Environmental management stakeholders and responsibilities**

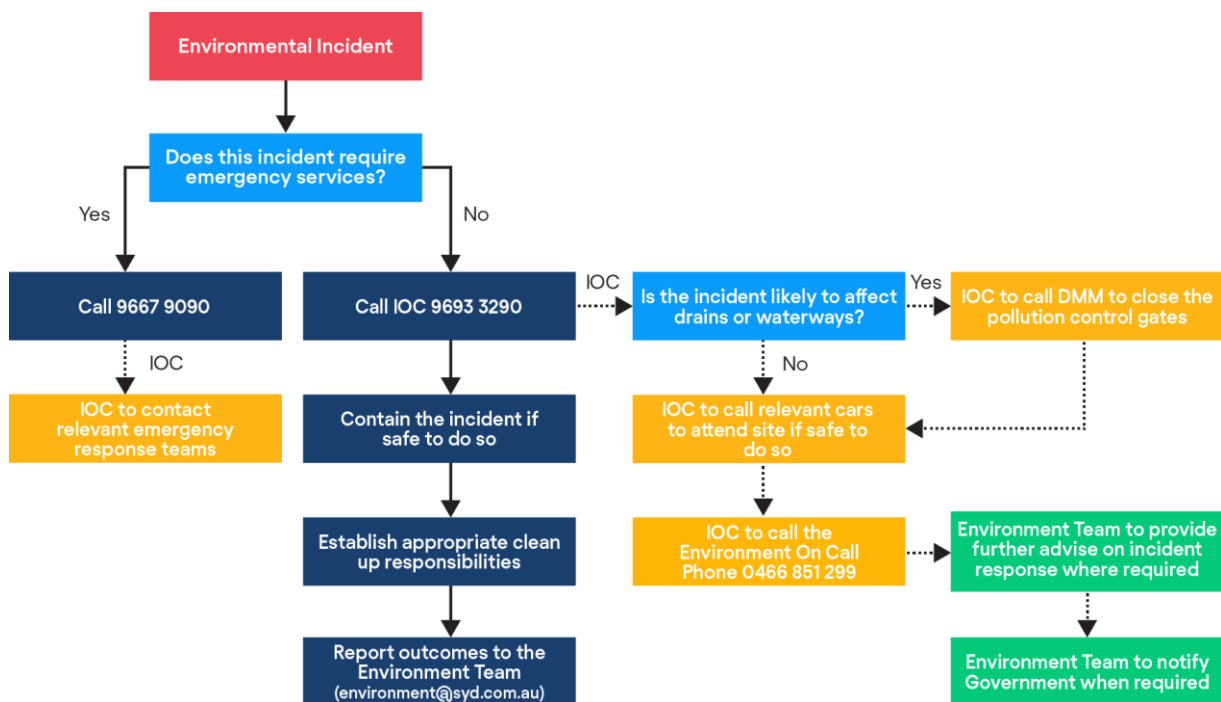
Personnel	Responsibilities
<b>AEO/The Department</b>	<ul style="list-style-type: none"> <li>oversee SYD's compliance with relevant environmental Statutory Requirements</li> <li>review and approval of environmental requirements for developments</li> <li>carry out inspections on operations and activities within the airport's boundary</li> </ul>
<b>SYD Management</b>	<ul style="list-style-type: none"> <li>oversee implementation of SYD's Airport Environment Policy and the AES 2019–2024</li> <li>allocate appropriate resources for the effective implementation of the EMS</li> <li>review SYD's environmental performance on a continual basis</li> <li>report environmental performance to the Department</li> </ul>
<b>SYD Environment Team</b>	<ul style="list-style-type: none"> <li>implement AES 2019–2024 actions and ensure EMS is implemented and maintained</li> <li>facilitate environmentally responsible and sustainable development</li> <li>guide all airport operations in minimising pollution and other environmental obligations</li> <li>report on environmental performance to SYD Management</li> </ul>
<b>SYD Project Manager/Project Team</b>	<ul style="list-style-type: none"> <li>provide guidance to contractors regarding environmental requirements (e.g. this Handbook)</li> <li>manage projects in accordance with SYD's Environment Policy</li> <li>ensure all contract documents include appropriate environmental specifications, including the requirement to prepare a CEMPs</li> </ul>
<b>SYD Project Compliance Team</b>	<ul style="list-style-type: none"> <li>carry out inspections on operations and activities within the airport's boundary</li> <li>support review of approved CEMPs and the monitoring of compliance with environmental requirements during construction</li> <li>facilitate reporting and investigation of environmental incidents and non-conformances</li> </ul>
<b>Contractors</b>	<ul style="list-style-type: none"> <li>prepare and implement robust appropriate CEMPs for works</li> <li>ensure all environmental training and risk management is fit for purpose</li> <li>develop site-based incident and emergency response strategies</li> <li>encourage open and honest behaviour in all reporting of incidents and non-conformances</li> <li>monitor environmental performance and strive for ongoing improvement</li> <li>support SYD in the integration of responsible and sustainable development for all airport works</li> </ul>
<b>All SYD and contractor staff</b>	<ul style="list-style-type: none"> <li>commit to environmental protection</li> <li>promote and uphold all environmental policies and procedures</li> <li>complete environmental inductions and attend any required training</li> <li>report environmental incidents and emergencies in accordance with requirements</li> <li>familiarise with SYD's Airport Environment Policy, AES 2019–2024 and EMS</li> </ul>

## 5.2 Incidents

### 5.2.1 Incident response process

SYD requires environmental incidents and near misses to be reported to SYD's Environment Team. The AEPR and the NSW POEOA requires that certain environmental incidents and some near misses be reported to the regulatory authorities, as discussed in **Section 2.2.1** above.

As soon as practical, all contractors must follow SYD's incident report process and notify relevant contacts, including the SYD project manager or facilitator. In the event of an incident, all contractors must adhere to the incident response process in **Figure 2** below.



**Figure 2: Incident response process**

## 5.2.2 Incident response classification

There are six levels of an environmental incident at SYD, with a response process for each. Clarification and guidance, if required, should be obtained from SYD's Environment Team.

**Table 5: Classification of environmental incidents occurring within the boundaries of Sydney Airport**

Level 1	
Criteria	Response
<ul style="list-style-type: none"> <li>• minor spill or pollution event up to 100L (hardstand only, no stormwater drain)</li> <li>• continue under normal management, albeit with slightly altered operations</li> <li>• duration of impact is likely to be less than one hour</li> <li>• coordination with SYD external stakeholders may be required to provide assistance, but normal operations are able to continue</li> <li>• no potential for pollutants to be released beyond airport land</li> <li>• reputation is unaffected if procedures and protocols are followed</li> </ul>	<ul style="list-style-type: none"> <li>• stop and contain the incident where safe to do so</li> <li>• contact the IOC 9693 3290 as soon as practicable and provide information on the incident, including the location</li> <li>• where possible, take photos of the incident and provide a summary of the incident and response to SYD's Environment Team email <u>within 24 hours</u> (<a href="mailto:environment@syd.com.au">environment@syd.com.au</a>)</li> <li>• where access is available, enter the incident into Safeguards <u>within 24 hours</u> of the incident</li> <li>• incident area remediated and actions closed out within <u>three days</u></li> </ul>
Level 2	
Criteria	Response
<ul style="list-style-type: none"> <li>• minor spill or pollution event up to 200L (hardstand only, no stormwater drain)</li> <li>• continue under normal management, albeit with slightly altered operations</li> <li>• duration of impact is likely to be less than one hour</li> <li>• coordination with SYD external stakeholders may be required to provide assistance, but normal operations are able to continue</li> <li>• no potential for pollutants to be released beyond airport land</li> <li>• reputation is unaffected if procedures and protocols are followed</li> </ul>	<ul style="list-style-type: none"> <li>• stop and contain the incident where safe to do so</li> <li>• contact the Integrated Operations Centre (IOC) 9693 3290 as soon as practicable and provide information on the incident, including the location</li> <li>• where possible, take photos of the incident and provide a summary of the incident and response to SYD's Environment Team email <u>within 24 hours</u> of the incident (<a href="mailto:environment@syd.com.au">environment@syd.com.au</a>)</li> <li>• where access is available, enter the incident into Safeguards <u>within 24 hours</u> of the incident</li> <li>• incident area remediated and actions closed out within <u>five days</u></li> </ul>
Level 3	
Criteria	Response
<ul style="list-style-type: none"> <li>• minor to moderate pollution or spill event (between 200L and 1000L)</li> <li>• potential for pollutants to be released beyond airport land via a waterway, stormwater drain or unsealed surface</li> <li>• it is within 50m of a waterway</li> <li>• near miss with the potential to be a Level 3 incident</li> <li>• duration of impact is likely to be between 1 and 3 hours</li> </ul>	<ul style="list-style-type: none"> <li>• stop and contain the incident where safe to do so</li> <li>• contact the IOC 9693 3290 as soon as practicable and provide information on the incident, including the location</li> <li>• where possible, take photos of the incident and provide a summary of the incident and response to SYD's Environment Team email <u>within 24 hours</u> of the incident (<a href="mailto:environment@syd.com.au">environment@syd.com.au</a>)</li> </ul>



- requires a coordinated effort to maintain or resume operations
- work with SYD's external stakeholders may be required to resolve an incident, but SYD remains in control of the majority of resources, equipment and operations
- has the potential to damage SYD reputation if the situation deteriorates
- where pollutants are released into stormwater drains, waterways or an unsealed surface, SYD's Environment Team or organisation responsible for the operational area will notify the AEO of the incident
- where access is available, enter the incident into Safeguards within 24 hours of the incident
- incident area remediated
- follow up meeting with SYD's Environment Team and the incident manager (others assist as required)
- Incident Investigation Report completed within one month
- incident Investigation Report to be provided to the AEO at the discretion of SYD's Environment Team

### Level 4

Criteria	Response
<ul style="list-style-type: none"> <li>• moderate to major spill or pollution event with the potential to cause material environmental harm (between 1,000L and 10,000L)</li> <li>• release of pollutants beyond airport land which can be contained or controlled</li> <li>• it is within 20m of a waterway</li> <li>• near miss with the potential to be a Level 4 incident</li> <li>• duration of impact is likely to be between 3 and 12 hours</li> <li>• may require notification of external authorities (e.g. DITCRD, NSW EPA, Local Councils)</li> <li>• requires a coordinated effort to maintain or resume operations</li> <li>• work with SYD's external stakeholders may be required to resolve an incident, but SYD remains in control of the majority of resources, equipment and operations</li> <li>• results in complaints from the industry sector or the community</li> <li>• has the potential to create a legacy issue for future users (e.g. plume from a large fuel spill)</li> <li>• results in a legislative breach or regulatory authority inquiry</li> </ul>	<ul style="list-style-type: none"> <li>• stop and contain the incident where safe to do so</li> <li>• contact the IOC 9693 3290 <u>immediately</u> and provide information on the incident, including the location</li> <li>• where possible, take photos of the incident and provide a summary of the incident and response to SYD's Environment Team email <u>within 24 hours</u> of the incident (<a href="mailto:environment@syd.com.au">environment@syd.com.au</a>)</li> <li>• once the incident has been reported to SYD, SYD's Environment Team and the organisation responsible are to discuss what notification of external authorities is required (if any) and make arrangements for notification by the appropriate party to take place at the earliest opportunity.</li> <li>• where access is available, enter the incident into Safeguards <u>within 24 hours</u> of the incident</li> <li>• incident area remediated</li> <li>• full Incident Cause Analysis Method (ICAM) investigation can be requested by SYD's Environment Team. An ICAM lead investigator trained manager must facilitate</li> <li>• incident Investigation Report completed <u>within two months</u> and must include root cause analysis</li> <li>• incident Investigation Report to be provided to the AEO</li> </ul>

### Level 5 & 6

Criteria	Response
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- 
- major spill or pollution event that will cause serious environmental harm (over 10,000L)
  - release of pollutants beyond airport land which cannot be contained or controlled
  - duration of impact not known or likely to be greater than 12 hours
  - requires notification of external authorities (e.g. DITCRD, NSW EPA, Local Councils)
  - no longer in control or management of a significant part of Airport operations
  - a situation where a state or commonwealth authority has taken active management of the situation and are requiring action from Sydney Airport
  - results in a legislative breach with high potential for litigation
  - results in major backlash from the industry sector or the community
  - legacy issues for future users (e.g. PFAS contamination)
  - severe reputational damage to SYD due to events by or to the organisation
  - stop and contain the incident where safe to do so
  - contact the IOC 9693 3290 immediately and provide information on the incident, including the location
  - where possible, take photos of the incident and provide a summary of the incident and response to SYD's Environment Team email within 24 hours of the incident ([environment@syd.com.au](mailto:environment@syd.com.au))
  - SYD's Environment Team or organisation responsible for the operational area (in line with statutory obligations) will notify the AEO and NSW EPA of the incident as relevant
  - where access is available, enter the incident into Safeguards within 24 hours of the incident
  - incident area remediated
  - competent external investigator to be appointed
  - the use of ICAM is preferred unless the investigator has an alternative model relevant to the type of incident
  - incident Investigation Report completed within three months and must include root cause analysis
-

## 5.2.3 Emergency contacts

The below table contains contact details of emergency management and response parties for incidents across the airport. Contractors must contact those that are relevant to a particular incident as appropriate. Contractors should also include this list in their CEMP.

**Table 6: List of emergency contacts at Sydney Airport**

Section	Phone	Hours
Integrated Operations Centre (IOC)	(02) 9667 9673	24 hours
Duty Managers	(02) 9667 6097	24 hours
Facilities Technical Manager	(02) 9667 9026	24 hours
Australian Federal Police (AFP)	131 AFP (131 237)	24 hours
NSW Police (Mascot station)	(02) 8338 7399	24 hours
Medical centre	(02) 9667 4355	Mon–Fri 8am–5pm
SYD's Environment Team	0466 851 299	24 hours
SYD's Compliance Team	0466 421 250	24 hours
Security operations	(02) 9667 6509	24 hours
Airfield security gates		
Gate 4	(02) 9352 7145	24 hours
Gate 27	(02) 9667 6392	5am–11pm
Gate M9	(02) 9667 9774	5am–8pm (closed weekends)
SYD ID and access	(02) 9667 9301	Mon–Fri 7am–5pm

**FOR ALL EMERGENCIES CALL  
(02) 9667 9090**

## 5.3 Inspections and audits

### 5.3.1 Inspections

SYD representatives will conduct inspections on operations and activities within the airport's boundary. Inspections can be undertaken at any time during construction. Any non-conformances or recommendations for improvement identified by SYD will be recorded, tracked and closed out by SYD and the contractor appropriately.

Contractors can also undertake a self-assessment using SYD's environmental management checklist (available upon request) or a checklist included in regulatory contractual requirements if applicable. This will support the construction project's delivery and reduce the risk of non-conformances causing impact to the project.

### 5.3.2 Non-conformances

Contractors must investigate the causal factors and implement corrective actions agreed with SYD and report when completed. SYD's Compliance and Environment Teams will review and assess the effectiveness of the corrective or preventative action implemented. Inspections may also be undertaken by the AEO.

# 6 Guidance on aspects and impacts management

Given the importance of the Environmental Aspects and Impacts Risk Register process is to the good documentation and management of construction environmental risks, additional guidance information is provided in the following sections for consideration in your project.

The following environmental management elements are addressed:



air quality and carbon emissions



ground-based noise



water quality and water use



biodiversity



heritage



waste and resource recovery



soil management



hazardous substances and dangerous goods

This section supports understanding of environmental aspects relevant to SYD which may be applicable to construction projects.

Contractors should use information in this section to support assessment of environmental risks at the airport. Contractors are expected to use risk assessments to identify which Environmental Aspects are relevant to proposed works.

This section also outlines requirements for the management of each Environmental Aspect. Contractors are expected to address all requirements under the Environmental Aspects relevant to the project and include them in the CEMP.

**If a contractor considers any requirement outlined in this Handbook as 'not applicable' the contractor must engage with SYD's Environment Team and detail the reasoning for such an assessment in the CEMP.**

## 6.1 Air quality and carbon emissions

SYD's construction activities have the potential to generate emissions to air, causing harm to the environment and human health.

### 6.1.1 Air quality

Air pollutants including carbon monoxide (CO), nitrogen oxide (NO), oxides of nitrogen (NO<sub>x</sub>), ozone (O<sub>3</sub>), particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and volatile organic compounds (VOC) can be generated during construction projects. Sources of air pollutants in construction projects include the use of vehicles, plant and equipment, chemicals and fuel consumption. Contractors must put controls in place to manage emissions to air and mitigate impacts on air quality in and around the airport.

Dust minimisation is important during construction projects when stripping soil, moving stockpiles, grading, levelling and moving plant and vehicles on unpaved tracks or open areas. Contractors must consider any heightened risks of dust generation (with particular consideration to aviation activity, surrounding roads and community impacts) and implement appropriate risk mitigation controls.

### 6.1.2 Carbon emissions

SYD has a public commitment to address climate change and achieve Net Zero emissions by 2030. This commitment covers greenhouse gas emissions (carbon dioxide equivalents, CO<sub>2</sub>-e) from energy usage across the airport, including electricity drawn to power construction site facilities or electric equipment. Contractors are expected to review electricity consumption needs for the project and ensure that they embed energy efficiency into the site layout and facilities design and integrate energy-saving practices into equipment operation.

Reducing emissions from fuel consumption not only improves air quality but also helps mitigate climate change. Construction equipment that runs on fuel contributes to the carbon emissions footprint of a project. Contractors must limit fuel burn of equipment on construction sites by considering low emissions alternatives.



**Table 7: Air quality and carbon emissions management measures that may be required**

<p><b>Planning before you start works</b></p>	<ul style="list-style-type: none"> <li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li> <li>• consult with SYD to identify whether the project has the potential to interact with contaminated materials below the ground surface (which can be released to air) as per the Asbestos Register and Contaminated Sites Register (available upon request)</li> <li>• identify Sensitive Receptors of potential air and dust pollution (e.g. aeroplanes, roads, nearby tenants, neighbouring community)</li> <li>• communicate with SYD's Environment Team if engagement with the local community is required due to potential pollution impacts. Unless otherwise advised, all consultation and community engagement will be undertaken by SYD</li> <li>• plan works to limit exposed soils during works and retain vegetation on the site where possible</li> <li>• arrange watercart or other equipment/services for key construction activities so that they are available when required</li> <li>• select plant or equipment that produce lower emissions (electric-powered equipment, reduced diesel) and incorporate energy efficiency into site office facilities</li> <li>• inspect the condition of all plant and equipment to avoid excessive emissions</li> </ul>
<p><b>During while you are working</b></p>	<ul style="list-style-type: none"> <li>• review weather forecast for potential high winds</li> <li>• avoid the formation of dust plumes from construction works by implementing dust suppression techniques as required, for example, by applying water regularly to unsealed roads and stockpiles considering wind. SYD approved spray grass mix to be used</li> <li>• use sweeper trucks to remove dirt/dust from work areas and perimeter roads</li> <li>• cover spoil trucks (when loaded)</li> <li>• use appropriately secured temporary covers or fencing to contain stockpiles</li> <li>• use no or low VOC paint, carpets, sealants and adhesives in accordance with the latest Green Star standards<sup>1</sup></li> <li>• appropriately contain/maintain emission-producing works (e.g. spray painting, engine testing) or carry out offsite</li> <li>• ensure plant idling is minimised</li> <li>• regularly maintain equipment to reduce emissions</li> <li>• report on fuel consumed on-site</li> <li>• comply with the relevant complaints management system specific to the project.</li> <li>• maintain a complaints register, if required by SYD, including contacting the SYD Project Manager or SYD Project Facilitator if complaints are received from the community or airport users</li> </ul>

<sup>1</sup> See *Green Star – Design & As Built v1.3 Chapter 13 Indoor Pollutants*



**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures.

For further information please review related documentation which can be provided upon request:

- SYD EMS, Environmental Management, Element 4: Air Quality Management Standard
- SYD Asbestos Register
- SYD Contaminated Site Register (available upon request)
- Green Star – Design & As Built v1.3 (4 star)

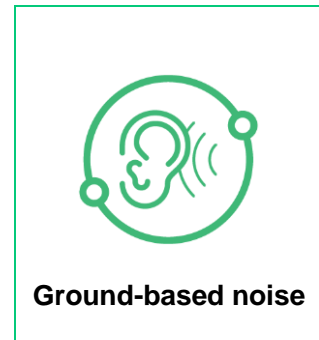
Project specific questions on air quality and carbon emissions should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For general air quality and emissions questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)

## 6.2 Ground-based noise

Noise from construction activity contributes to the airport's overall ground-based noise emissions, impacting the local community and airport users. Contractors must identify potential ground-based noise risks of a project and manage noise to minimise potential impacts.

Potential noise sources from construction activity include idling, heavy equipment, piling, power tools, loud radios, and vehicle movements. Construction noise and vibration levels vary depending on the type of equipment used, the location of the equipment and the operating mode.

Although construction noise and vibration are generally limited to areas adjacent to the project site and are temporary in nature, contractors must reduce noise levels to avoid complaints and minimise pressure on nearby Sensitive Receptors, including the surrounding ecosystems and community.



**Table 8: Ground-based noise management measures that may be required**

<p><b>Planning</b> before you start works</p>	<ul style="list-style-type: none"> <li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li> <li>• identify nearest sensitive receptors</li> <li>• check the existence of restrictions in times, locations, durations, and settings for associated activities. This includes checking if approval is required for any works during SYD's curfew (between 11pm and 5am)</li> <li>• plan noisy works for hours between 7am and 5pm whenever possible</li> <li>• communicate with SYD if engagement with the local community is required due to potential pollution impacts. Unless otherwise advised, all consultation and community engagement will be undertaken by SYD</li> <li>• for large construction projects or where significant receptor impact has been identified, develop a Construction Noise and Vibration Management Plan and include recommendations in CEMP</li> <li>• select plant and/or equipment that produces low-level noise</li> <li>• for extensive works programs with a high likelihood to impact other tenants, workers, or the broader community, establish an agreed works schedule to provide respite</li> </ul>
<p><b>During</b> while you are working</p>	<ul style="list-style-type: none"> <li>• communicate with / notify potentially impacted parties prior to works commencing in accordance with the Construction Noise and Vibration Management Plan</li> <li>• carry out noisy activities away from neighbours and sensitive areas where possible</li> <li>• where possible, consider relocating the activity to a specialist location or offsite</li> <li>• use covers or other noise reduction devices wherever possible</li> <li>• carry out regular maintenance of equipment to decrease noise and improve the effectiveness of equipment</li> <li>• monitor noise in accordance with applicable assessments (e.g. REF or Construction Noise and Vibration Management Plan)</li> <li>• maintain a complaints register, if required by SYD, including contacting the SYD Project Manager or SYD Project Facilitator if complaints are received from the community or airport users</li> </ul>

**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures.

For further information please review related documentation which can be provided upon request:

- SYD EMS, Environmental Management, Element 4: Ground-based Noise Standard

Project specific questions on noise emission should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For general noise emission questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)

## 6.3 Water quality and water use

The airport is surrounded by sensitive waterways, including Botany Bay, Sydney Airport Wetlands, Alexandra Canal and Cooks River. In addition, multiple permanent surface water bodies exist on the airport, including Northern Pond, Eastern Pond, Engine Pond East, Engine Pond West, Mill Pond and Mill Stream. Most of these constitute the Sydney Airport Wetlands, which are part of the greater Botany Wetlands System and are classified as significant under the Directory of Important Wetlands in Australia.



**Water quality and water use**

### **Per- and poly-fluoroalkyl substances (PFAS) at Sydney Airport**

There are known sources of polyfluoroalkyl substances (PFAS) at Sydney Airport, with the majority attributed to the historic use of firefighting foams by firefighting service providers during training exercises. Airservices Australia stopped using products containing PFAS at Sydney Airport from 2010.

SYD is committed to applying the precautionary principle to protect human health and the environment in relation to PFAS. We continue to advocate with the Commonwealth Government on a polluter pays approach to the management and remediation of PFAS contamination in accordance with the PFAS National Environmental Management Plan 2.0 (2020).

Contractors are required to review environmental assessments for the project to assess their workers exposure to PFAS and implement adequate controls in their Site Safety Management Plans and Safe Work Method Statements when interacting with soil, groundwater and/or surface water.

### 6.3.1 Surface water

Stormwater at the airport is collected by a network of pipes and open channels, which ultimately discharge to the adjacent surface water bodies. There are seven major and approximately 60 minor stormwater discharging outlets, which flow directly or indirectly to Alexandra Canal, Cooks River, Botany Bay, Engine Pond West and Mill Stream via Engine Pond East.

Overland flow from airport areas that are immediately adjacent to surface water bodies may also flow directly to these surface water bodies during high rainfall events. A total of 13 discrete catchment areas have been defined for the airport site.

### 6.3.2 Groundwater

Groundwater at the airport site is typically one to four metres below ground level (m bgl) and is located within fill and the Botany Sands, which are hydraulically connected. This groundwater is known to be impacted by heavy metals, hydrocarbons and PFAS in some areas. Refer to SYD contaminated sites register (available on request).

It is important that the potential for interaction with groundwater during construction works is reviewed early. This will allow time to review the background conditions of groundwater and develop a dewatering management plan if required.

### 6.3.3 Construction water

During construction, the potential for soil erosion increases the risk of affecting water quality from run-off entering stormwater and waterways. Removal of vegetation for initial clearing and grading activities exposes soil and increases the likelihood of erosion.

Both routine and non-routine construction activities have the potential to impact water quality. Projects may generate pollution through the use of diesel, oil, paint solvents, other harmful chemicals, construction debris and dirt.

Contractors must assess the risk of contaminating waterways and identify appropriate measures for:

- stormwater protection
- managing stormwater interactions with construction sites
- washing vehicles and equipment
- carrying out concrete washout
- conducting fuelling of mobile plant
- soil stabilisation
- managing run-off
- managing dewatering activities, including discharge
- addressing potentially contaminated groundwater

### 6.3.4 Water consumption

SYD is committed to the responsible use of water and to reducing potable water consumption across the airport. Contractors must implement the efficient use of potable water throughout their site compound and office facilities and must reduce potable water use during construction activities as much as possible.

**Table 9: Water quality and use management measures that may be required**

<b>Planning before you start works</b>	<ul style="list-style-type: none"><li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li><li>• develop appropriate controls for surface water management and ensure these meet approval and regulatory requirements</li><li>• prepare an Erosion and Sediment Control Plan (ESCP) following the Managing Urban Stormwater, Soils and Construction, Installation of Services practices (Blue Book)</li><li>• determine whether there will be potential for interaction with surface water and groundwater</li><li>• determine whether there is potential to generate water that could require disposal/management or where it could impact water quality</li><li>• if dewatering is required, prepare and submit a project-specific Dewatering Management Plan which outlines proactive management and controls – this can be appended to the CEMP</li><li>• establish baseline conditions where groundwater is likely to require dewatering (a minimum of three months of sampling data is required)</li><li>• where groundwater monitoring wells are installed, undertake surveys for groundwater monitoring points include Northing (Y), Easting (X) and elevation (Z) coordinates, with the Z coordinate being top of casing elevation provide survey records and groundwater well logs to SYD</li><li>• comply with SYD's sample naming convention (ESdat) to support the transfer of all collected data to SYD</li><li>• provide indicative potable water supply requirements</li></ul>
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**During  
while you  
are working**

- protect stormwater drains and check these controls regularly
- ensure water diversion controls are in place when working within 20 metres of waterways, drains, drainage lines and sumps
- ensure all hazardous substances are correctly stored (contained, banded and covered)
- ensure that bunding has sufficient capacity (110% of the volume for all storage containers)
- ensure that fully contained or sealed fuel systems are used on hydraulic equipment operating near-surface water
- check that surface run-off culverts and causeways are not blocked
- ensure adequate spill, and emergency response equipment is available on site to respond to any incident which may occur
- install rumble grids instead of wheel washing where appropriate
- ensure activities such as the washing of equipment, vehicles and aircraft are undertaken in purpose-built facilities or contained areas where all wastewater is captured and disposed of to a licensed liquid waste facility or the sewer (under trade waste agreement)
- ensure all wastes, liquid and solid, are properly contained and disposed of through an appropriately licensed waste contractor and that all records are retained
- ensure stockpiles are located away from waterways and run-off is managed
- all concrete washouts must be undertaken in designated and contained areas and preferentially use non-potable water sources
- action all water leaks, identify and repair damaged washers, taps, valves, hoses, and pipework on site
- fit trigger guns and other water saving mechanisms to hoses
- minimise the need for dust suppression by limiting exposed soils
- where dust suppression is required, opt for water-efficient systems and dust-suppression specific equipment (e.g. special-purpose hose nozzles and timers and rain sensors on static sprays)
- wherever SYD can facilitate the use of non-potable water, the contractor should use this supply instead of potable sources
- non-potable water sources should be preferentially used for watering vegetation

**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures.

For further information please review related documentation which can be provided upon request:

- Managing Urban Stormwater, Soils and Construction, Installation of Services, Known as The Blue Book – [download here](#)
- SYD EMS, Environmental Management, Element 4: Water Quality and Management Standards

Project questions on water quality and use should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au) For general water quality and use questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)

## 6.4 Biodiversity

Although highly disturbed, the airport retains areas of native biodiversity value and many of the species that visit the wider area of Botany Bay can be found at the airport at various times of the year.

Construction activities may, directly and indirectly, impact flora and fauna, particularly when a project is near a sensitive ecosystem. Therefore, contractors must identify potential risks posed to biodiversity values and engage qualified specialists to advise on appropriate mitigation measures.



**air quality and  
carbon emissions**

### Biodiversity at Sydney Airport

Over 90 native flora species have been recorded at the airport, none of which are threatened. Field surveys in 2009 (Ecosure 2011) recorded regionally rare *Hibiscus diversifolius* (swamp hibiscus) within the wetland margin to the north west of Mill Pond. The species has spread extensively into the margins of both the Engine Ponds.

Native vegetation mapping available indicates only two native plant community types (PCTs) occurring within the airport:

- Coast Banksia-Coast Wattle Dune Scrub, Sydney Basin and south east corner (PCT 772) which occurs on airport land between Foreshore Drive and Mill Stream as well as landside between the mouth of the Cooks River and the main runway; and
- Coastal Freshwater Wetland (PCT 781) which occurs within a small and isolated area located between Joyce Drive and Botany Road to the east of the airport.

There have been 96 bird species recorded on or within the vicinity of the airport site since 2009, which includes migratory and protected species. Open grasslands at the airport provide habitat for grassland birds and other migratory birds listed under the *Environment Protection and Biodiversity Conservation 1999* (EPBC Act). Areas of exposed sand at the end of Runway 34R provides potential nesting habitat for the little tern (endangered under the *Biodiversity Conservation Act 2016* (BC Act) and migratory under the EPBC Act).

**Table 10: Biodiversity management measures that may be required**

<b>Planning before you start works</b>	<ul style="list-style-type: none"><li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li><li>• check the SYD's Vegetation Trimming and Removal Process Application requirements (located in SYD's EMS – available on request). This must be included as part of the project's planning approval</li><li>• identify root extent of trees so as to avoid them during excavation</li><li>• seek approval if project plans propose tree trimming or removal</li><li>• obtain a certified arborist assessment in accordance with SYD's Vegetation Trimming and Removal Process if trimming is required to confirm this will not impact health, vitality and stability of remaining vegetation</li><li>• obtain a certified arborist assessment in line with the Institute of Australian Consulting Arboriculturalists' Significance of a Tree, Assessment Rating System if tree removal is required</li><li>• where the arborist report identifies the requirement for the offset of removed vegetation, plan for replacement planting in line with SYD's Tree and Vegetation Replacement Schedule requirements (available on request).</li><li>• check Appendix F: Landscaping Guidelines of the SYD Wildlife Management Plan for the list of trees to avoid (located on InfoSYD)</li></ul>
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**During  
while you  
are working**

- minimise disturbance of native vegetation and, where possible, retain groundcover vegetation
- establish exclusion zones to prevent damage to native vegetation and fauna habitats
- use appropriately secured fencing to protect vegetation
- undertake replanting in line with SYD's Tree and Vegetation Replacement Schedule (located in SYD EMS – available on request)
- record and report animals nesting on-site to the SYD Project Manager
- SYD-approved spray grass seed mix to be used to stabilise disturbed areas
- report biosecurity and aviation risks to Car 10 (rabbits, foxes)
- contact Car 10 if wildlife needs to be relocated from airside locations
- inspect the worksite for fauna prior to the commencement of works
- properly dispose of weeds (including mulch) offsite to prevent the spread and/or introduction of weeds
- do not park cars or store materials underneath trees, along root lines or under the dripline of a tree
- keep vehicle and plant movements to existing roadways or access tracks
- avoid soil compaction
- when backfilling soil, backfill in the same order as it was removed (i.e. bases goes back in at the base)

**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures. For further information please review related documentation which can be provided upon request:

- SYD EMS, Environmental Management, Element 4: Biodiversity Management Standard
- SYD Landscaping Policy and General Guidelines for Landscaping at Sydney Airport
- SYD Wildlife Management Plan and SYD Wetlands Management Plan
- SYD Tree and Vegetation Replacement Schedule
- SYD Vegetation Trimming and Removal Process
- List of Trees to Avoid at Sydney Airport

Project specific questions on biodiversity should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For general biodiversity questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)



## 6.5 Heritage

Sydney Airport has aspects of important heritage value. As heritage locations can provide communities with a sense of belonging, identity, and historical experience, it is important that they are conserved for present and future generations.

Sites and trees can be of heritage significance due to the indigenous cultural value, ecological value, creative achievement, aesthetic, or social value. SYD has developed a Heritage Management Plan (HMP). The HMP lists the built, landscape, vegetation and archaeological elements at the airport and classifies them into four categories of heritage significance: exceptional, high, moderate, or little. The HMP also provides guidance in managing, conserving, and protecting the values of heritage-listed assets across the airport. Contractors are expected to familiarise themselves with the tolerable activities for each heritage asset that may be directly or indirectly impacted during construction.

SYD will review the development for the potential impact on heritage values within the airport, and, if required, the contractor will be notified and a provided copy of SYD's HMP. A list of Commonwealth heritage values within Sydney Airport can be found in Appendix A of SYD's HMP and should be considered in the development planning process.



**Table 11: Heritage management measures that may be required**

<b>Planning before you start works</b>	<ul style="list-style-type: none"> <li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li> <li>• check if the work proposed is located near identified heritage value in preliminary planning documentation and has procedures in place that align with the outcomes of the assessments</li> <li>• if heritage impacts are anticipated, then:               <ul style="list-style-type: none"> <li>– seek heritage advice from a qualified heritage consultant</li> <li>– investigate options to reduce impacts to heritage values and include them in the CEMP</li> <li>– develop a Heritage Impact Statement and include in the CEMP any requirements outlined in the statement</li> <li>– consult with a heritage advisor to plan heritage impacts management strategies (this may be mandated if heritage value impacts are identified)</li> <li>– if heritage impacts are considered significant, the project will be referred to the Commonwealth Minister responsible for the Airports Act 1996 for approval, and the works must be completed in accordance with any conditions</li> </ul> </li> </ul>
<b>During while you are working</b>	<ul style="list-style-type: none"> <li>• use appropriate fencing and signage to restrict access and minimise impacts to heritage values</li> <li>• minimise heritage impacts, and cease works should any unexpected heritage items be encountered</li> <li>• if an unexpected heritage item is discovered, STOP works immediately, restrict access, and contact SYD's Environment Team</li> </ul>



**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD’s Environment Team are identified, the contractor will be required to implement corrective measures.

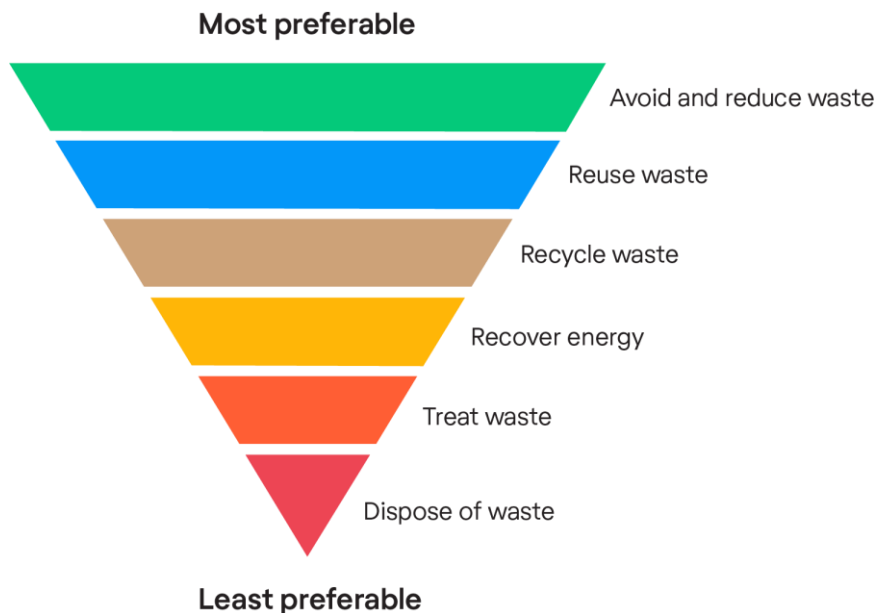
For further information please review related documentation which can be provided upon request:

- SYD EMS, Environmental Management, Element 4: Heritage Management Standard
- SYD Heritage Figs Assessment and Tree Management Plan
- SYD Heritage Management Plan

Project specific questions on heritage should be directed to the relevant SYD Project Manager or SYD’s Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For general heritage questions, SYD’s Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)

## 6.6 Waste and resource recovery

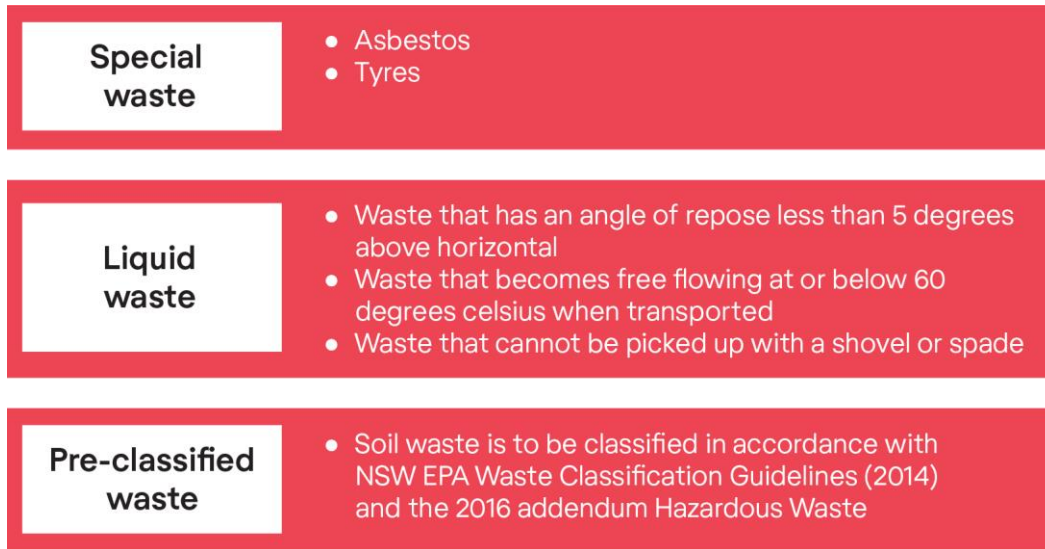
SYD is committed to reducing waste to landfills. The AES 2019–2024 outlines actions to improve recycling, resource recovery and waste minimisation across the airport. SYD manages all waste generated at the airport (excluding certain leased areas and waste from aircraft) in accordance with applicable environmental compliance obligations and guided by the waste hierarchy from the NSW EPA as shown in the figure below.



**Figure 3: NSW EPA waste hierarchy**

Contractors are expected to develop waste management measures to avoid the creation of waste. Construction waste, including concrete, bricks, timbers, and hazardous materials should be minimised as much as possible.

Recycling and appropriate disposal of construction waste reduces pollution, greenhouse gas emissions and energy. Contractors are expected to prioritise building materials with recycled content in project planning as well as identify measures for resource recovery, i.e. re-use and recycle where available and appropriate. If re-use and recycling are not possible, contractors must classify and dispose of waste appropriately following the categorisation in **Figure 4**.



**Figure 4: Waste classification guideline for waste generated from projects at Sydney Airport**

**Table 11: Waste management and resource recovery measures that may be required**

<b>Planning</b> before you start works	<ul style="list-style-type: none"> <li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li> <li>• check EPA Waste Classification Guidelines (<a href="#">download here</a>)</li> <li>• provide indicative resource requirements that will be brought onto site, used for the project and/or disposed (incl. type of material and anticipated quantity)</li> <li>• identify waste streams to be expected from the project</li> <li>• design site compounds and activities to enable waste minimisation and re-use</li> <li>• demolition plans, if applicable, should contain details of management and resource recovery of demolition waste (e.g. re-use on-site if applicable, offsite recycling)</li> <li>• check hazardous waste legislation and Safety Data Sheets (SDS) for appropriate management and disposal options</li> <li>• develop measures to divert waste from landfill</li> <li>• follow principles of the waste hierarchy</li> </ul>
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**During  
while you  
are working**

- enable waste segregation on-site: keep (clearly labelled) general and recycling waste bins at the various work areas. Ensure recycled materials are sent to an appropriate recycling facility
- keep work area clean and tidy
- do not locate waste bins near drainage lines, drains, waterways
- label waste to facilitate recycling and avoid cross-contamination
- store solvents or acids liquid waste in approved NSW EPA containers
- cover stockpiles of waste that could be impacted by wind
- keep waste classification documentation for any soil or aggregates, recycled materials delivered to site
- classify waste into special waste, liquid waste, hazardous waste, restricted solid waste, waste to landfill and recyclable waste and must be disposed of in labelled bins
- dispose waste at licensed facilities and maintain records
- handle asbestos waste in accordance with SYD's Critical Risk Standard

**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures. This may impact a project's timeframes.

For further information please review related documentation which can be provided upon request:

- SYD EMS, Environmental Management, Element 4: Waste Management Standard
- SYD Asbestos Management Plan
- NSW EPA Waste Classification Guidelines – [download here](#)
- NSW Waste Avoidance and Resource Recovery Strategy 2014-21 – [download here](#)

Project specific questions on waste management related should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For general waste and resource recovery questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)

## 6.7 Soil management

Sydney Airport is located above the Botany Sands Aquifer (or Basin), which forms part of the Sydney Basin and the Cumberland Plain. Regional geology consists of sandstone and sediments. These sediments are comprised of unconsolidated medium to coarse-grained sands interspersed with lenses and layers of peat, peaty sands, silts and clays. Cementitious iron-sand layers are common in the upper portions of the Botany Sands formation.

Near-surface soils and geology at the site is comprised of man-made fill used to raise and level the site for airport-related infrastructure, generally comprised of dredged estuarine sand and mud.

Moving soil can be a high-risk environmental activity. Therefore, planning for soil management is required before works commence, and the variety of circumstances that may apply to the project must be considered. Project planning may need to account for potential changes due to inclement weather, such as high winds or rainfall resulting in unexpected soil contamination. Soil erosion and sediment discharge can block stormwater pipes and culverts, contaminate waterways and wetlands, increase turbidity in water bodies and damage seagrass beds.

Therefore, it is important that contractors identify potential erosion and sediment risks associated with a project and implement appropriate measures to reduce soil erosion.

A well-managed site should be prepared for likely and unexpected weather conditions. It is the contractor's duty to check weather conditions for the day prior to starting works and to ensure that by the end of the day the site is prepared for any unexpected weather events that may occur outside of working hours.

### 6.7.1 Land contamination

The airport site has historically been exposed to intensive use of chemicals and fuelling, firefighting activities and ground disturbance, including landfilling, flattening of terrain and airport infrastructure developments. This has led to contamination and elevated concentrations of heavy metals, hydrocarbons and PFAS in soil. These contaminants may pose a risk to workers, the public, the environment, and infrastructure when not appropriately identified and managed.

Contractors must assess the risk of land contamination on the site of the proposed works and manage land accordingly to prevent further contamination. SYD has adopted the AEPR and National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013 to investigate and manage airport contamination.

SYD has developed tools and documentation to assist in contamination risk management:

- contaminated Sites Register (available from SYD's Environment Team upon request)
- procedures for assessing contamination risk in development and construction projects sites
- contamination assessments



**Table 12: Land contamination management measures that may be required**

<p><b>Planning</b> before you start works</p>	<ul style="list-style-type: none"> <li>• check requirements identified in applicable assessments (e.g. REF or MDP)</li> <li>• consult with SYD to identify whether a project is proposed in a location with potential for contaminated land as per the Contaminated Sites Register (available upon request)</li> <li>• confirm contamination status of project site with SYD's Environment Team. Complete a Contamination Assessment through an adequately qualified environmental consultant and develop reports as required</li> <li>• identify environmental Sensitive Receptors and potential water flows</li> <li>• where soil monitoring data points are being collected, undertake surveys of sample location, including Northing (Y) and Easting (X) coordinates. Provide survey records and soil logs to SYD</li> <li>• where groundwater monitoring wells are installed, undertake surveys for groundwater monitoring points include Northing (Y), Easting (X) and elevation (Z) coordinates, with the Z coordinate being top of casing elevation provide survey records and groundwater well logs to SYD</li> <li>• contact SYD's Environment Team to retrieve any environmental data stored on SYD's ESdat database relevant to the project site</li> <li>• comply with sample naming convention (ESdat) to support the transfer of all collected data to SYD</li> <li>• check requirements of any applicable contamination assessment report, including Remedial Action Plan or site management plans</li> <li>• check the Managing Urban Stormwater: Soils and Construction, Installation of Services – Volume 1 (Blue Book), which provides support for councils and industry to reduce the impacts of land disturbance on waterways through better management of soil erosion and sediments control</li> <li>• designate areas to stockpile contaminated soil and implement appropriate controls</li> <li>• develop and implement an Erosion and Sediment Control Plan before any ground disturbance and around any stockpile areas</li> <li>• install segregated storage areas and the appropriate signage</li> </ul>
<p><b>During</b> while you are working</p>	<ul style="list-style-type: none"> <li>• install clean water diversion channels/drains as applicable and maintain them</li> <li>• minimise ground disturbance and removal of ground cover</li> <li>• implement controls for pollutant run-off from waste collection areas and minimise litter on site</li> <li>• ensure bunding and protection measures are well maintained</li> <li>• nominate someone responsible for monitoring on-site erosion and sediment controls</li> <li>• if contamination is discovered (e.g. odour, vapour, discolouration, waste in the soil profile, sheen):             <ul style="list-style-type: none"> <li>– stop works and restrict access</li> <li>– notify SYD's Environment Team</li> <li>– isolate contaminated spoil, and clean up immediately and remove via licensed contractor</li> </ul> </li> <li>• immediately report any sediment release to SYD</li> <li>• any environmental data collected must be uploaded to SYD's ESdat database in line with the guidance detailed in the Contamination Management Strategy</li> <li>• where clean soil is imported, provide documentation to SYD to demonstrate material classification and compliance with regulatory requirements</li> <li>• appropriately segregate soils and label clearly with respect to re-use and disposal</li> <li>• assess and classify excavated soils under the NSW EPA Waste Classification and provide to SYD for review and approval prior to disposal offsite</li> <li>• identify potential for and implement measures to re-use topsoil</li> <li>• if excavated soils are to be re-used elsewhere on the airport, it must be suitable for re-use in accordance with the Airports (Environment Protection) Regulations 1997</li> <li>• log material movements each day (material tracking) and at a minimum, provide these to SYD's Environment Team upon project completion.</li> </ul>

- restore areas to the original condition or as specified
- remove erosion and sediment controls once area is stabilised and rehabilitation is complete
- when backfilling, backfill in the same order as it was removed (i.e. base goes back in at the base)
- implement drainage up-slope of stockpiles, erosion and sediment controls down-slope as applicable
- maintain erosion and sediment controls of contaminated soil stockpiles, have proper signage in place
- locate stockpiles away from waterways and drainage pits
- locate stockpiles on geofabric or plastic where required
- protect all stockpiles and apply additional controls where required (e.g. fencing, labelling, covering)
- follow dewatering procedures as required

### 6.7.2 Acid sulphate soils

The NSW EPA sulphate soil risk maps show low to high acid sulphate soil (ASS) risk in areas adjacent to the airport. However, due to the extensive modifications of the land within the airport's boundary, it has been generally classified as 'disturbed terrain', which means further investigations are required to assess ASS risks on site. Projects that involve ground disturbance works will need to consider the potential for ASS presence and must assess acidity of soils for proper soil management and disposal activities.

If ASS is suspected or confirmed in an assessment, an ASS Management Plan will be required. Contractors will then be expected to provide this as an attachment to the project CEMP.

### 6.7.3 PFAS contamination

The airport site is known to be impacted by PFAS, predominantly from the historical use of certain firefighting foams. The National Environmental Management Plan (NEMP) includes environmental guidelines for assessing PFAS risks and managing soil and water during construction and development activities. The role of SYD's Environment Team is to support NEMP alignment in all review and approval steps of project planning.

Contractors must engage with SYD's Environment Team during planning to assess the risk of PFAS presence on the project site. If PFAS is confirmed or suspected, contractors must follow the NEMP, and a PFAS Statement will be required to demonstrate compliance with applicable guidance.

Additionally, the Department has provided requirements to Commonwealth leased airports<sup>2</sup> to prevent or minimise PFAS pollution from transporting soil on and off the airport.

NEMP guidelines and the Department's expectations on PFAS management in soil transportation are reflected in the project requirements outlined in **Table 13** and are in addition to those for general land contamination management.

#### **Table 13: PFAS-specific management requirements**

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<sup>2</sup> Correspondence from DITRDC Airport Environmental Regulation, dated 8 December 2019

<b>Planning</b> before you start works	If PFAS presence is confirmed or suspected after engaging with SYD's Environment Team to: <ul style="list-style-type: none"> <li>• conduct a site assessment to understand PFAS risks, i.e. the EIA required under soil and land management must include PFAS</li> <li>• prepare (with guidance from SYD's Environment Team) a PFAS Statement and plan for any additional requirements resulting from the site assessment conclusions</li> </ul>
<b>During</b> while you are working	<ul style="list-style-type: none"> <li>• monitor implementation and effectiveness of controls required as identified in the EA</li> <li>• incorporate appropriate safety measures for handling and management of potentially contaminated soils, including potentially PFAS contaminated soils</li> <li>• before disposing of any excavated soils from a confirmed or suspected PFAS contaminated site, undertake soil testing and dispose of the material accordingly</li> <li>• follow contaminated land management procedures</li> <li>• if 'minor works' involving excavations will result in soil being replaced in its original location, no testing is needed unless there is reason to suspect re-instating soil may result in increased contamination risk or extent</li> </ul>

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A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures.

For further information please review related documentation which can be provided upon request:

- Managing Urban Stormwater: Soils and Construction, Installation of Services – Volume 1 – [download here](#)
- SYD EMS, Environmental Management, Element 4: Management of Contamination
- SYD Contaminated Sites Register (available upon request)
- Development and construction projects procedures for assessing sites
- Safety and exposure assessment

Project specific questions on soil and land management should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For general soil and land management questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)



## 6.8 Hazardous substances and dangerous goods

Hazardous materials can pose a threat to the environment, human health and safety if not managed correctly. Construction activities and demolition have the potential to use or release hazardous substances such as dust, fumes, gases, asbestos, as well as chemicals and oils. Contractors will need to implement controls related to storage, labelling, handling, transport, disposal and clean-up of hazardous substances.



### 6.8.1 Spill kits general requirements

Spill kits are required on project sites, and the location of spill kits should be outlined on the environmental control plan provided within the CEMP.

**Table 14: Types of spill kits**

Spill Kits	Purpose	Remember
General purpose	Oils and water-based liquids	<ul style="list-style-type: none"> <li>appropriate storage includes bunding and drip trays for generators, equipment and chemicals to avoid spills</li> <li>monitor the effectiveness of all absorbent pads and pillows, socks and booms deployed as they will deteriorate and sink in water</li> </ul>
Oil only	Fuel and lubricants	<ul style="list-style-type: none"> <li>do not apply loose absorbents in windy conditions and monitor them as they can blow or wash away</li> </ul>
Hazchem or chemical	Aggressive chemicals	<ul style="list-style-type: none"> <li>dispose of all material as general solid waste ensuring it is PCB-free, free of other potential contaminants and has no liquids</li> </ul>

**Table 15: Hazardous substances and dangerous goods management measures that may be required**

<b>Planning</b> before you start works	<ul style="list-style-type: none"> <li>identify all hazardous materials requiring use and storage during works</li> <li>understand Statutory Requirements, exposure standards and requirements</li> <li>identify any drains requiring protection</li> <li>check SYD's asbestos register</li> <li>select location for storage of hazardous materials and storage requirements for each material type</li> <li>identify location of spill kits and note these in the CEMP</li> </ul>
<b>During</b> while you are working	<ul style="list-style-type: none"> <li>separate flammables from toxic and corrosive material</li> <li>ensure materials are stored and labelled appropriately as per requirements</li> <li>read, understand and utilise SDS</li> <li>record what materials are stored, and what have been used during the works</li> <li>notify any spills and use a spill kit for clean up</li> <li>protect the stormwater system utilising sediment controls for any drains</li> </ul>



**Remember – The contractor is responsible for making sure all workers and sub-contractors know what is expected of them to achieve positive environmental outcomes.**

A SYD representative may inspect the implementation and effectiveness of environmental management initiatives and controls. If any non-conformances with the CEMP as approved by SYD's Environment Team are identified, the contractor will be required to implement corrective measures.

For further information please review related documentation which can be provided upon request:

- Managing Urban Stormwater: Soils and Construction, Installation of Services – Volume 1 – [download here](#)
- SYD EMS, Environmental Management, Element 5: Environmental Incident Response
- SYD asbestos register

Project specific questions on hazardous substances and dangerous goods should be directed to the relevant SYD Project Manager or SYD's Compliance Team via [Project.Compliance@syd.com.au](mailto:Project.Compliance@syd.com.au). For hazardous substances and dangerous goods questions, SYD's Environment Team can be contacted via [environment@syd.com.au](mailto:environment@syd.com.au)

# 7 Appendix 1: REF minimum requirements checklist

REF Requirement	Reviewer Checklist: Where addressed in REF
<b>1. Executive Summary</b>	<input type="checkbox"/>
1.1. Proposal Overview	<input type="checkbox"/>
1.2. Summary of Impacts and Mitigation Measures	<input type="checkbox"/>
1.3. Overall Impact	<input type="checkbox"/>
<b>2. Introduction</b>	
2.1. Background	<input type="checkbox"/>
2.2. Need for the Proposal	<input type="checkbox"/>
2.3. Approvals Framework (including Airport legislation and SYD Planning process)	<input type="checkbox"/>
2.4. Objectives of the Proposal	<input type="checkbox"/>
2.5. Scope of the Assessment	<input type="checkbox"/>
<b>3. Description of the Proposal</b>	<input type="checkbox"/>
3.1. Proposed Development	<input type="checkbox"/>
3.2. Program of Development	<input type="checkbox"/>
3.2.1. Timing of works	<input type="checkbox"/>
3.2.2. Sequence and staging of works	<input type="checkbox"/>
3.3. Description of Intended Construction Method	<input type="checkbox"/>
3.3.1. List and describe each individual construction element – example only:	<input type="checkbox"/>
1. Site Establishment	<p>The construction elements specific to your project are used to develop the <b>Environmental Aspects and Impacts Register</b> – a worked example is in <b>Appendix 4</b> below.</p> <p>Your list can be broken down in a way that makes sense for your individual project.</p>
2. Excavations - Footing and Services	
3. Box and pour slab	
4. Tilt up panels, supports and roof	
5. Electrical, mechanical and hydraulics	
6. Fire management system	
7. Internal fitout	

8. Landscaping	<input type="checkbox"/>
9. Commissioning and testing	<input type="checkbox"/>
3.3.2.Type, number, length of time of work crews/plant and machinery to be used	<input type="checkbox"/>
3.4. Description of Intended Operation	<input type="checkbox"/>
3.4.1.List and describe the different elements of the operation	<input type="checkbox"/>
3.5. Scale and frequency of the operation	<input type="checkbox"/>
<b>4. Existing Environment Baseline (used to compare project impacts against)</b>	<input type="checkbox"/>
4.1. Local surrounding and amenity	<input type="checkbox"/>
4.2. Air Quality	<p>Baseline studies may be required for all or some of these environmental elements in preparation of the REF.</p> <p>Some data sets may be available from SYD. Check with SYD Planning and Environment teams prior to starting any baseline studies.</p>
4.3. Biodiversity	
4.4. Water Quality and Use	
4.5. Soil Quality	
4.6. Background Noise	
4.7. Waste and Resource Recovery	
4.8. Traffic	
4.9. Any other environmental aspect that may be relevant	
<b>5. Environmental Aspects and Impacts Register</b>	
5.1. Construction Impacts and Mitigation Measures on Existing Environment	<input type="checkbox"/>
5.1.1.Air Quality (dust, odour)	<input type="checkbox"/>
5.1.2.Vegetation Removal (including habitat impacts)	<input type="checkbox"/>
5.1.3.Water Quality	<p>For capturing:</p> <ul style="list-style-type: none"> <li>• identification of impacts and</li> <li>• associated risk level and</li> <li>• mitigation measures</li> </ul> <p>An extracted example of an Environmental Aspects and Impacts Register is in Appendix 4 which can be used as a template/guide for the specifics of your project.</p>
5.1.3.1. Surface Water Quality	
5.1.3.2. Erosion and Sediment Control	
5.1.3.3. Stormwater Management	
5.1.3.4. Groundwater interception	
5.1.4.Soil Quality	
5.1.4.1. Soil contamination	
5.1.4.2. PFAS contamination	
5.1.5.ASS soil treatment	
5.1.6.Waste and Hazardous Products	<input type="checkbox"/>
5.1.7.Construction Noise	<input type="checkbox"/>
5.1.8.Construction Traffic – Access and Flow	<input type="checkbox"/>

5.1.9. Airport Amenity		<input type="checkbox"/>
5.2. Operational Impacts on Existing Environment	As per Construction Impacts above.	<input type="checkbox"/>
5.2.1. Land use and disturbance		<input type="checkbox"/>
5.2.2. Flora and Fauna		<input type="checkbox"/>
5.2.3. Soil and Water Quality – for a new lease Site Entry and Exit reports)		<input type="checkbox"/>
5.2.3.1. Surface Water Quality		<input type="checkbox"/>
5.2.3.2. Stormwater Quantity and Drainage (Flooding impacts)		<input type="checkbox"/>
5.2.3.3. Groundwater		<input type="checkbox"/>
5.2.4. Noise (effect on or from development)		<input type="checkbox"/>
5.2.5. Waste and Hazardous Products		<input type="checkbox"/>
5.2.6. Access and Traffic Flow		<input type="checkbox"/>
5.2.7. Airport Amenity (visual, noise, odour)		<input type="checkbox"/>
<b>6. MDP and EPBC Referral Discussion</b>		<input type="checkbox"/>
<b>6.1. MDP Discussion</b>		<input type="checkbox"/>
<b>6.2. Matters of NES Discussion</b>		<input type="checkbox"/>
<b>7. Summary of Impacts</b>		<input type="checkbox"/>
7.1. Operational Impacts		<input type="checkbox"/>
7.1.1. Further information requirements	<p>The Aspects and Impacts Register can be used as the basis for:</p> <ul style="list-style-type: none"> <li>identifying the need for further studies/information</li> <li>developing the CEMP</li> <li>developing the OEMP (if applicable)</li> </ul>	<input type="checkbox"/>
7.1.2. OEMP Inclusions		<input type="checkbox"/>
7.2. Construction Impacts		<input type="checkbox"/>
7.2.1. Further information requirements		<input type="checkbox"/>
7.2.2. CEMP Inclusions		<input type="checkbox"/>
7.3. Matters of NES conclusion		<input type="checkbox"/>
7.4. MDP conclusion		<input type="checkbox"/>
<b>8. Conclusion</b>		

# 8 Appendix 2: CEMP minimum requirements checklist

Checklist A - CEMP requirements	Where addressed in the CEMP (or note why not applicable) <sup>3</sup>
<b>1. Introduction</b>	
1.1. Project description including the scope of works, purpose, location, dates for the construction period, hours of work, site compound requirements	<input type="checkbox"/>
1.2. Objectives of the CEMP	<input type="checkbox"/>
1.3. Contact details of all relevant project officers, including relevant SYD and emergency contacts	<input type="checkbox"/>
<b>2. Legal and other requirements</b>	
2.1. Relevant Commonwealth legislation, and how these apply to the project	<input type="checkbox"/>
2.2. Relevant NSW legislation and how these apply to the project	<input type="checkbox"/>
2.3. Relevant guidelines and how these apply to the project	<input type="checkbox"/>
<b>3. Site operating details</b>	
3.1. Name and address of the company	<input type="checkbox"/>
3.2. Description of the site	<input type="checkbox"/>
3.3. Map of the site	<input type="checkbox"/>
3.4. Compound location and layout figure	<input type="checkbox"/>
3.5. Environmental control plan/s of the site (aerial photo base map) including works locations, Sensitive Receptors (such as waterways) and key site features, soil stockpile locations, chemical storage locations, spill kits, vegetation proposed to be impacted, compound locations, entry and exit points, designated fueling and concrete washout areas.	<input type="checkbox"/>
3.6. All controls shall be indicated on the plan/s.	<input type="checkbox"/>
3.7. Description of key environmental setting including any Sensitive Receptors	<input type="checkbox"/>
3.8. Nearest community receptors	<input type="checkbox"/>

<sup>3</sup> It is not acceptable to note N/A – a brief reason must be provided.

3.9. Detailed description of works to be carried out (e.g. maintenance, painting, construction, demolition)	<input type="checkbox"/>
<b>4. Aspects and impacts risk assessment (Refer to Appendix 3 for further guidance) (The register from the REF or MDP can be used and updated for the CEMP)</b>	
4.1. List of all activities to be carried out as part of the project	<input type="checkbox"/>
4.2. Identify what aspect of the environment these activities interact with (e.g. contamination, water use, noise emissions, pollution, waste, extreme weather)	<input type="checkbox"/>
4.3. Potential impact of the activity if it is not actively managed	<input type="checkbox"/>
4.4. Likelihood that a potential environmental impact will occur	<input type="checkbox"/>
4.5. Consequence should the environmental impact occur	<input type="checkbox"/>
4.6. Controls to mitigate the impact and reduce the risk – where the controls consist of a number of activities and issues an environmental element-specific Subplan is typically proposed. The subplans are in the next section.	<input type="checkbox"/>
4.7. Residual risk rating following implementation of controls	<input type="checkbox"/>
<b>5. CEMP Subplans (likely elements that will require an individual Subplan)</b>	
5.1. Air Quality & Carbon Management Plan	<input type="checkbox"/>
5.2. Surface Water Quality Management Plan	<input type="checkbox"/>
5.3. Soil/Groundwater and Contamination Management Plan	<input type="checkbox"/>
5.4. Acid Sulphate Soil Management Plan	<input type="checkbox"/>
5.5. Noise Management Plan	<input type="checkbox"/>
5.6. Carbon Emission Management Plan	<input type="checkbox"/>
5.7. Hazardous Material Management Plan	<input type="checkbox"/>
5.8. Waster and Resource Recovery Management Plan	<input type="checkbox"/>
<b>6. Environmental compliance management</b>	
6.1. Roles and responsibilities of those working on site	<input type="checkbox"/>
6.2. Detail how team members are made aware of environmental responsibilities	<input type="checkbox"/>
6.3. Environmental and site features awareness training provided to those on-site and with key responsibilities	<input type="checkbox"/>
6.4. Detail how documents related to environmental management will be stored and maintained	<input type="checkbox"/>
6.5. Detail how compliance with environmental requirements will be monitored and evaluated	<input type="checkbox"/>
6.6. Detail how non-conformance with targets or environmental requirements will be managed and recorded	<input type="checkbox"/>

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**7. Incident and emergency response**

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7.1. Detail incident and emergency response procedures are in place

7.2. Detail spill control kits or other site/activity-specific mitigation measures are in place (e.g. silt fences) on-site and how these are maintained

7.3. List environmental incident procedure complying with Section 4

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**8. Reporting**

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8.1. Detail the routine or emergency reporting (e.g. inspections, incidents, monitoring results, complaints, audits)

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# 9 Appendix 3: Aspects and impacts checklist

<b>Checklist B – Potential environmental considerations</b>		Yes / No	For Yes, provide document reference For No, provide comment why not
<small>(for inclusion in the Aspects and Impacts Risk Register for CEMP and/or REF) SYD's Environment Team may be consulted if additional information is required to complete this checklist</small>			
<b>Air quality and carbon emissions</b>			
Do the proposed works have the potential to release emissions to air? <ul style="list-style-type: none"> <li>do the works involve the use of plant equipment?</li> <li>will soil be stripped or moved?</li> <li>will nearby residential areas be affected by emissions to air or odour?</li> </ul>			
<b>Ground-based noise</b>			
Do the proposed works have potential to have noise impacts? <ul style="list-style-type: none"> <li>do the works involve the use of plant or equipment?</li> <li>are the works located in sensitive areas or near residential areas adjoining, or in the vicinity, of the airport?</li> </ul>			
<b>Water quality and water use</b>			
Do the proposed works include activities that have the potential to impact surface and/or groundwater quality? <ul style="list-style-type: none"> <li>are the works located near any sensitive waterways which surround the airport?</li> <li>are the works located near drains and/or sumps?</li> <li>will the works involve pouring concrete (and washout)?</li> <li>will the proposed works produce wastewater?</li> <li>will works intersect with groundwater? And Is dewatering required or likely?</li> <li>will works require active management or diversion/protection from stormwater?</li> <li>is a dewatering management plan required?</li> <li>will the works require potable water use?</li> <li>does the proposed works involve the washdown of vehicles or machinery?</li> </ul>			
<b>Biodiversity</b>			
Do the proposed works have the potential to impact biodiversity? <ul style="list-style-type: none"> <li>is vegetation clearance or trimming required?</li> <li>are the works located near existing vegetation?</li> <li>will the works impact habitat?</li> </ul>			
<b>Heritage</b>			



<p>Do the proposed works have the potential to impact heritage places/areas?</p> <ul style="list-style-type: none"> <li>• are the works within proximity to any cultural or historic heritage places/areas?</li> </ul>		
<b>Waste and resource recovery</b>		
<p>Do the proposed works involve waste disposal?</p> <ul style="list-style-type: none"> <li>• will the works generate any wastes?</li> <li>• what is the recyclability potential of building materials?</li> <li>• what sustainable procurement principles for building materials and diversion from landfill have been incorporated to the works?</li> </ul>		
<b>Soil management</b>		
<p>Do the proposed works involve ground disturbance? E.g.</p> <ul style="list-style-type: none"> <li>• excavation or trenching</li> <li>• ground-fixed signage/fencing placing works</li> <li>• digging holes</li> <li>• stripping materials for geotechnical purposes</li> </ul> <p>Are the proposed works going to be undertaken on identified contaminated land?</p> <ul style="list-style-type: none"> <li>• is the site registered in SYD's contaminated site register?</li> <li>• has an environmental assessment identified contamination (including PFAS) at the site?</li> </ul> <p>Do the proposed works involve the importing and transporting of soils?</p> <ul style="list-style-type: none"> <li>• are stockpiles present?</li> </ul>		
<b>Hazardous substances and dangerous goods</b>		
<p>Do the proposed works involve the handling and storage of hazardous materials and dangerous goods?</p> <ul style="list-style-type: none"> <li>• this includes explosives, gases, flammable liquids, asbestos, toxic, corrosives, oxidising agents and aerosols</li> </ul>		

# 10 Appendix 4: Sample aspects and impacts risk register

Worked example of a basic building construction (extract for establishing site activity)

No	Activity	Aspect	Potential/Impact	Environmental Element	Pre-Control Risk Assessment			Mitigation Measures [List the measures to be put in place to address each risk] For organisations with well-developed environmental systems insert procedure ID and attach copy of procedure	Post-Control Risk Assessment		
					Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating
<b>Site Establishment</b>											
1.	Topsoil removal, stockpile and vegetation clearing	a) Clearance beyond approval limits	Unlawful removal of protected flora	FnF	Fill out risk in accordance with your organisation's risk rating tool			Develop a Flora and Fauna Management Plan that addresses: <ul style="list-style-type: none"> <li>• Clearance limits</li> <li>• Fauna removal prior to clearing</li> <li>• Refers to a clearly delineated clearance map; and</li> <li>• All other FnF issues identified in this register</li> </ul>	Fill out risk in accordance with your organisation's risk rating tool		
		b) Protected fauna on-site	Unlawful interference with protected fauna	FnF							
		c) Airborne dust deposition offsite	<ul style="list-style-type: none"> <li>• Interruption to airport operations</li> <li>• Health and safety risks to neighbouring business and communities</li> <li>• Visibility risk to aircraft</li> <li>• Damage to aircraft engines</li> <li>• Community/tenant complaints</li> </ul>	AQ				Develop an Air Quality Management Plan that addresses: <ul style="list-style-type: none"> <li>• System of on-site dust suppression including water trucks/, misters,</li> <li>• stabilisation of open surface as soon as practicable,</li> <li>• real time dust monitoring and</li> <li>• all other AQ issues identified in this register</li> </ul>			
		d) Mud tracking onto airport/local roads	<ul style="list-style-type: none"> <li>• Sedimentation of local waterways</li> <li>• Increase in turbidity of water column</li> <li>• Light reduction for aquatic plants</li> </ul>	SW				Develop a Surface Water Quality Management Plan that addresses: <ul style="list-style-type: none"> <li>• Erosion and Sediment Control</li> <li>• Stockpile Management</li> <li>• Surface WQ monitoring plan</li> <li>• Spill Response procedures and</li> <li>• All other SW issues identified in this register</li> </ul>			
		e) Run-off from uncovered ground	Sedimentation of local waterways	SW							
		f) Run-off from Topsoil stockpile	Sedimentation of local waterways	SW							
		g) Tannin run-off from chipping stockpile	Eutrophication effects	SW							
		h) Fuel/oil spills or leaks from plant and machinery near/on water	Hydrocarbon contamination of waterway	SW							
		i) Fuel/oil spills or leaks from plant and machinery on soil	Hydrocarbon contamination of soil	SC				Develop a Soil Contamination Management Plan that addresses: <ul style="list-style-type: none"> <li>• Testing regime for materials imported to site – parameters, frequency/volume, test types, for each material type</li> <li>• Material tracking procedure within airport</li> <li>• Entry Contamination Investigation</li> <li>• PFAS controls</li> <li>• ASS treatments and controls</li> <li>• Waste Classification for soils leaving the site and</li> <li>• All other SC issues identified in this register</li> </ul>			
		j) PFAS in soil stockpile	PFAS contamination in soil/water	SC							

No	Activity	Aspect	Potential/Impact	Environmental Element	Pre-Control Risk Assessment			Mitigation Measures [List the measures to be put in place to address each risk] For organisations with well-developed environmental systems insert procedure ID and attach copy of procedure	Post-Control Risk Assessment		
					Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating
		k) ASS in soil stockpile	Acidic run-off to nearby soil or waterway	ASS				Prepare an ASS Treatment plan for the works. Can append to SC Management Plan.			
		l) Nuisance noise from plant and machinery	<ul style="list-style-type: none"> <li>Health and safety risks to neighbouring business and communities</li> <li>Reduced amenity</li> <li>Community complaints</li> </ul>	N				Prepare a Noise Management Plan that addresses: <ul style="list-style-type: none"> <li>Noise predictions for the works during the day, evening and night (if applicable) to sensitive receivers</li> <li>Noise mitigation procedures including timing of works, cumulative works on site, cumulative works with nearby projects or other airport projects</li> <li>Noise monitoring of works to validate modelled predictions</li> <li>Any consultation with local tenants/communities that may be required</li> <li>All other N issues identified in this register</li> </ul>			
2.	Install fencing, Crib Huts, staff amenities and parking	a) Airborne dust deposition offsite from material delivery and spreading	<ul style="list-style-type: none"> <li>Interruption to airport operations</li> <li>Health and safety risks to neighbouring business and communities</li> <li>Visibility risk to aircraft</li> <li>Damage to aircraft engines</li> <li>Community/tenant complaints</li> </ul>	AQ				See Row 1. c)			
		b) Fuel/oil spills or leaks from plant and machinery near/on water	Hydrocarbon contamination of waterway	SW				See Row 1. d) – h)			
		c) Fuel/oil spills or leaks from plant and machinery on soil	Hydrocarbon contamination of soil	SC				See Row 1. i) - j)			
		d) General office wastes - paper, cardboard, plastic and food wastes.	<ul style="list-style-type: none"> <li>Cross contamination of waste</li> <li>Waste reduction</li> </ul>	W				Develop a Waste Management Plan that addresses: Waste classification, disposal, reduction initiatives			
		e) Effluent generated at site amenities during	Inappropriate disposal of waste	W							
		f) Energy use for office and compound	<ul style="list-style-type: none"> <li>Greenhouse emissions</li> <li>Non-sustainable energy consumption</li> </ul>	GH				Prepare a Greenhouse Gas Emissions Reduction Strategy for the project			
		g) Chemical storage spill/leak or incorrect co-storage or storage containment	Contamination to soil/water Hazardous comingling of chemicals resulting in health and safety risks to staff and neighbours Insufficient containment holding capacity (eg incorrect sizing of bund)	HZ				Prepare a Hazardous Substances Management Plan that addresses: <ul style="list-style-type: none"> <li>Correct co/storage of chemicals</li> <li>Appropriate containment controls and dimensions</li> <li>Avoid storage on site where possible</li> <li>Describe appropriate spill kits and response procedures</li> </ul>			
<p>This process is to be repeated for each Construction Activity for the whole project. Once all activities have been examined for this environmental Aspects and Impacts identification process the next step is to prepare the CEMP. The CEMP should be based on this register and the mitigation measures outlined to now prepare the detailed Management Plans that will be contained in the CEMP.</p>											

No	Activity	Aspect	Potential/Impact	Environmental Element	Pre-Control Risk Assessment			Mitigation Measures [List the measures to be put in place to address each risk] For organisations with well-developed environmental systems insert procedure ID and attach copy of procedure	Post-Control Risk Assessment		
					Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating
3.	Excavation for footings & underground services										
4.	Box and pour slab										
5.	Tilt up panels, supports and roof										
6.	Install mechanical and hydraulic systems (including fire management)										
7.	Internal fitout										
8.	Connect and commission all services										
9.	Landscaping										
10.	Commissioning and testing										

AQ	ASS	N	FnF	GH	HZ	GW	SW	SC	W
Air Quality and Carbon	ASS/PASS	Noise	Flora n Fauna	Greenhouse Emissions	Hazardous Goods	Groundwater	Surface Water	Soil Contamination	Waste