

Sustainable Development Code

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Document Control

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Terms and Abbreviations

Applicant	A person or entity (whether an existing tenant/licencee or new tenant /licencee) submitting a Development Proposal.
Best Practice	Sustainable development actions that have been shown by research and experience to produce optimal results.
Circular Economy	A system designed to create closed-loop economic systems using material re-use, recycling and remanufacture to improve resource use and reduce waste.
Construction Environmental Management Plan (CEMP)	Environmental management framework, practices, and procedures to be followed during site preparation and construction of the project to manage and mitigate environmental risks.
Development Proposal	A detailed set of documents that is consistent with the Development Standards and that outlines: <ul style="list-style-type: none"> • Project description and objectives • Location and site details • Scope of works and delivery milestones • Cost estimates • Design drawings and reports • Planning Pathway
Sustainable Development Checklist	Document issued by NSW Ports and used by the Applicant to demonstrate how their Development Proposal meets the Minimum Requirements of the Sustainable Development Code.
Sustainable Development Standards	Set of Objectives, Minimum Requirements and in some cases Best Practice that ensure that all development on NSW Ports Land is: <ul style="list-style-type: none"> • Safe • Consistent • Reliable • Environmentally responsible • Efficient and effective
Environmental Product Declaration (EPD)	An independently verified and registered document that communicates transparent and comparable data and other relevant environmental information about the life-cycle environmental impact of a product. The relevant standard for Environmental Product Declarations is ISO 14025, where they are referred to as “type III environmental declarations”.
Environmentally Sensitive Areas	Areas depicted at Figure 7 .
First Flush	The initial stormwater runoff during rainfall that contains the highest initial pollutant load. This generally involves the first 10 mm of rainfall, generally over a period of 10 minutes after the onset of rainfall.
Landowner	Port Botany Lessor Ministerial Holding Corporation.
Minimum Requirements	The minimum sustainable development requirements outlined in Section 3 of the Code for each Development Standard.
NSW Ports Land	NSW Ports’ assets at Port Botany, Port Kembla, the Cooks River Intermodal Terminal, and the Enfield Intermodal Logistics Centre. The lease boundary for each of these assets is available to view here: https://www.nswports.com.au/port-and-intermodal-maps
Operational Carbon Emissions	The greenhouse gas emissions (measured in carbon dioxide equivalent) associated with operating and maintaining infrastructure, buildings, and facilities.
Operational Environmental Management Plan (OEMP)	Environmental management framework, practices, and procedures to be followed during site operation to manage and mitigate operational environmental risks.

Planning Pathway	Development Proposals on NSW Ports Land are generally categorised into one of three planning pathways (as specified below): <ul style="list-style-type: none"> • Exempt Development • Complying Development • Development with consent (Development Applications, Modification Applications, State Significant Applications)
Potentially Hazardous Development	Development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality— <p>(a) to human health, life, or property, or</p> <p>(b) to the biophysical environment,</p> and includes a hazardous industry and a hazardous storage establishment. Refer to <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> .
Project Approval	Any planning and environmental approvals required under legislation, environment protection licences, leases or property licences and commercial agreements': It is important to note that each activity undertaken on NSW Ports Land is subject to specific obligations that are relevant to the activity and its impacts. These specific obligations may be documented as conditions within, for example, planning approvals, environment protection licences, leases or property licences and commercial agreements.
Sustainable Development Code (Code)	This document.
Upfront Embodied Carbon Emissions	The greenhouse gas emissions (measured in carbon dioxide equivalent) that occur during the resource extraction, manufacturing, and transportation to construction site of the materials used.
Water Sensitive Urban Design (WSUD)	An approach to the planning and design of urban environments focused on integrating the urban water cycle (including potable water, wastewater, and stormwater) with the built and natural urban landscape.

BIC	Building Information Certificate
CDC	Complying Development Certificate
DA	Development Application
SSD	State Significant Development
SSI	State Significant Infrastructure

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1. Introduction

1.1. Purpose

The purpose of the NSW Ports Sustainable Development Code (**Code**) is to assist [Applicants](#) to understand the expectations and requirements of NSW Ports for the development of land, infrastructure, buildings, services and facilities on [NSW Ports Land](#) covering planning, designing, building, operating, maintaining and decommissioning requirements, so that Applicants can properly address these issues in any [Development Proposal](#) submitted to NSW Ports for its consideration.

1.2. Objectives

The overall objective of the Code is to promote sustainable development on NSW Ports Land. This is to be achieved by:

- facilitating the future development of NSW Ports Land in responsible and efficient manner;
- minimising the impacts of activities on NSW Ports Land including on the surrounding environment and community;
- ensuring the ongoing security of NSW Ports Land;
- minimising risks associated with both construction and operations on NSW Ports Land; and
- enhancing the visual amenity of NSW Ports Land through a consistent and coordinated approach to development.

1.3. Applicability

The Code applies to all Applicants submitting a Development Proposal on NSW Ports Land.

The Code applies to all Development Proposals and works delivered on NSW Ports Land by port and intermodal tenants and occupants, as well as by NSW Ports.

Development Proposals at NSW Ports sites are generally categorised into one of three [Planning Pathways](#) (as specified below) and The Code applies to all these planning pathways.

- Exempt Development
- Complying Development
- Development with consent (Development Applications, Modification Applications, State Significant Applications)

The Code is to be consulted by the Applicant from the inception of a Development Proposal to ensure that sustainable outcomes are incorporated into decision making from the outset.

1.4. Relationship to statutory authority requirements

The Code is to be considered together with the requirements of other relevant statutory authorities. Statutory or legislative requirements take precedence over the outcomes or initiatives within this document and all NSW Ports Land is subject to Environmental Planning Instruments.

Applicable Environmental Planning Instruments

- Port Botany and Port Kembla are governed by the [NSW State Environmental Planning Policy \(Transport and Infrastructure\) 2021](#) and existing development approvals.
- Enfield Intermodal Logistics Centre development is subject to [Strathfield Council development controls](#) an existing [Major Project Approval](#), and [NSW State Environmental Planning Policy \(Exempt and Complying Development Codes\) 2008](#).
- Cooks River Intermodal Terminal development is subject to [Inner West Council development controls](#) and [NSW State Environmental Planning Policy \(Exempt and Complying Development Codes\) 2008](#).

1.5. Strategic alignment

<p>Our Vision is to be a world class port and logistics manager driving sustainable growth.</p>		
<p>Our Master Plan outlines port trade growth and changes expected over the next 40 years. It targets a future where our ports and supply chains are sustainable and resilient, effectively supporting the growth and productivity of New South Wales.</p> <p>It sets out the actions NSW Ports and other stakeholders need to undertake to achieve this future.</p>	<p>Our Sustainability Strategy outlines our 4 strategic priorities:</p> <ul style="list-style-type: none"> • Steward forecast trade growth • Champion decarbonisation • Build resilience • Support thriving communities <p>It sets out initiatives and targets we will deliver to achieve sustainability outcomes under each priority.</p>	<p>Our Sustainability Policy outlines the sustainability principles that govern our decision making in the areas of:</p> <ul style="list-style-type: none"> • Environment • Social • Governance

2. Development Proposal Process

2.1. Roles and responsibilities

Tenants and Licence holders

Tenants and licencees of NSW Ports Land are responsible for ensuring they are operating within the conditions of their lease or licence. In addition, where premises are subject to existing conditions of a planning approval and/or environment protection licence, tenants and licencees are responsible for complying with those conditions. Those premises operating under an Environment Protection Licence (EPL) issued by the Environment Protection Agency (EPA) will be required to manage the environmental controls and reporting requirements under that licence.

NSW Ports

NSW Ports works in collaboration with many stakeholders to protect the health and safety of people, to maintain the natural environment and cultural heritage values and to ensure optimised functioning of the locations where we operate. It is important to note that each activity undertaken on [NSW Ports Land](#) is subject to specific obligations that are relevant to the activity and its impacts. These specific obligations may be documented as conditions within, for example, planning approvals, environment protection licences, leases or property licences and commercial agreements.

In addition, where NSW Ports has an approval role in leases and licences for works or developments, NSW Ports will require [Development Proposals](#) to comply with the Code. Compliance with the Code alone does not guarantee that consent to a Development Proposal will be granted. NSW Ports may grant or decline consent to Applicants in its absolute discretion.

At each review point in the process NSW Ports' subject matter specialists will review Development Proposals to assist the Applicant to achieve compliance with the Code. Applicants must consider and address the review comments provided by NSW Ports while retaining full responsibility and liability for the development.

2.2. Overview of steps

This section outlines the end-to-end process for acquiring approval from NSW Ports to undertake development on [NSW Ports Land](#) and to ensure compliance with the Code.

Throughout the process a minimum 2-week NSW Ports review period is required following each document submission by the [Applicant](#).

Phase	Steps	Responsibility
Inception	<p>Identify and understand the relevant NSW Ports Development Standards</p> <p>Section 3 of this document outlines the Sustainable Development Standards that concern most facilities and operations on NSW Ports Land. Standards are expressed as Objectives, Minimum Requirements and Best Practice. Applicant must prepare the Development Proposal to meet the Objectives by complying with the Minimum Requirements and are encouraged to align with Best Practice wherever possible. If there are circumstances where it is not relevant to comply with the Minimum Requirements, the Applicant must explain the reason and where relevant provide an alternative solution.</p>	Applicant
	<p>Submit preliminary Development Proposal</p> <p>Contact NSW Ports and provide the following information.</p> <ul style="list-style-type: none"> • Project description and objectives • Location and site details • Scope of works and delivery milestones • Cost estimates • Preliminary design drawings and reports • Confirmation of the relevant planning pathway by an appropriately qualified person 	Applicant
	<p>Review and provide feedback</p> <p>Subject matter specialists at NSW Ports review the preliminary Development Proposal. Consolidated feedback is provided, planning pathway confirmed and Sustainable Development Checklist issued.</p>	NSW Ports

Planning	Submit Development Proposal (including Sustainable Development Checklist)		Applicant
	Applicant must use the Sustainable Development Checklist to demonstrate they have met the Objectives by complying with the Minimum Requirements and are encouraged to align with Best Practice wherever possible. If there are circumstances where it is not relevant to comply with the Minimum Requirements, the Applicant must explain the reason and where relevant provide an alternative solution.		
	Review and provide feedback / seek planning consent		NSW Ports
	Subject matter specialists at NSW Ports review the Development Proposal, including the Sustainable Development Checklist . Consolidated feedback is provided and if required, additional documentation or clarifications sought.		
	Should a Complying Development Certificate (CDC), Development Application (DA), Modification Application (MOD), State Significant Development/Infrastructure Application (SSD/SSI) or a Building Information Certificate (BIC) be required for the project, formal Landowner's consent is required. NSW Ports obtains Landowner's consent on behalf of the Applicant. If Landowner's consent is obtained, a Permission to Lodge letter will be issued to the Applicant. If Landowner's consent is not obtained, feedback is provided to the Applicant to enable amendments to be made.		
Exempt Development	CDC / DA / SSD / SSI / BIC		
Demonstrate compliance with exempt development provisions set by the relevant planning legislation. Convey outcome to NSW Ports.	Lodge planning application with the relevant authority. Convey outcome to NSW Ports.	Applicant	
Once NSW Ports is satisfied that compliance with the Code, applicable planning legislation, lease requirements, licences and other relevant considerations have been demonstrated, a Permission to Proceed to Design & Construction phase letter will be issued to the Applicant.		NSW Ports	
Construction	Submit Design & Construction documentation		Applicant
	Applicant to submit all requested Design & Construction documentation, including a Construction Environmental Management Plan (CEMP) , in accordance with the relevant Sustainable Development Standards of the Code and the site-specific Project Approvals .		
	Review and provide feedback		NSW Ports
	Subject matter specialists at NSW Ports review the documentation. Consolidated feedback provided and if required additional documentation or clarifications sought. Once NSW Ports is satisfied that requirements have been met, a Permission to Commence Construction letter will be issued to the Applicant.		
Inspections		NSW Ports	
As per the conditions of lease, organisations that lease land from NSW Ports are directly responsible for the environmental and safety performance of the development. We work collaboratively with all organisations undertaking development on NSW Ports Land to promote good practices and ensure compliance with all relevant legislation and the Code. As such periodic inspections may be undertaken of development sites during construction.			
Completion of Construction		Applicant	
Advise NSW Ports that construction is complete.			
Operations	Submit Operation documentation (including Sustainable Development Checklist).		Applicant
	Applicant to submit requested operation documentation in accordance with the relevant Development Standards of the Code and the site-specific Project Approvals , including: <ul style="list-style-type: none"> Updated Sustainable Development Checklist to demonstrate that the development has successfully implemented the Sustainable Development Standards approved in the Development Proposal. Operational Environmental Management Plan (OEMP). 		

	<p>Review and provide feedback</p> <p>Subject matter specialists at NSW Ports review the documentation. Consolidated feedback is provided and if required, additional documentation or clarifications sought.</p> <p>Once NSW Ports is satisfied that requirements have been met, a Permission to Commence Operations letter will be issued to the Applicant</p>	NSW Ports
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Table 1 End-to-end process for undertaking development on NSW Ports Land.

3. Sustainable Development Standards

3.1. Buildings

Objectives

- A. All buildings are designed, built, and operated to minimise their impact on the environment and to be safe, healthy and comfortable places for people.

Minimum Requirements

1. All new major habitable buildings built on NSW Ports Land and major refurbishments are to be designed and built to comply with the Performance Requirements and General Requirements of the National Construction Code and to achieve the equivalent of a [4 Star Green Star Buildings rating](#). While Applicants are not necessarily required to apply for / obtain certification from the [Green Building Council of Australia](#), evidence / written assurance is required by NSW Ports to ensure that the building has been designed and built to meet an equivalent of a 4 Star Green Star Buildings rating.
2. Smaller buildings such as, but not limited to, used shipping container style offices, workshops, gatehouses, portable buildings, and sheds are not required to fulfill the Green Star requirement but must ensure they comply with the Performance Requirements and General Requirements of the National Construction Code.

Best Practice

3. Habitable buildings and smaller buildings looking to move beyond the Minimum Requirements should also incorporate:
 - a. passive design solutions such as use of light-coloured roofing materials / paint ([Figure 1](#)), use of building membranes or sarking that can reflect heat away from roof spaces, walls and floor, use of insulation, controlling the amount of heat that can enter a building through factors such as window opening size, the insulating performance (U-value) and effectiveness of the window and glazing systems (Solar Heat Gain Coefficient) and use of window films, use of internal blinds and external shading structures ([Figure 1](#)), use of natural ventilation in accordance with the latest version of [AS 1668.2](#).
 - b. Natural lighting solutions ([Figure 2](#)).
 - c. how the design will achieve good indoor air quality such as through avoidance of building materials that may contribute to poor internal air quality and use of air filters in all ventilation systems to remove particulate contamination.

Figure 1. Examples of light-coloured roofing and effective ventilation and external shade structure



Figure 2. Examples of natural and LED lighting



3.2. Energy Management & Greenhouse Gas Emissions

Objectives

- A. To reduce [upfront embodied carbon emissions](#).
- B. To reduce energy use and optimise the use of onsite renewable energy sources.
- C. To design for net zero [operational carbon emissions](#), wherever possible.

Minimum Requirements (upfront embodied carbon emissions)

1. Identify at least one pathway to reduce the upfront embodied carbon emissions. Examples include:
 - a. Reuse materials from decommissioned existing buildings and infrastructure where possible.
 - b. Specify products and materials with recycled content. Use [Environmental Product Declarations \(EPDs\)](#) to compare the embodied carbon of materials and select products with the lowest embodied carbon.
 - c. Select suppliers who have committed to reducing embodied carbon in their products or services and have the monitoring and measurement systems in place to prove it.
 - d. Employ prefabricated construction methods.
 - e. Use renewable energy or zero emission fuels during construction.

Best Practice (upfront embodied carbon emissions)

2. Projects looking to move beyond the Minimum Requirements should also:
 - a. provide an estimate of the upfront embodied carbon of the proposed design.
 - b. set minimum targets in partnership with Head Contractors to reduce the upfront embodied carbon emissions of the development project by an agreed percentage from the base case.
 - c. look for ways to work in partnership with suppliers to specify low carbon, recycled or remanufactured substitute materials derived from waste streams generated in NSW (see [NSW Environmental Protection Agency \(EPA\) website](#) for more information).

Minimum Requirements (operational carbon emissions)

3. Demonstrate how the project has been designed to minimise operational emissions, including through initiatives such as:
 - a. maximisation of energy efficiency by specifying use of LED bulbs ([Figure 2](#)) for lighting and automated lighting control systems such as occupant detection, local zone controls and daylight adjustment.
 - b. 5 star [energy efficient equipment and appliances](#)
 - c. elimination of fossil fuels through electrification of plant and equipment and/or use of zero or near zero emissions fuels where possible.
 - d. optimisation of onsite solar and/or use of renewable electricity ([Figure 3](#)).
 - e. sub metering for each major electrical use for energy and greenhouse gas measurement and management purposes.

Best Practice (operational carbon emissions)

4. Projects looking to move beyond the Minimum Requirements should be designed for net zero operational emissions including being powered by 100% renewable energy.

Figure 3. Examples of rooftop and shade structure onsite solar applications



3.3. Waste Management

Objectives

- A. To promote waste avoidance and reduction.
- B. To minimise quantity of waste sent to landfill and to prioritise reuse and recycling.
- C. Promote [circular economy](#) principles.
- D. Ensure appropriate treatment of hazardous waste.

Minimum Requirements (operational waste)

1. Specify a dedicated storage area for the collection and separation of waste generated on site that is designed to achieve maximum resource recovery, reuse, and recycling. This should be appropriately screened to enhance the visual amenity of the site whilst remaining accessible to users and service vehicles.
2. An assessment of the type and quantity of waste streams that are expected to be generated during operation is to be submitted together with the [Operational Environmental Management Plan \(OEMP\)](#) that, in accordance with the waste hierarchy at [Figure 4](#), addresses the following:
 - a. waste avoidance and minimisation strategies;
 - b. reuse, recycling and recovery of resources;
 - c. system for the treatment of hazardous waste;
 - d. targets (e.g. waste reduction, diversion from landfill, resource recovery) that are consistent with the objectives of the [NSW Waste and Sustainable Materials Strategy 2041](#).
 - e. the process for monitoring and reporting the quantity of resources recovered and disposed of.

Best Practice (operational waste)

3. Projects looking to move beyond the Minimum Requirements should also seek to achieve a minimum 80% resource recovery rate (by weight) across all identified waste streams.

Minimum Requirements (construction and demolition waste)

4. An assessment of the type and quantity of waste to be generated from the construction and demolition phase of the development is to be submitted together with the [Construction Environmental Management Plan \(CEMP\)](#) that, in accordance with the waste hierarchy at [Figure 4](#), addresses the following:
 - a. waste avoidance and minimisation strategies;
 - b. reuse, recycling and recovery of resources;
 - c. system for the treatment of hazardous waste;
 - d. targets (e.g. waste reduction, diversion from landfill, resource recovery) that are consistent with the objectives of the [NSW Waste and Sustainable Materials Strategy 2041](#).
 - e. the process for monitoring and reporting the quantity of resources recovered and disposed of.

Best Practice (construction and demolition waste)

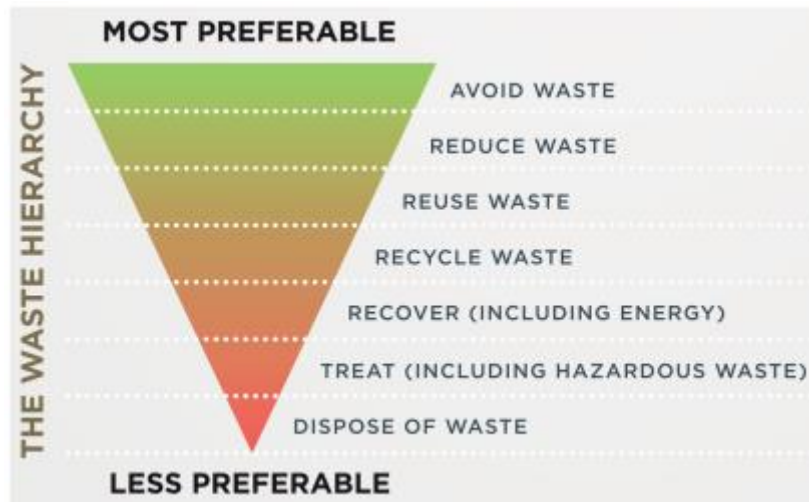
5. Projects looking to move beyond the Minimum Requirements should also seek to divert 90% of construction and demolition waste (by weight) from landfill.

Minimum Requirements (Contamination and Potential Acid Sulfate Soils (PASS))

6. An assessment of PASS present on site is to be undertaken. Where PASS could be encountered, mitigation measures are to be undertaken.
7. An assessment of potential and likelihood of soil and groundwater contamination is to be undertaken. Where a contamination hazard is deemed possible, approved mitigation / remediation measures are to be demonstrated. This is to be generally in

accordance with the [Environment Protection Authority guidelines](#) made or approved under the *Contaminated Land Management Act 1997*.

Figure 4. NSW EPA Waste Hierarchy (National Waste Policy, 2018)



3.4. Water Management

Objectives

- A. To protect the water quality of waterways adjacent to NSW Ports Land by managing the quality of stormwater runoff into these waters.
- B. To prevent biosecurity issues.
- C. To reduce total operational potable water consumption and improve water efficiency.
- D. *Port Botany only*: To ensure that new development within the Groundwater Management Zone associated with the LPG Storage Cavern does not adversely impact upon the existing Elgas LPG Storage Cavern (located in sandstone rock approximately 140m below ground).

Minimum Requirements (water quantity and quality)

1. The Applicant is to consider the impacts the development will have on existing flood behaviour of the surrounding area. Where applicable, the Applicant is to undertake a Flood Impact Assessment and/or Flood Risk Assessment. The Assessment should clearly demonstrate that the design and layout of leased / licenced areas, including the siting of buildings and the positioning of bunded areas and other infrastructure, has taken into consideration the need to provide unobstructed stormwater overland flow paths during design flood events, including the Probable Maximum Flood (PMF) event.
2. The Applicant is to consider the impacts the development will have on the existing stormwater system (piped, overland flow and open channel). Where applicable, the Applicant is to undertake a Stormwater Quantity Assessment. Where the development includes modification to existing permeable surfaces, surface grading, existing stormwater system or other development works that will impact the conveyance of stormwater runoff, the Applicant will be required as a minimum to assess the impacts that the development has on the Minor Event (e.g. the 5% Annual Exceedance Probability (AEP)) and the Major Event (e.g. the 1% AEP) for the existing and proposed conditions. The proposed conditions should include mitigations to ensure the proposed development does not worsen existing conditions and meets desired outcomes. The assessment should clearly demonstrate that the design of the development ensures that:
 - a. stormwater leaving the site will not cause erosion at the point of discharge. A particular area of note is [Environmentally Sensitive Areas \(Figure 7\)](#) such as Penrhyn Estuary and unlined creeks and channels such as Gurungaty Waterway.
 - b. water does not pond on site to prevent biosecurity and safety issues.
3. The Applicant is to consider the impacts the development will have on the water quality of stormwater leaving the site. Where applicable, the Applicant is to undertake a Stormwater Water Quality Assessment. The Assessment should clearly demonstrate that:
 - a. prior to starting and over the duration of the construction works, appropriately designed erosion and sediment control devices have been identified and will be maintained. These controls are to be removed and the area reinstated, following the completion of the construction works.
 - b. the [First Flush](#) from impervious areas is captured and treated to prevent pollutants from entering waterways adjacent to NSW Ports Land. Pollutants to be removed must include but are not limited to sediments, litter, rubbish, oils, greases, and other chemicals used/stored onsite.
 - c. stormwater runoff is managed appropriately in design and construction and in accordance with the aims and principles of [Water Sensitive Urban Design](#).
 - d. where water quality modelling is required to be undertaken to assess the nature and degree of water quality impacts from the development on receiving environments the modelling is to include:
 - i. characterisation of potential pollutants;
 - ii. evaluation of options to avoid discharge of polluted waters (e.g. capture, treat and re-use); and
 - iii. details of any proposed discharge points and the likely volume, quality and frequency of discharge.
 - e. outdoor areas subjected to trade waste services have been designed and installed in accordance with the relevant standards and requirements of responsible authorities (e.g. Sydney Water for Trade Wastewater Agreements).

- f. infrastructure and measures to contain spills and prevent them from discharging through the stormwater system have been identified and spill response procedures documented. Emergency spill kits are to be available on-site and staff are to be trained in the spill response procedures.

Enfield only

4. Demonstrate compliance with Conditions 2.28 – 2.33 of the [Enfield Intermodal Logistics Centre Project Approval](#).

Port Botany only

5. Any works involving excavation (of any kind) or works that are likely to create vibration impacts are required to comply with the Groundwater Management Zone (GMZ) Deed associated with the Elgas LPG Storage Cavern (the applicable area is illustrated at [Figure 5](#)). The requirements of the Deed are available on request from NSW Ports. Specifically, any development proposed in the 'GMZ' is required to specify the proposed construction methods; assess the likely impact on the water table; and assess the likely impact on the Elgas LPG Storage Development.

Minimum Requirements (operational water consumption)

6. For all new developments, the Applicant is to demonstrate that:
 - a. the highest rated [Water Efficiency Labelling and Standards \(WELS\)](#) scheme fixtures, fittings and appliances have been specified.
 - b. water sub meters for all major uses including, but not limited to, cooling towers, hot water systems and irrigation have been specified.
 - c. where applicable, rainwater will be collected and reused for appropriate site applications including, but not limited to, irrigation and vehicle cleaning.
 - d. any development involving a purpose-built wash bay facility includes a wash-water recycling system (design specifications to be provided).

Figure 5. Port Botany only: Groundwater Management Zone (GMZ) associated with the Elgas LPG Storage Cavern. (Shaded in red)



3.5. Air quality

Objectives

- A. To minimise emissions of air pollutants and odours from port operations and development.
- B. *Port Botany only*: To ensure emissions of smoke, dust, particulate matter, steam, or gas, do not adversely impact on the operations of Sydney Airport (Kingsford Smith Airport).

Minimum Requirements

1. The Applicant is to clearly demonstrate that:
 - a. an assessment of the operational air quality impacts within NSW Ports Land on sensitive receivers has been completed and measures to minimise emissions that adversely impact on local air quality have been specified.
 - b. site areas which are trafficked by vehicles and trucks are, as a minimum, to be sealed to minimise dust generation and maintained in good order so as to minimise potential future impacts. Dust suppression capability is to be provided for any unsealed operational areas on-site.
 - c. processes are in place to ensure that vehicles, plant, and equipment are maintained and operated in good working condition and are turned off when not in use to minimise emissions to air.
 - d. where fumigation of cargo is required, the air quality impacts, and health risks of fumigant emissions have been assessed and systems and procedures specified that minimise fumigant emissions (e.g. capture and recovery) and protect human health and the environment.
 - e. where bulk material handling / bulk material storage is required:
 - i. covered storage is specified for all hazardous cargoes and, where practicable, cargoes that are likely to generate dust.
 - ii. dust suppression spray systems are specified for any open stockpiles of potentially dusty materials.
 - iii. covered or enclosed conveyors with dust removal or suppression systems are specified at transfer points.
 - iv. delivery chutes are specified for ship loaders, as appropriate, to minimise dust.
2. Information regarding the products to be stored and/or handled on the premises is to be provided as well as the proposed storage area for such products. Products handled on site which have an offensive odour or have the potential to generate dust are to be handled in a closed circuit or sealed system.

Enfield only

3. Demonstrate compliance with Conditions 2.20 – 2.27 of the [Enfield Intermodal Logistics Centre Project Approval](#).

Port Botany only

4. Demonstrate that any emissions of smoke, dust, particulate matter, steam, or gas meet Civil Aviation Safety Authority (CASA) / Air Services Australia (ASA) requirements.

3.6. Noise, Vibration and Light

Objectives

- A. To minimise the noise, vibration and light impacts of development and operations occurring on NSW Ports Land on the surrounding environment, in particular residential areas, and other sensitive land uses.
- B. To ensure acceptable levels of noise, vibration and light for workers and visitors to NSW Ports Land.
- C. To ensure that all external lighting provides a safe and attractive environment that meets the operational requirements of NSW Ports Land.
- D. *Port Botany and Port Kembla only*: To ensure port developments do not interfere or impact the safe pilotage of ships or any navigation aids or leads.
- E. *Port Botany only*: To ensure lighting does not adversely impact on the operations of Sydney Airport (Kingsford Smith Airport).

Minimum Requirements

1. For all new developments, an assessment of noise, vibration and light emissions is to be undertaken that demonstrates that the Applicant has:
 - a. identified site relevant noise, vibration and light criteria based on the Environment Protection Authority guidelines, and identified all sources and levels of noise, vibration, and light emissions:
 - b. identified mitigation measures such as:
 - i. selecting and designing buildings, structures, equipment, vehicles, machinery, and operational processes to minimise the emission of noise and vibration.
 - ii. requiring the implementation of noise and vibration operational mitigation policies such as use of insulation and 'engine off' policies that ensures that noise and vibration emitted outside the site during operational hours are within acceptable limits based on Environment Protection Authority guidelines.
 - iii. locating noisy plant and equipment as far as possible from noise sensitive areas, optimising attenuation effects from topography, natural and purpose-built barriers.
 - iv. specifying lighting levels that are just sufficient to meet operational requirements and that meet the relevant Australian Standards.
 - v. positioning and operating lighting so as to avoid sky lighting, light spill outside the site boundary, distraction to vehicle drivers on internal or external roads, the occupants of adjoining sites or the users of the waterways and to prevent impacts or interference on navigation aids or leads. Measures include but are not limited to:
 - focussing lights downwards.
 - installing cut-offs or shields on lights.
 - minimising the light mast height.
 - using low mounting height poles to light non-terminal operational areas, including access / egress routes.
 - c. eliminated the use of audible movement alarms unless a safety risk assessment has been undertaken to recommend their use. If movement alarms are used, they must be white noise "quacker" type alarms.
 - d. provided appropriate lighting at key locations such as pedestrian paths, driveways, parking areas and building entries, so as to identify and provide safe access routes for both employees and visitors.

Enfield only

2. Demonstrated compliance with Conditions 2.13 – 2.19A and 2.46 of the [Enfield Intermodal Logistics Centre Project Approval](#).

Port Botany only

3. Demonstrate that:
 - a. all lighting meets Civil Aviation Safety Authority (CASA) / Air Services Australia (ASA) requirements. Note: Refer to the [CASA Manual of Standards Part 139 - Aerodromes](#).

- b. no fixed light results in light spill into Penrhyn Estuary or the Estuary flushing channel (Figure 6).
 - i. Low mounting height poles are to be used adjacent to the Estuary.
 - ii. Moving lights, such as vehicle headlights are to be screened, so they do not shine into Penrhyn Estuary.
 - iii. High level lighting on operational equipment is not to shine into Penrhyn Estuary.

Figure 6. Extent of Penrhyn Estuary and the Estuary flushing channel



3.7. Landscaping and Ecological Areas

Objectives

- A. To minimise any adverse impacts of development on [Environmentally Sensitive Areas](#) within and immediately adjacent to NSW Ports Land.
- B. To ensure that landscaped areas enhance the local biodiversity of the area, are low maintenance, durable and drought tolerant.
- C. To ensure that landscaping **does not compromise the safety and security** of NSW Ports Land and maintains opportunities for visual surveillance (especially along boundaries).

Minimum Requirements

1. An assessment of the potential impacts of the development on known habitat areas ([Figure 7](#)), including the identification of management measures to minimise impacts and disturbance.
2. All new developments are to include a Landscape Management Plan that addresses the requirements outlined below. Existing landscape areas must consider the below requirements and where not met need to be removed and replaced with landscaping that does. Landscape Management Plans should include, but are not limited to, the following:
 - a. a layered bedding pattern with a progression from smaller species at the front edge to larger species at the back (near the fence line, excluding trees).
 - b. planting that will achieve a minimum of 75% planting density once fully matured.
 - c. use of native plant species suited to site specific environmental conditions ([Table 2](#)) and, where possible and practical, locally sourced provenance stock. The minimum plant container sizes are to be as follows:
 - i. Trees – 25 litres;
 - ii. Accents – 5 litres; and
 - iii. Groundcovers – 100mm.
 - iv. consideration of the need to maintain passive surveillance in particular within car parks and along pedestrian paths.
 - d. a minimum of 12 months watering to ensure vegetation establishment, preferably with captured stormwater runoff / rainwater. Ongoing maintenance and management of landscaped areas is required to be undertaken including replacement of plant species if required.
 - e. mown grassed verges, adjoining landscaped strips, or otherwise, should consist of a commercially grown selected native or exotic turf cultivar with good coverage and quality, low maintenance, and drought-tolerant. Suggested species include Couch *Cynodon dactylon* or Zoysia *macrantha* (selected cultivars).
 - f. for landscaped areas that face roads external to the lease area, the Plan must demonstrate inclusion of the design and maintenance of a 5m (where possible) landscaped buffer strip within the lease area, facing the external roadway (excludes internal access roads) ([Figure 8](#)). The buffer strip is to have:
 - i. landscaping in front of security fences that face the external road.
 - ii. flush, durable and recyclable edging.
 - iii. a consistent planting pattern of native plant species including:
 - layered and banded ground stratum planting (up to 0.5 – 0.7m high),
 - grouped accent planting with large perennials (up to 1.4m high),
 - clustered and individual small to medium tree planting up to 8 – 12m in height (subject to security considerations)
 - clusters of tree plantings to have a maximum spacing of 15m between groups.
 - iv. a high level of security and passive surveillance by ensuring:
 - no dense, mid-stratum shrub planting (i.e. up to 3m in height),
 - no tree planting within 2.5m of fence line, and

- under prune trees to minimum 2.5m above ground level and maintain adequate branch clearance from the security fencing.
- v. for landscaped areas that are considered to be a potential fire risk (e.g., bulk liquids berth, LPG storage areas and along pipeline corridors) and for non-active water fronts, the buffer strip is to be designed as per the requirements at 3.7.2 (f) but have a consistent planting pattern of native species with a low fire risk (e.g. low combustion or fire retardant properties) ([Figure 9](#)) including:
 - layered and banded ground stratum planting (0.4 – 0.7m high),
 - grouped accent planting with large perennials (up to 1.4m high),

Port Botany only

3. The removal of vegetation in the Port Botany precinct is subject to established mitigation measures under [Part 5 of the Environmental Planning and Assessment Act \(1979\)](#). Contact NSW Ports for details of the requirements. The removal of vegetation in Port Botany must comply with the approved mitigation measures.

Figure 7. Environmentally Sensitive Areas

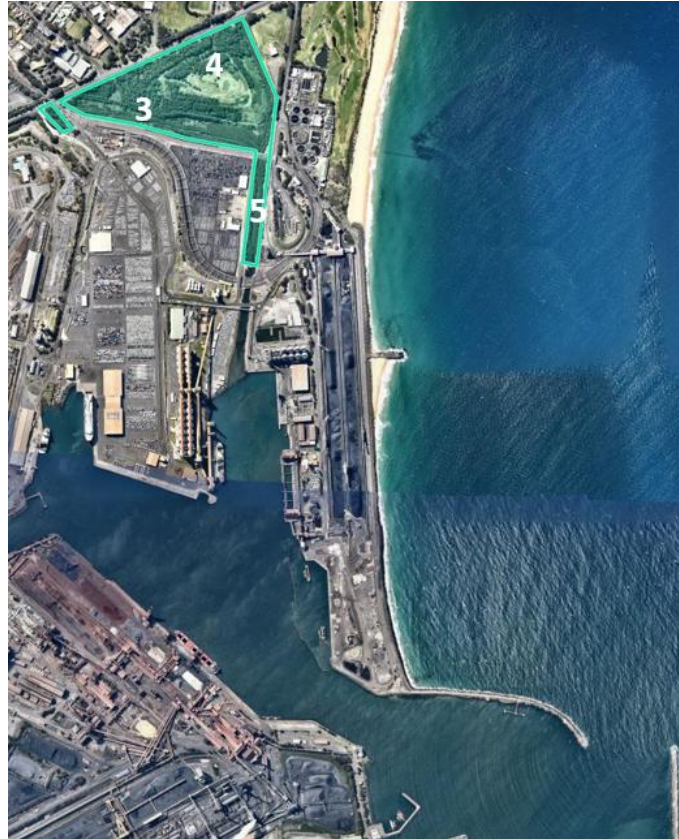
Port Botany:

1. Penrhyn Estuary - Locally significant habitat for migratory shorebirds and saltmarsh (maintained by PANSW)
2. Foreshore Beach and surrounds - Habitat for seagrass colonies & public recreation area



Port Kembla Inner Harbour

- 3. Tom Thumb Lagoon – Coastal saltmarsh, mangroves, swamp oak forest. Ecological restoration site.
- 4. Greenhouse Park – Coastal vegetation communities, potential Green and Golden Bell Frog (GGBF) habitat. Ecological restoration site.
- 5. Gurungatty Waterway – Mangroves, riparian vegetation, potential GGBF movement corridor.



Port Kembla Outer Harbour

- 6. South Yard Drain – potential GGBF habitat
- 7. Steelhaven Frog Ponds – GGBF habitat
- 8. CRM Drain – potential GGBF habitat
- 9. Salty Creek Corridor – Coastal saltmarsh, potential GGBF habitat
- 10. Old Port Rd Frog Ponds – Potential GGBF habitat
- 11. Darcy Rd Frog Ponds – Potential GGBF habitat
- 12. Darcy Rd Drain Corridor – potential GGBF habitat
- 13. Morgan Cement Frog Ponds – GGBF habitat
- 14. Battery Point – Aboriginal shell middens, GGBF habitat



Enfield Intermodal Logistics Centre

- 15. Enfield Frog Ponds – potential GGBF habitat
- 16. Juno Parad Frog Pond habitat area – potential GGBF habitat
- 17. RailCorp Frog Pond – potential GGBF habitat
- 18. Eastern Ecological area



Figure 8. Typical cross section through road reserve landscaped areas

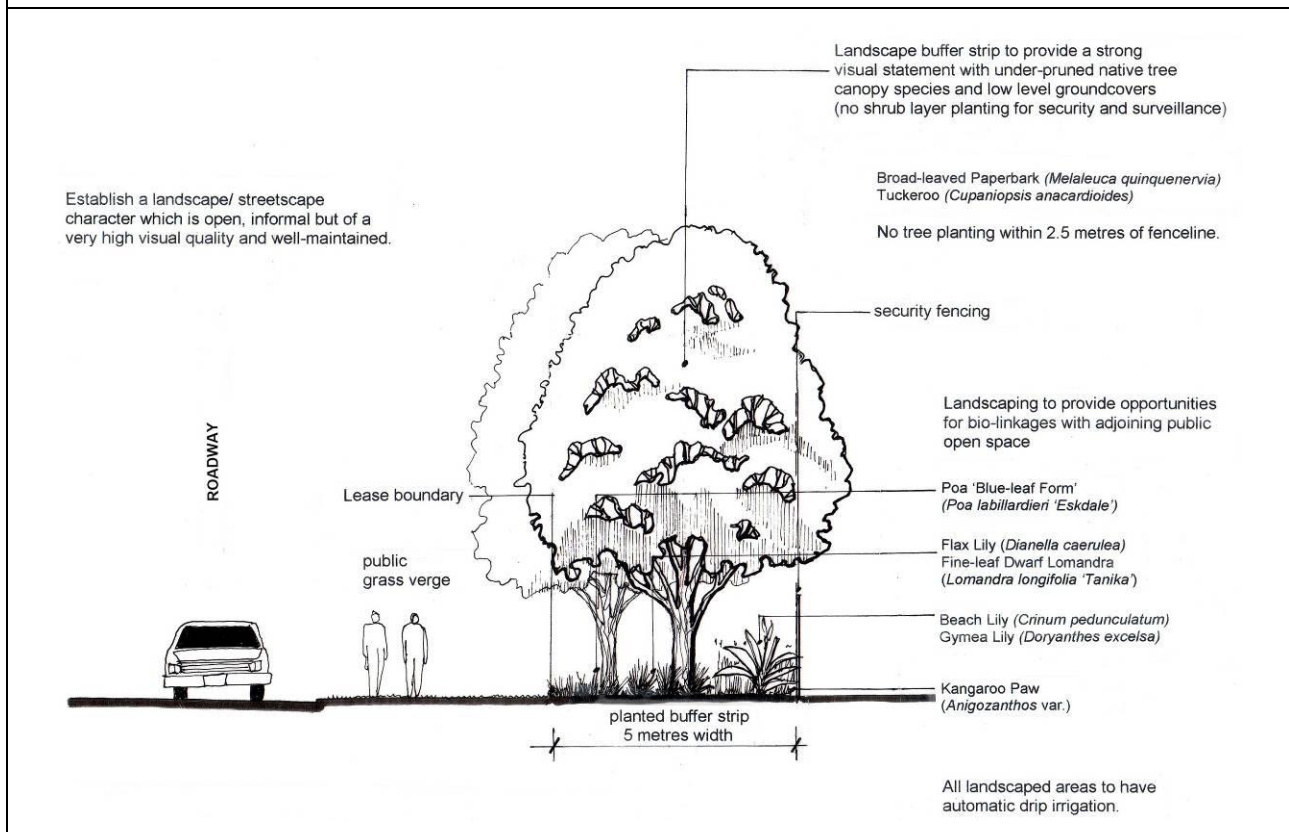


Figure 9. Typical cross section through potential fire risk and non-active water front landscaped areas

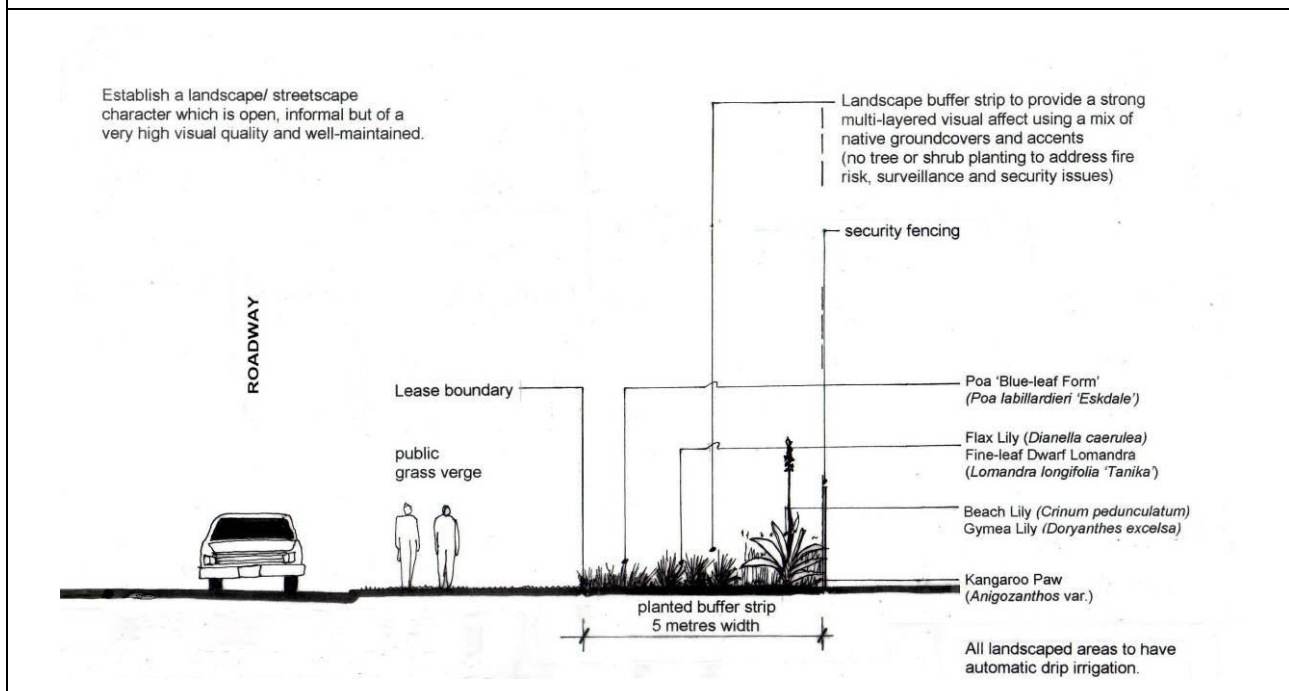


Table 2 Recommended plant species for landscaping, by location

		BOTANICAL NAME	COMMON NAME	
Port Botany	Trees	<i>Acmena smithii</i>	Lilly Pilly	
		<i>Angophora costata</i>	Sydney Red Gum	
		<i>Banksia integrifolia</i>	Coast Banksia	
		<i>Cupaniopsis anarcardiodes</i>	Tuckereroo	
		<i>Elaeocarpus reticulatus</i>	Blueberry Ash	
		<i>Eucalyptus haemastoma</i>	Broad-leaved Scribbly Gum	
		<i>Eucalyptus piperita</i>	Sydney Peppermint	
		<i>Eucalyptus botryoides</i>	Bangalay	
	Accents	<i>Leptospermum laevigatum</i>	Coast Teatree	
		<i>Correa alba</i>	White correa	
		<i>Banksia serrata</i>	Old-man Banksia	
		<i>Banksia ericifolia</i>	Heath-leaved Banksia	
		<i>Acacia ulicifolia</i>	Prickly Moses	
	Shrubs	<i>Westringia fruticosa</i>	Native rosemary	
		<i>Pittosporum undulatum</i>	Sweet Pittosporum	
		<i>Dodonaea triquetra</i>	Large-leaf hop bush	
		<i>Leucopogon ericoides</i>	Pink Beard-Heath	
		<i>Acacia suaveolens</i>	Sweet Wattle	
		<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	
		<i>Themeda australis</i>	Kangaroo Grass	
		<i>Carpobrotus glaucescens</i>	Pigface	
<i>Microlaena stipoides</i> var. <i>stipoides</i>		Weeping grass		
Port Kembla	Trees	<i>Cupaniopsis anacardioides</i>	Tuckereroo	
		<i>Banksia integrifolia</i>	Coast Banksia	
		<i>Syzygium smithii</i>	Lilly Pilly	
	Accents	<i>Grevillea oleoides</i>	Red Spider Grevillea	
		<i>Indigofera australis</i>	Australian indigo	
		<i>Crinum pedunculatum</i>	Beach Lily	
	Shrubs	<i>Dianella caerulea</i>	Flax Lily	
		<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	
		<i>Poa labillardieri</i> var. <i>labillardieri</i>	Tussock Grass	
		<i>Scaevola calendulacea</i>	Dune Fan Flower	
		<i>Carpobrotus glaucescens</i>	Pigface	
	Enfield Intermodal Logistics Centre	Trees	<i>Acer palmatum</i>	Japanese Maple
			<i>Cupaniopsis anarcardiodes</i>	Tuckereroo
<i>Magnolia x soulangeana</i>			Saucer Magnolia	
<i>Tristaniopsis laurina</i> 'Luscious'			Luscious Water Gum	
<i>Backhousia citriodora</i>			Lemon Myrtle	
Accents		<i>Westringia fruticosa</i>	Coastal Rosemary	
		<i>Westringia fruticosa</i> 'Jervis Gem'	Jervis Gem Coastal Rosemary	
		<i>Doryanthes excelsa</i>	Gynea Lily	
Shrubs		<i>Chrysocephalum apiculatum</i>	Yellow Buttons	
		<i>Hibbertia scandens</i>	Golden Guinea Flower	
		<i>Plectranthus nico</i>	Swedish Ivy	
		<i>Pultanaea villosa</i>	Hairy Bush Pe	
		<i>Lomandra longifolia</i>	Spiny Head Mat Rush	
		<i>Dianella caerulea</i>	Flax Lily	
		<i>Acacia myrtifolia</i>	Myrtle Wattle	
<i>Lomandra tanika</i>	Mat Rush			

3.8. Risk, Safety and Hazard Management

Objectives

- A. To provide a safe working environment for all users and visitors associated with the operation of facilities on NSW Ports Land.
- B. To ensure the design and layout of structures and equipment within common user areas considers safety.
- C. To ensure that infrastructure is designed and located so as to minimise risk to surrounding land uses and the environment both within NSW Ports Land and adjacent land uses.
- D. To provide specific protection for chemical, bulk liquid, and dry bulk product storage areas so as to minimise the risk of product spills entering waterways adjacent to NSW Ports Land.
- E. To ensure the risks related to a changing climate are well understood and managed through a climate mitigation and adaptation plan.

Port Botany only

- F. To minimise the attraction of bird species that pose potential risks and hazards to airport operations.
- G. To minimise impacts on shorebirds using Penrhyn Estuary from port operations.
- H. To minimise barriers to shorebird access into Penrhyn Estuary.

Minimum Requirements (general)

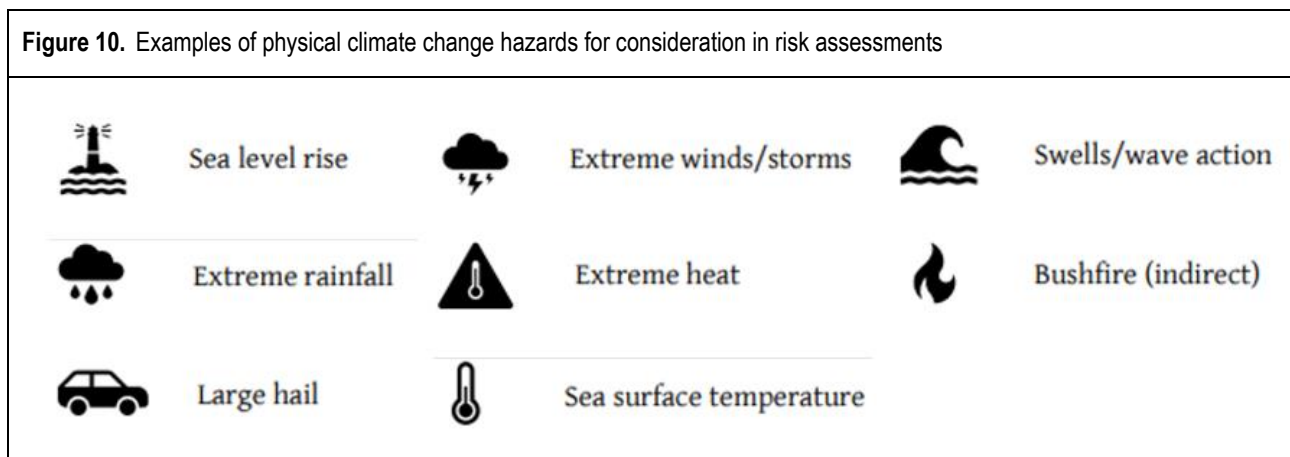
1. All new development on NSW Ports Land is required to undergo a risk assessment. The risk assessment is to be submitted as part of the application for development and is to include the construction, operation, and maintenance phases. The assessment is to demonstrate that the development:
 - a. has considered the [Guidance on the Principles of Safe Design for Work](#) issued by the Australian Safety and Compensation Council (ASCC).
 - b. has considered relevant local climate related physical risks including, but not limited to, those arising from the hazards described in [Figure 10](#) below.
 - c. will identify and implement risk reduction, risk mitigation, risk adaptation and safety management measures as required.

Port Botany only

- d. will not contribute to any increase in cumulative risk as shown in Figure 2 of the [Port Botany Land Use Safety Study Overview Report 1996 \(Overview Report\)](#).
- e. will not result in any propagation of risks to neighbouring facilities.
- f. will not expose people (including both construction and operational workers) to societal risk that exceeds the ALARP band shown in Figure 9 of the *Overview Report*.

Enfield only

Demonstrate compliance with Conditions 2.49 – 2.51A of the [Enfield Intermodal Logistics Centre Project Approval](#).



Minimum Requirements (potentially hazardous developments)

2. All proposals for new or expanded potentially hazardous developments are required to undergo a risk assessment. The risk assessment is to include the implementation, operation, and maintenance phases. The assessment is to demonstrate:
 - a. that all foreseeable hazards that may arise from a development, that have a potential to harm the health and safety of any person, the environment, or impact the safety of buildings, equipment, plant and facilities have been clearly identified.
 - b. that potential for propagation of hazardous incidents to the neighbouring facilities is identified and is, in accordance with the “As Low As Reasonably Practicable” (ALARP) principle.
 - c. that the risks associated with the identified hazards at the development have been appropriately analysed and assessed.
 - d. that the proposed development will not contribute to any increase in the cumulative risk (individual and societal risk) beyond the levels shown in Figures 2 and 9 of the [Port Botany Land Use Safety Study Overview Report 1996 \(Overview Report\)](#).
 - e. that the assessed risks comply with the relevant risk criteria published by the regulatory authorities.
 - f. that all identified risks will be controlled and minimised by protection and mitigation.
 - g. that incidents at hazardous facilities will not impact on the use or operation of adjacent land, including NSW Ports’ common areas (e.g. roadways and pipeline corridors).

Note: the above requirement may be incorporated within, or as a supplement to, the risk assessment described in the general requirements section earlier in this chapter.

3. The risk assessment for the proposed development is to include the quantitative analysis of incident impacts relating to consequence severity and risk and include risk contours. The impacts are not to exceed acceptable published risk criteria.
4. Minimum separation distances required to ‘protected places’ under the relevant Australian Standard must be complied with.
5. The industrial premises risk contour for the development (including existing site development) must remain within the lease boundary.
6. All development is required to undertake a Fire Safety Study to identify the necessary fire protection equipment to be installed or provided as part of the development and must take into consideration the demands of existing infrastructure and any current and / or known future users of the Precinct.
7. A site Safety and Emergency Management Plan is to be prepared which takes into consideration any existing precinct plan(s) and adjoining land uses.
8. For any structure (permanent or temporary) located within common user areas a safety in design assessment is required to be undertaken which considers matters such as, but not limited to, the location of structures along the wharf, clearance heights of loading and unloading equipment, traffic management, signage, worker, and pedestrian safety.
9. Areas where petroleum, petroleum products, petro-chemicals and other liquid chemicals are handled or stored are required to be bunded in accordance with the relevant standards. Where pipeline or hose connections and disconnections are made for operational activities, these areas are also required to be bunded.
10. The area within all bunded enclosures is to be impervious so as to prevent the percolation of any spilled materials through the paving into the underlying soil. The surface of the paving in bunded areas shall be graded so as to permit the flow of surface water to the drainage system via a treatment system. This surface shall be maintained to prevent ponding. The development is to include bund management systems and procedures which prevent overflows and leaks from the bund.
11. All stormwater from bunded areas shall be directed through a treatment system located outside the bunded area.
12. Areas used for loading of road tankers, refuelling or other handling operations are to have ‘roll-over’ bunding and impervious paving so as to prevent the release of any spilled materials into the stormwater and/or through the paving into the underlying soil. The paving and any jointing materials to be used shall be resistant both to heat and the corrosive effects of the range of the products to be handled. All drainage from these areas is to be directed to a drainage system via a treatment system.

Minimum Requirements (Bulk liquid storage facilities)

13. Separation distances within and between bulk liquid storage hazardous facilities (i.e. separation distances between facilities on the subject site or adjoining sites) is to be provided in accordance with the relevant Australian Standard(s) or the criteria listed in this section of the Code, whichever is the greater.

14. A perimeter roadway is to be provided around all bulk liquid storage areas within the lease area. A bulk liquid storage area consists of bulk liquid tanks contained within a bunded area. [Figure 11](#) shows the minimum acceptable roadway layout around a bulk liquids storage area. The perimeter roadway is to be provided with the following:
- 6m clear road width;
 - Corners designed to accommodate the turning of emergency vehicles / trucks;
 - Connected to the main roadway at the front of the site, either directly or by an internal site road no less than 6m wide; and
 - Unobstructed access along the full length of the road.
15. Where a bulk liquid storage facility operates a road tanker filling area within the lease area, the road tanker filling area shall be located wholly off any access road that passes the filling area to allow for safe vehicle access within the site. [Figure 12](#) provides an example of a bulk liquids tanker filling area located adjacent to an access road. The filling area shall be located so that no part of a truck in the filling bay extends into the access road.

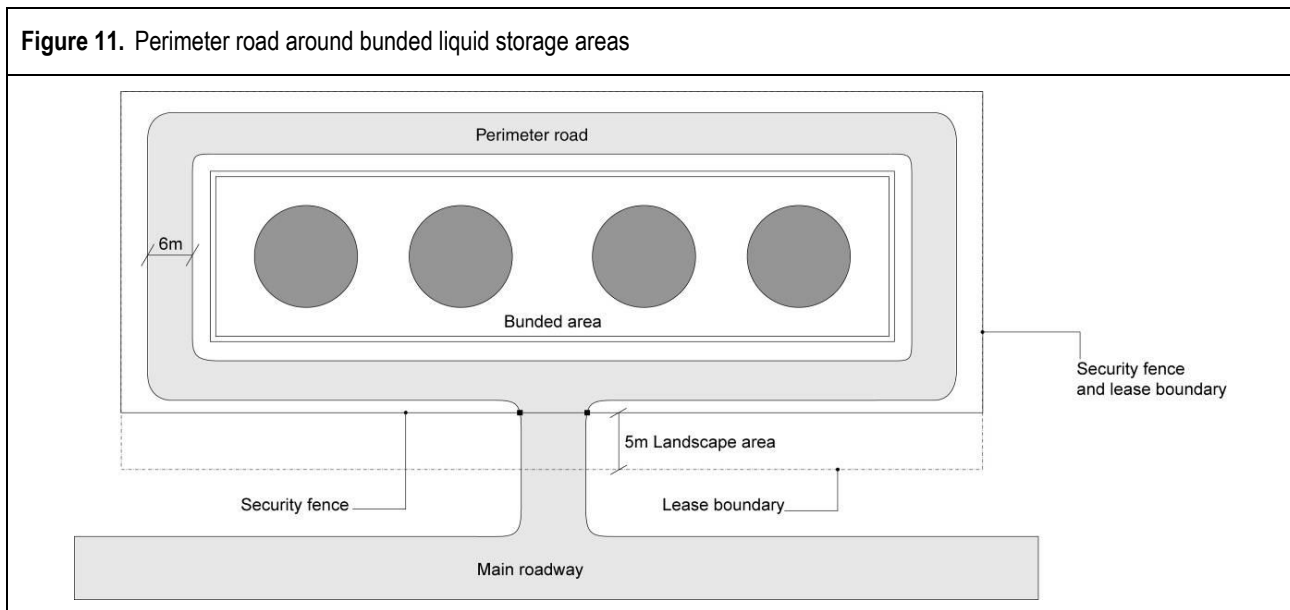
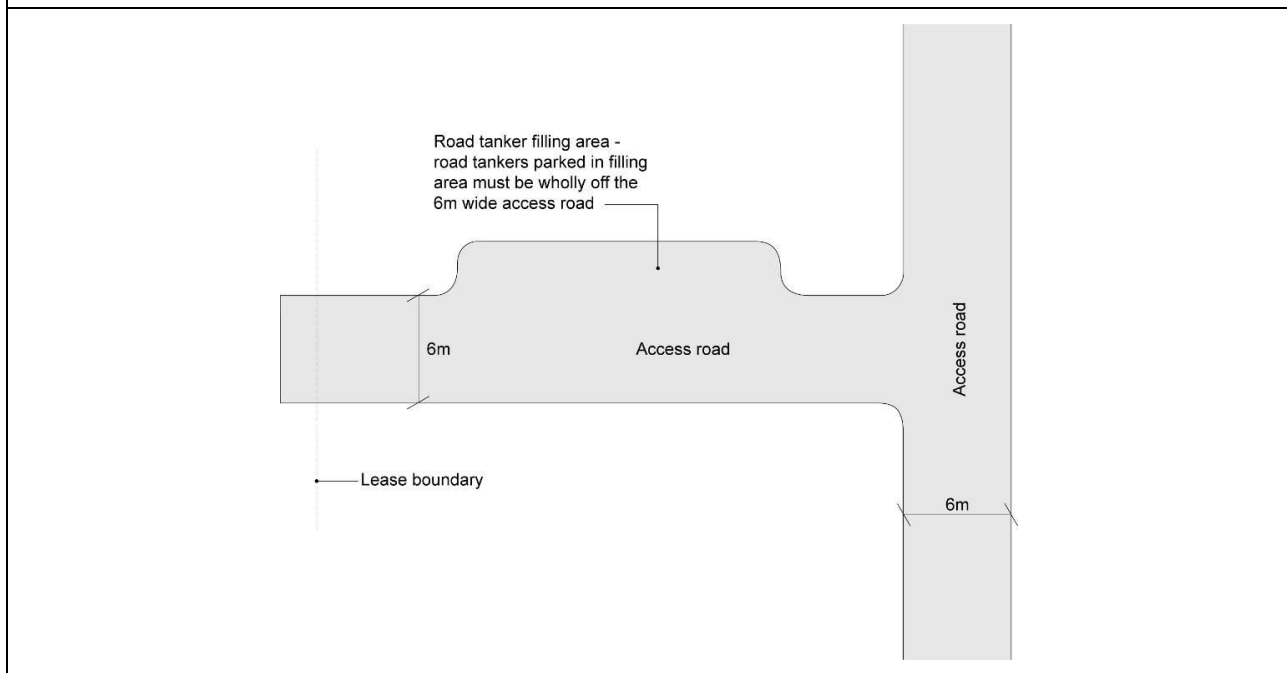


Figure 12. Tanker filling area adjacent to an access road at a bulk liquid storage facility

Minimum Requirements (Pipelines)

16. All pipelines shall be designed, constructed, operated and maintained in accordance with [AS 2885 Pipelines – gas and liquid petroleum](#) or an alternative standard that is justified by the proponent and approved by NSW Ports.
17. All pipelines proposed within either the Port Botany or Port Kembla sites are to be located in the following manner:
 - a. Exposed above ground level or in an open culvert lined with impermeable material so as to prevent the percolation of any spilled materials through the paving into the underlying ground. The paving and any jointing materials to be used shall be resistant both to heat and the corrosive effects of the range of the products to be transported in the pipeline.
 - b. Underground pipelines are to be avoided unless absolutely necessary;
 - c. Where underground pipelines are used they are to be installed with a leak detection system (e.g. differential flow device, inventory measurement, inground sampling points, etc.);
 - d. Underground pipelines are to be suitably protected against corrosion, considering (but not limited to) the following:
 - i. expected lifetime of the pipeline;
 - ii. soil conditions;
 - iii. potential acid sulfate soils; and
 - iv. water table level.
18. Details of the leak detection system and corrosion protection are to be provided in the risk assessment documentation.
19. All above ground bolted flanged joints, associated with the pipeline outside the main storage bund area, are to be provided with the following:
 - a. A bunded pit to retain any product leaks;
 - b. Protection to prevent leaks from flanges and joints spraying beyond the confines of the pit; and
 - c. Leak detection within the pit and an alarm system to notify of potential flange/joint leaks.
20. It is noted that the pit may require a cover to prevent the ingress of rainwater causing false leak detection alarms.

Port Botany only

21. Pipelines required to be installed on the Port Botany leased area (other than pipelines that are within a tenant's premises) are to be located within a Port Botany pipeline corridor ([Figure 13](#)).

22. Any new valves at the Bulk Liquids Berth must include remote operated emergency shutdown valves with such valves to be located at the shore manifold. The locations of activation points for the remote operated valves must, as a minimum, be able to be activated from the operator's emergency shutdown system during ship discharges as well as from the Bulk Liquids Berth office.

Minimum Requirements (Dry Bulk Cargo)

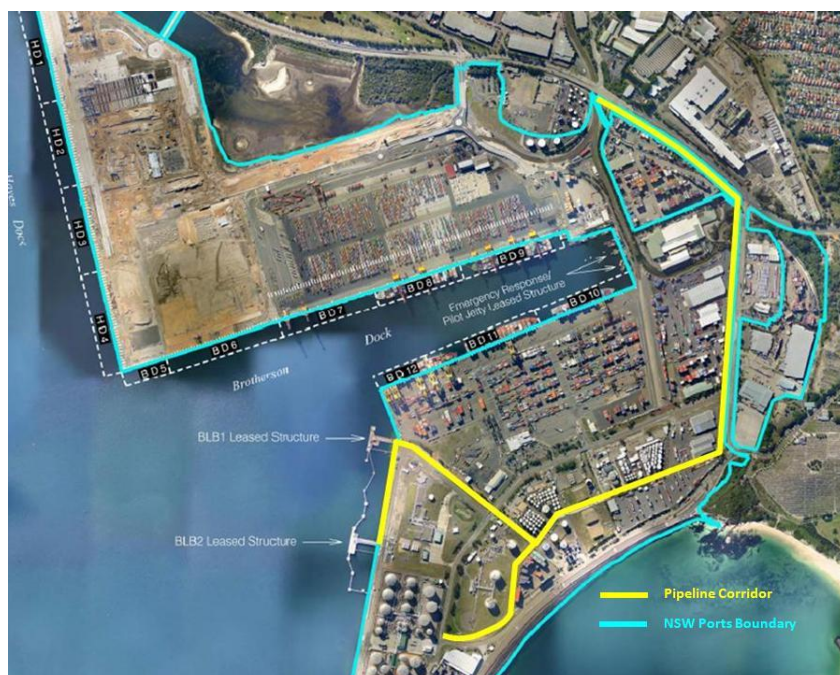
For dry bulk cargo (e.g. mineral concentrates, grain, coal, clinker) the development is to demonstrate:

23. Land transport to/from the port must be undertaken in manner to prevent spillage, odours, or dust emissions.
24. All dry bulk cargo handling and storage must be managed to prevent dispersion of the cargo from the site (e.g. through dust or odour emissions, stormwater run-off).
25. Conveyor systems must be enclosed with suitably designed transfer points to prevent dust and spillage.
26. Measures to contain spills and prevent them from contaminating soil, waterways and/or groundwater are to be identified and spill response procedures documented.

Minimum Requirements (Port Botany only)

27. An assessment of aspects of the proposed development which could attract bird species that may pose a hazard to airport operations is to be undertaken by the Applicant. The assessment is to include any mitigation measures to be implemented. Aspects to be considered include potential for roosting on roofs, light poles, site areas having low levels of activity, areas where water may pond, potential feeding areas for birds such as sediments, or rubbish collection areas, etc.
28. Height restrictions in [Figure 18](#) are required to be complied with unless a shorebird impact assessment is undertaken which confirms that there is no adverse impact on shorebird access or use of Penrhyn Estuary.
29. No port operations (except for road access / egress) are permitted within 20m of the western edge of Penrhyn Estuary. Refer to [Figure 18](#).
30. Container stacks, buildings and tanks are to be set back at least 100m from the western edge of Penrhyn Estuary and 64m from the southern edge of Penrhyn Estuary.

Figure 13. Port Botany pipeline corridor



3.9. Visual amenity

Objectives

- A. To enhance the visual amenity of the site through the quality design of buildings and structures, and the use of materials and colour which reinforce the industrial and maritime nature of NSW Ports Land.
- B. To add visual interest and to develop appropriate built structures which complement and contribute to the efficient functioning of NSW Ports Land.

Minimum Requirements

1. Buildings are to be oriented towards the main road frontage. The office component of a building is to address the street so as to provide an attractive frontage, easily identifiable building entry and the potential for surveillance of the street.
2. Buildings should be designed so as to minimise the perception of bulk and scale ([Figure 14](#)) from main road frontages and surrounding prominent view locations by:
 - a. the articulation of building facades where buildings front a main road frontage;
 - b. varying façade alignments and height;
 - c. breaking up of facades with windows and the use of decorative features, cantilevered elements and the like; and
 - d. varying materials and colours used.
3. Air-conditioning units, telecommunications equipment or mechanical plant are to be concealed within the building or with screened enclosures to minimise their visibility from main port road frontages.
4. Buildings, in particular large buildings, are to incorporate muted recessive colours with material and / or tonal colour variation used to visually break the mass of the building. Lighter shades should be used for larger wall areas and structures, with darker shades used as highlights. Highlight colours should be used to articulate architectural features and the like. See [Figure 17](#) for indicative colour palettes and refer to *Australian Standard AS 2700 Colour Standards for General Purposes* for colour code details.
5. Buildings, silos and covered loading areas are to be integrated into a consistent design solution, which includes the use of a complementary palette of colours and materials, to promote the type, location and function of the tenancy ([Figure 15](#)).
6. The visibility of cranes, conveyors, pipelines, hoppers, rail mounted gantries and silos is to be reinforced through the use of highlight colour and / or pattern designs and innovative structural design. The colour selected by the tenant is to be submitted as part of the Development Proposal. ([Figure 16](#)).
7. Materials and colours for buildings and roofs are to minimise reflectivity. All glazing is to have a reflectivity coefficient of less than 20%.
8. Lighter colours on light poles greater than 15 metres in height should be avoided in favour of darker, less reflective colours.
9. All tanks are to be painted white or light grey.

Port Botany only

10. The maximum height of all building structures and tanks is not to exceed the maximum building heights illustrated at [Figure 18](#). The maximum height is measured to the highest point of a building from Zero Fort Denison Tide Gauge (ZFDTG). Note: ZFDTG = AHD + 0.925m. Height of the building structures and tanks includes plant and lift overruns, but excludes communication devices, antennae, satellite dishes, flagpoles, light poles and the like.
11. The maximum heights at [Figure 18](#) do not apply to port terminal operating equipment such as cranes. These elements may be any height to achieve efficient operational capability, subject to obtaining relevant approvals including approvals under the [Airports Act 1996](#) (Cth) and [Civil Aviation Act 1988](#) (Cth).
12. Container stacking height limitations may be applicable to sites in Port Botany under existing development approvals.

Figure 14. Examples of the use of treatments to minimise the perception of bulk and scale.



Figure 15. Examples of the use of consistent design solution to integrate buildings, silos and covered areas



Figure 16. Examples of use of colour for ancillary structures

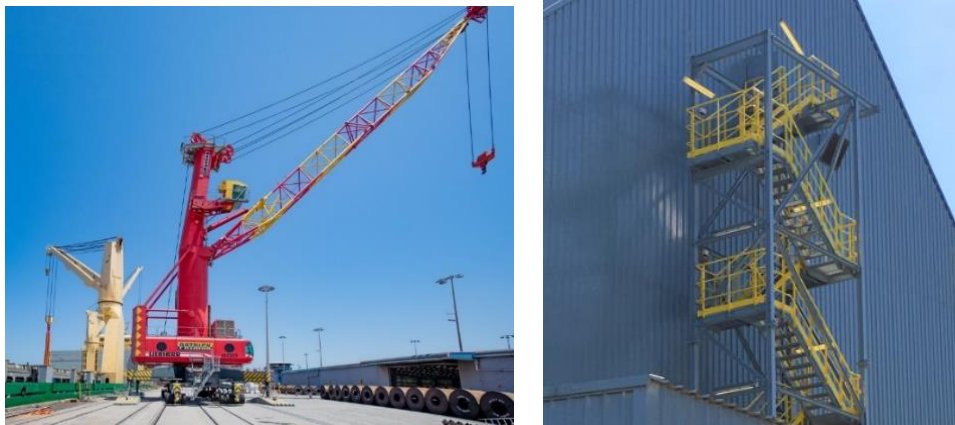
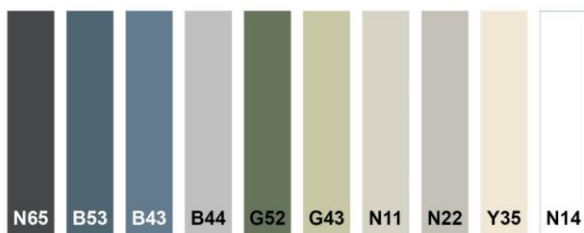


Figure 17. Indicative colour palette

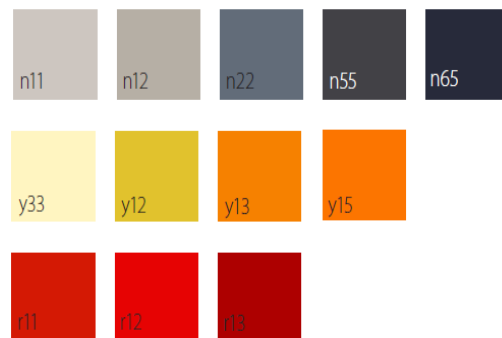
Port Kembla main building indicative colour palette



Port Kembla highlight indicative colour palette



Port Botany indicative colour palette



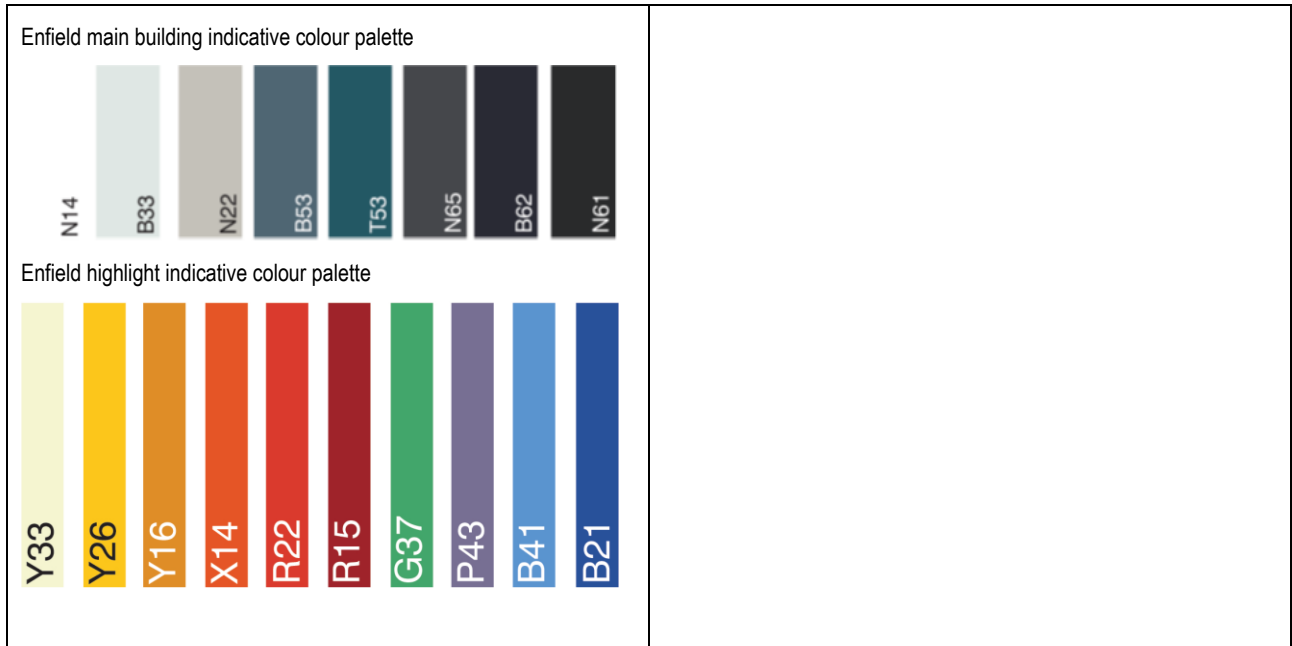


Figure 18. Port Botany maximum heights for building structures and tanks (Zero Fort Denison Tide Guage (ZFDTG)).



Best Practice

13. Expressive and distinctive roof forms are encouraged. Roof forms which express the industrial and maritime character of NSW Ports Land should be used. Flat roof structures should be avoided. (Figure 19).
14. Where possible, windows should be sited in locations which provide overlooking opportunities to adjacent roads, walkways, and open space areas (i.e. passive surveillance opportunities).
15. The use of external structural framing systems, sun shading devices and patterned screens are encouraged to create visual interest and reduce the scale of the building form. Different colours and materials to the primary elevation material should be selected. (Figure 20).
16. As noted in 3.9.9, all tanks are to be painted white or light grey. Appropriate artwork features (Figure 21) are encouraged on tank elevations visible from common user roads and public viewing locations. The proposed artwork selected by the tenant is to be submitted as part of the application for development.

Enfield only

17. Demonstrate compliance with Conditions 1.6 – 1.11 and 2.45 – 2.47 of the [Enfield Intermodal Logistics Centre Project Approval](#).
18. All development should consider the installation of public art within non-operational areas, particularly in spaces that are highly visible from publicly accessible areas within the Enfield ILC and to highlight entry / exit points (Figure 22). Any public art should consider maintenance and durability requirements so as to ensure the longevity of the installation.
19. Environmental mitigation infrastructure (e.g. visual screening, noise walls, etc) should be designed to create visual interest (Figure 22).

Figure 19. Examples of the use of expressive and distinctive roof forms



Figure 20. Examples of the use of external structural framing systems or changes in colour and materials

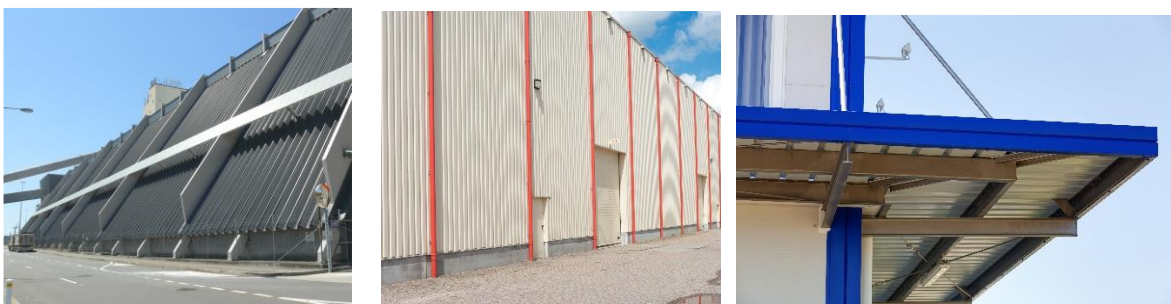


Figure 21. Example of the use of appropriate artwork features

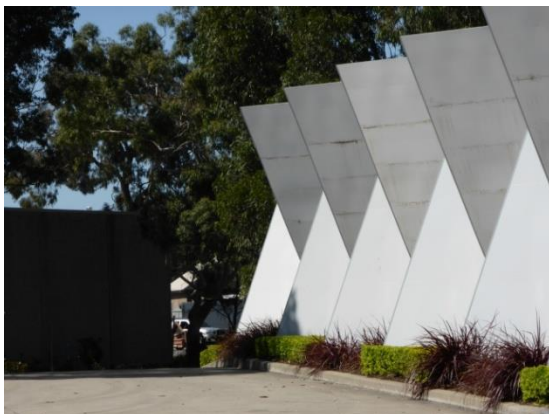


Figure 22. Enfield only: Examples of public art and their purpose

Highlighting entry / exit point



Providing visual screening or noise mitigation



3.10. Traffic Management

Objectives

- A. To encourage the use of sustainable transport modes to move freight to and from NSW Ports Land.
- B. To ensure that all access, parking and loading facilities and the traffic generated by development do not impact upon the operation of NSW Ports Land or the surrounding road network.
- C. To ensure that all leased areas have adequate and appropriately located driveway access, on-site parking and queuing areas, vehicle manoeuvring space and loading areas.
- D. To prevent queuing of vehicles outside leased areas.
- E. To ensure that the design of access parking and loading facilities are efficient, safe, convenient and do not detract from the visual amenity of NSW Ports Land.
- F. To provide convenient and safe pedestrian and bicycle access and bicycle parking facilities within leased areas.

Minimum Requirements

1. Assess both on and off-site traffic impacts and prepare a Traffic Management Plan that is compliant with relevant NSW Ports Overarching Traffic Management Plans (if applicable). The Traffic Management Plan is to clearly demonstrate that:
 - a. procedures are in place to ensure all vehicles enter and exit the site in a forward direction.
 - b. all site vehicular access points and paths have been located and designed to avoid conflicts between pedestrians, light vehicles, and truck movements. Designated pedestrian paths should be clearly delineated from the site's internal vehicular roads and parking areas, by means of a perceivable change in material and/or colour.
 - c. terminal facilities have provided separate access points to an adjoining roadway for light vehicles and trucks.
 - d. all proposed internal roads, pavement areas, driveways and crossovers, and car parking areas have been appropriately designed and constructed for the expected intensity of use.
 - e. all employee and visitor parking is accommodated within the leased area. Parking areas (i.e., parking bays and loading areas) are to:
 - i. be designed in accordance with [Australian Standard AS 1428:1-4 Design for Access and Mobility](#), [Australian Standard AS 2890.1 Car Parking Facilities](#) and [Australian Standard AS 2890.2 Commercial Vehicle Facilities](#).
 - ii. provide a minimum rate of one (1) parking space per staff member and contractor plus 10% (calculation to be based on the maximum number of staff members and / or contractors on site at any one time, which is typically during a shift change).
 - iii. provide for at least two (2) visitor parking spaces. For those sites with less than 10 staff members and contractors provide at least one (1) visitor parking space.
 - iv. provide for at least one (1) mobility impaired parking space, to be located adjacent to building entries and clearly delineated.
 - v. be paved with concrete or bituminous surfacing designed and drained to the approved stormwater drainage system.
 - vi. incorporate landscaping to provide visual screening to reduce the visual impact particularly from external roadways ([Figure 23](#)).
 - vii. for sites with less than 20 car spaces, screen planting to the perimeter of the car park is to be provided. For sites with more than 20 car spaces, additional tree bays (1.2 x 3m minimum) are to be incorporated at a rate of one (1) bay for every 10 spaces, except where bays abut rear or side walls of buildings ([Figure 24](#)). The suggested planting palette is set out at [Table 2](#).
 - viii. bicycle parking facilities should be located in highly visible, illuminated areas and securely anchored to the site surface to prevent removal and shall be of sufficient strength to resist vandalism and theft.
2. The site layout must ensure that all vehicles being loaded and/or unloaded (or awaiting loading and / or unloading) are able to stand entirely within the leased area to avoid queuing of vehicles outside of leased areas. As a minimum, truck entry (security gates and check point facility) to a site must be set back 30m from the lease boundary so as to enable at least one (1) B-double

truck to queue entirely within the site. Light vehicle entry which includes a gate or a security entry point to a site must be set back as a minimum 6m from the lease boundary. For the Enfield Intermodal Terminal Area and Lot 6 of the Enfield Intermodal Logistics Centre, the entry must be set back from the lease boundary so as to enable at least two B-double trucks to queue entirely within the site (i.e. 60m). These set backs are shown in [Figure 25](#).

Enfield only

3. Demonstrate compliance with Conditions 2.1 – 2.12 of the [Enfield Intermodal Logistics Centre Project Approval](#).

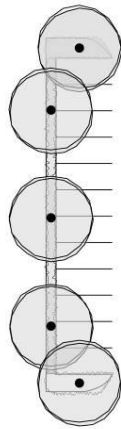
Best Practice

1. Prioritise the use of zero or low greenhouse gas emission transport options to move freight to and from NSW Ports Land and minimise truck movements and / or vehicle kilometres travelled on the road network.

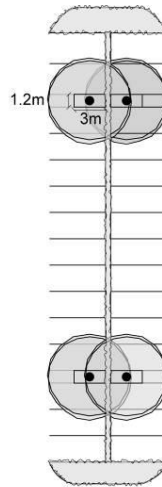
Figure 23. Examples of landscaping within car parking areas



Figure 24. Required perimeter screen planting (left) and tree bays within car parking areas (right)



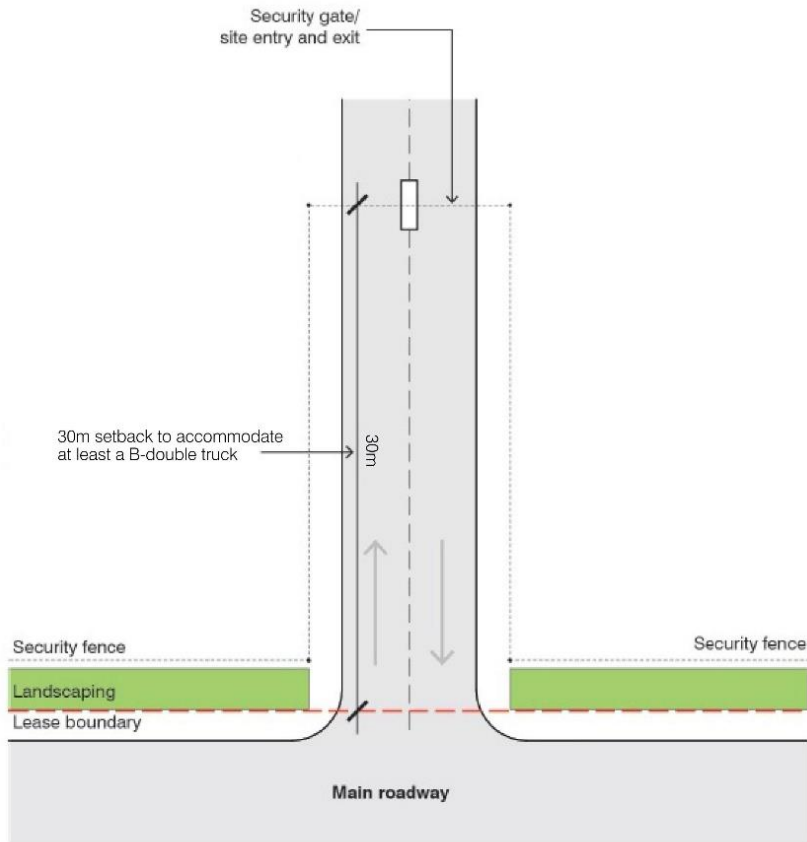
Perimeter screen planting



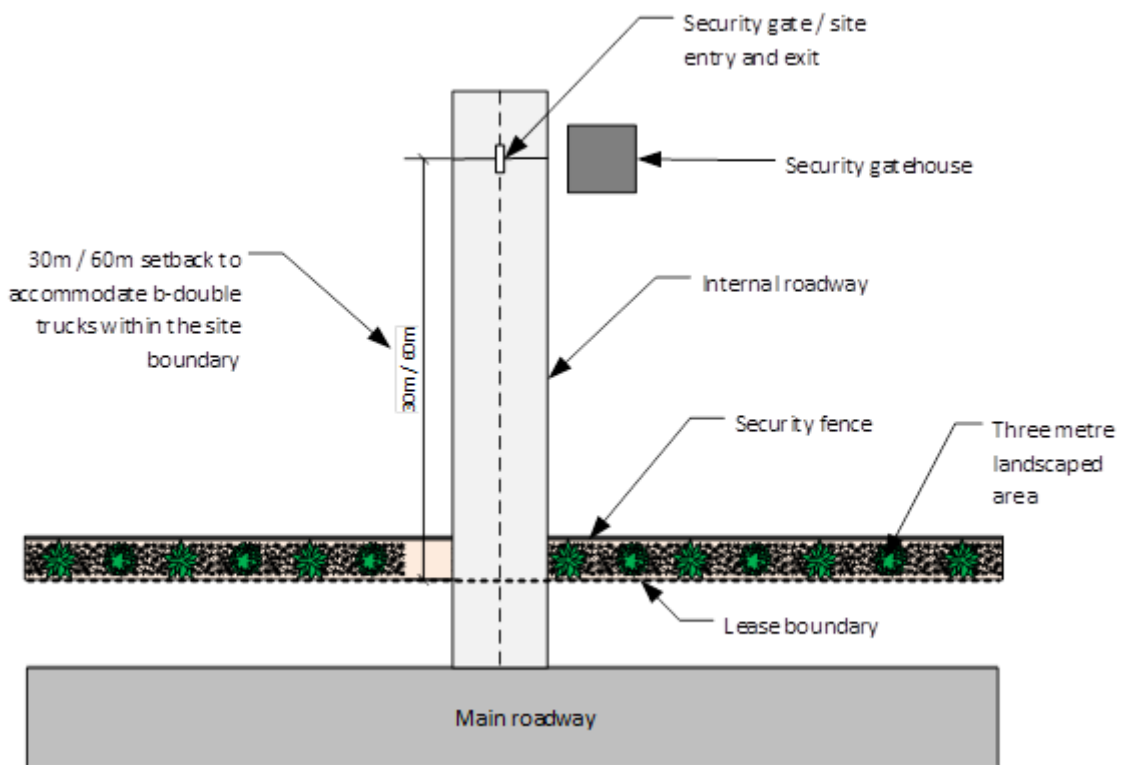
Tree bays within car park
(for over 20 spaces)

Figure 25. Truck entry (security gates and check point facility) setback requirements

Port Botany and Port Kembla



Enfield Intermodal Logistics Centre



3.11. Security

Objectives

- A. To ensure that maritime security requirements of Port Botany and Port Kembla are maintained in compliance with the [Commonwealth Maritime Transport and Offshore Facilities Security Act 2003](#).
- B. To encourage opportunities for passive surveillance so as to discourage vandalism and criminal activity.
- C. To provide security infrastructure that enhances the visual quality NSW Ports sites through the use of consistent materials and finishes.

Minimum Requirements

1. The Development Proposal must clearly demonstrate that all leased areas are appropriately fenced for security purposes including:
 - a. all chain wire fencing, posts and rails and gates that are visible from the water and main roads (excluding roads within leased areas) are required to be black in colour (i.e., black PVC, powder coated or the like). Fencing in other locations may comprise a metallic finish.
 - b. all access points to leased areas are secured with durable gates, and checkpoint facilities, where appropriate. Gates are to comprise either chain wire fencing set within a framed rim (with optional 3-strand barbed wire on top), or palisade gates (with optional spikes or barbed wire on top). The maximum fence height permitted is 3.5m (inclusive of the barbed wire portion). ([Figure 26](#)).

Figure 26. Examples of fencing requirements



3.12. Signage

Objectives

- A. To provide clear information and / or directions for port users, operators, and visitors.
- B. To ensure all signage is compliant with the relevant authority's requirements.
- C. To provide easily identifiable site entrances and exit points for NSW Ports Land users and visitors.
- D. To provide individual businesses the opportunity of identifying their location and activity.
- E. To manage signage in a manner that does not detract from the visual quality of NSW Ports Land.
- F. To ensure that all public notice and directional signage is effective and consistent in design and character.

Minimum Requirements

1. Development Proposals that include a requirement for new signage or changes to existing signage must clearly demonstrate that all directional signage outside or on the lease area fence ([Figure 27](#)) excluding the relevant road authority's street signage:
 - a. is located in a prominent position and clearly visible.
 - b. is not located above a roadway.
 - c. is of a size and location so as to not obscure vehicle sightlines.
 - d. is positioned where it does not obstruct walkways and pathways.
 - e. consists of similar colours to that of the NSW Ports colour scheme ([Figure 17](#)) or is to be consistent with colours of typical safety / warning signage (i.e. to comply with applicable Australian Standards).
 - f. may incorporate the lessee logo where it is located for directional purposes at the entrance to a leased area. The colours of the logo are to be lessee corporate colours.
 - g. for car parking areas, loading and delivery areas and the like, is located close to the main access of a site.
 - h. is consistent with government authority requirements and Australian Standards.
2. No advertising signs are to be erected within NSW Ports Land upon the buildings, structures, or tanks other than business identification signage.
3. Business identification signage:
 - a. is to be located outside the lease area fence and located on NSW Ports' standard Blade Sign.
 - b. should not obscure vehicle sightlines or control signs.
 - c. is permitted on one elevation of the primary building, except where a site has two main road frontages or where there are multiple occupants within a building.
 - d. may comprise text, illustrations, and/or both, to ensure clear identification of the sign and its intent.
 - e. is not to be illuminated or comprise any form of flashing signage.
 - f. is not to occupy more than 10% of any facade or elevation of a building.
 - g. is to identify visitor entrance points to lease areas.
4. Business identification signage on the side of tanks or warehouses is limited to one sign per leased area or site (in the case of multiple lease areas being operated as a single site). The sign should be subordinate to the elevation of the structure ([Figure 28](#)).

Figure 27. Examples of appropriate directional signage

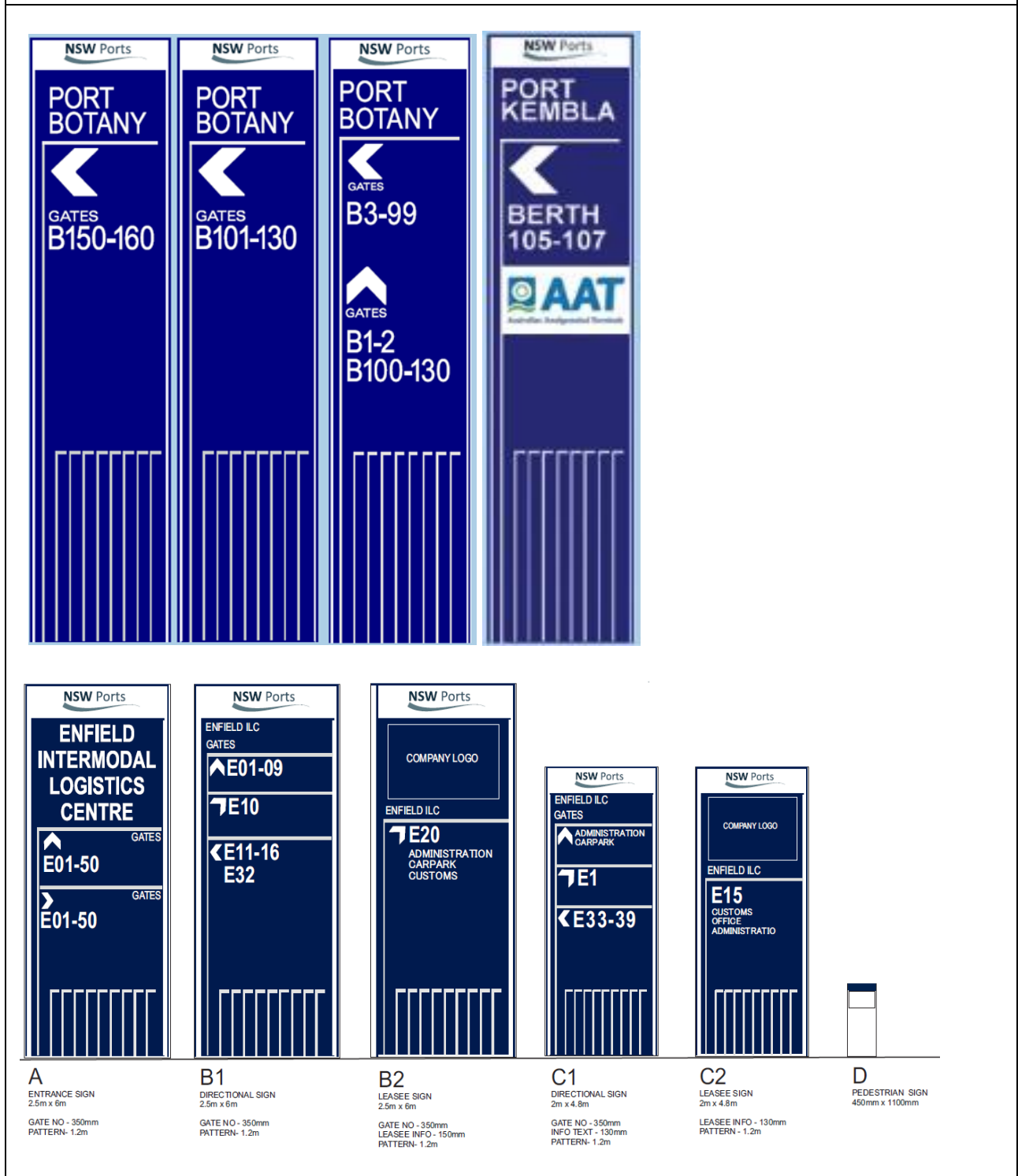


Figure 28. Examples of appropriate business identification signage



3.13. Heritage

Objectives

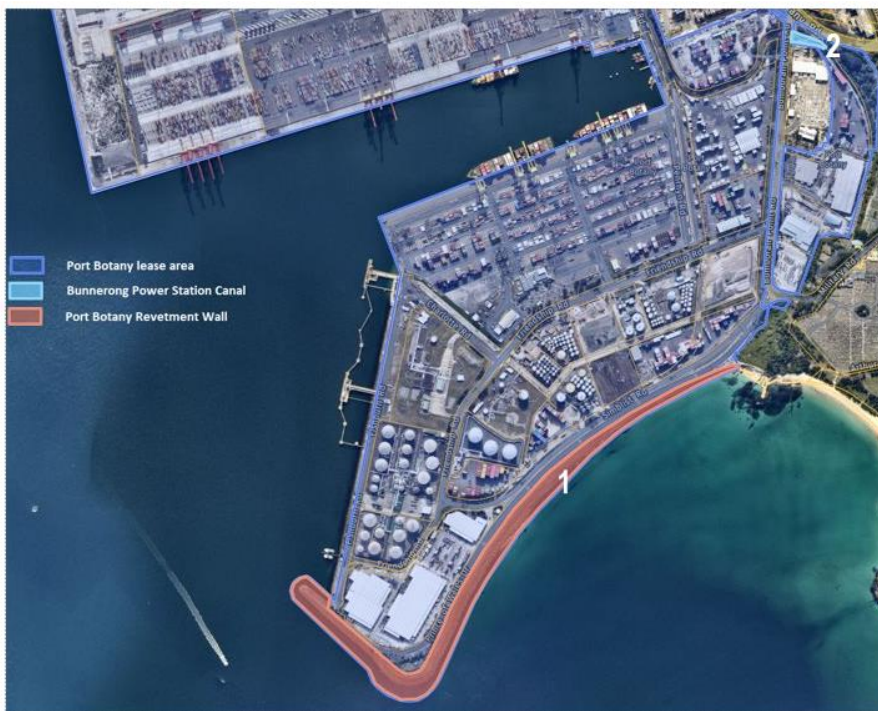
- A. To minimise any adverse impacts of development on identified items of heritage significance within and immediately adjacent to NSW Ports Land.

Minimum Requirements

1. Any Development Proposal which has the potential to impact on a heritage item situated on NSW Ports Land ([Figure 29](#)) or a heritage item's significance, is to be accompanied by a Heritage Impact Statement.
2. Development in the vicinity of a heritage item is to be designed to respect and complement the heritage item.

Figure 29. NSW Ports heritage items

Port Botany



1. [Port Botany Revetment Wall](#)

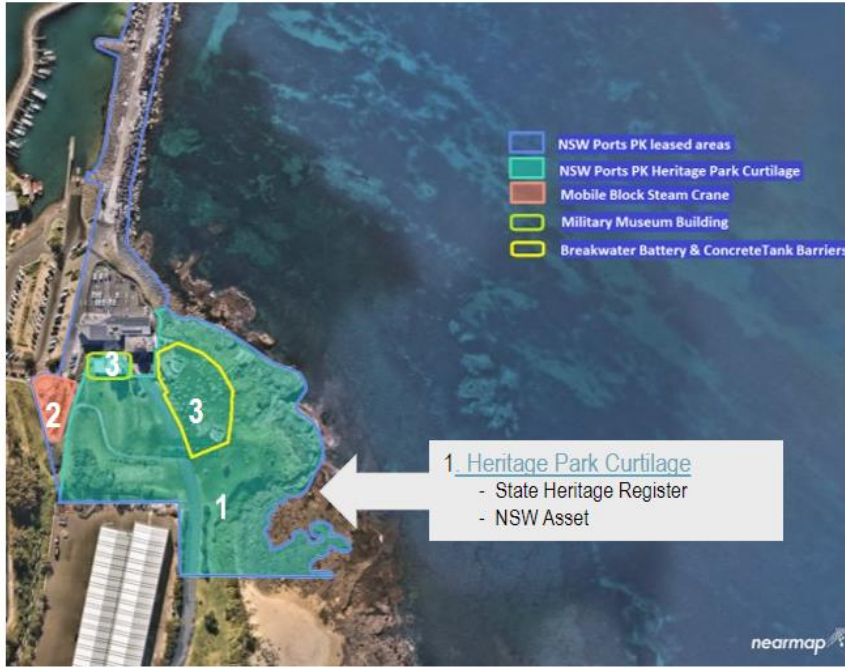
- s170 State Register
- NSW Ports asset



2. [Bunnerong Power Station Canal](#)

- s170 State Register
- NSW Ports asset

Port Kembla



1. Heritage Park Curtilage
 - State Heritage Register
 - NSW Asset



2. Mobile Steam Crane Block
 - Local heritage significance
 - NSW Asset



3. Military Museum
 - Local heritage significance
 - NSW Assets

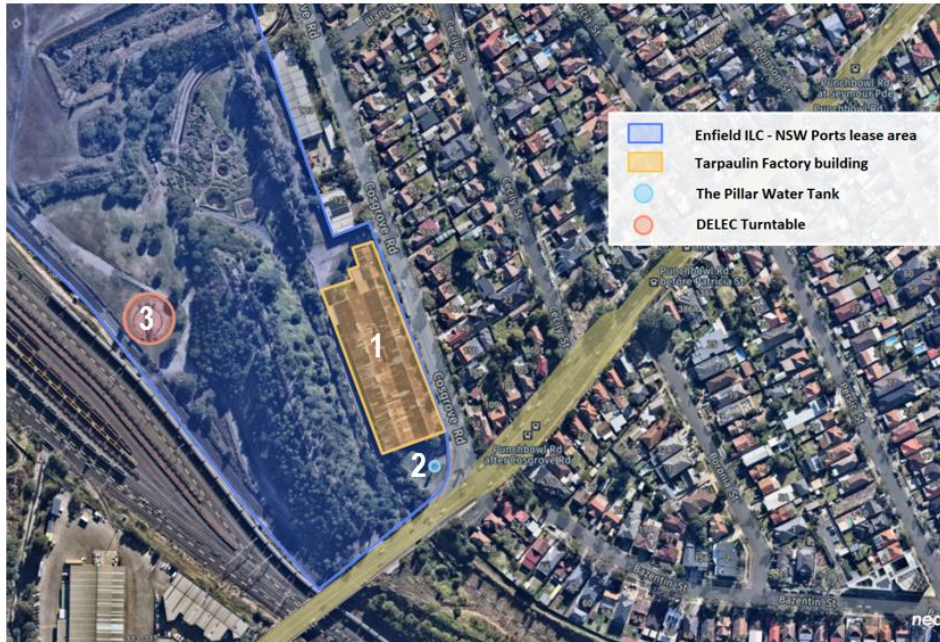


3. Concrete Tank Barriers
 - Local heritage significance
 - NSW Assets



3. Breakwater Battery
 - Local heritage significance
 - NSW Assets

Enfield

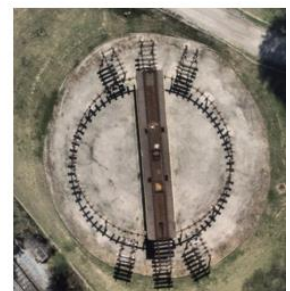


2. Pillar Water Tank
 - s170 State heritage significance (but not in SHI)
 - Within Flower Power leased area so to be included in HMP

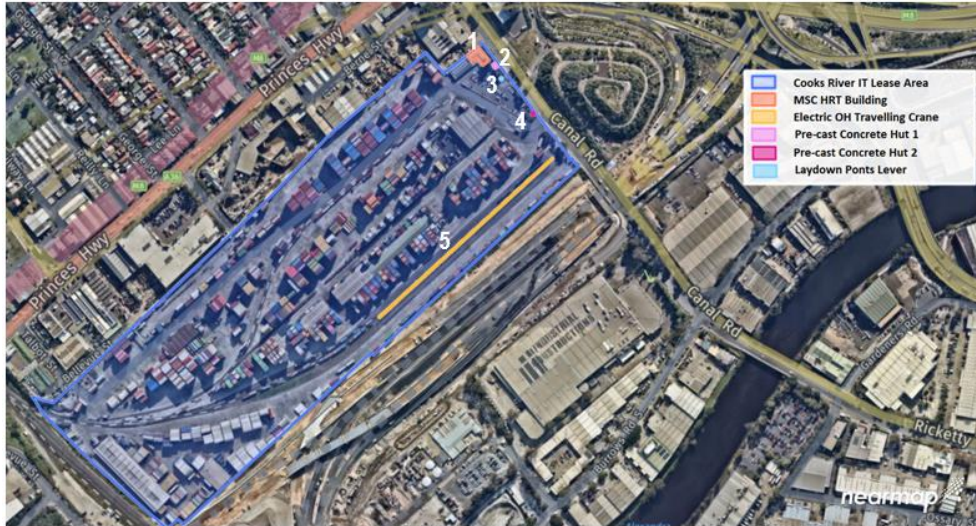


1. Tarpaulin Factory
 - s170 State heritage significance
 - leased by Flower Power who is required to prepare a HMP

3. DELEC Turntable
 - not listed but of historical importance
 - NSW Ports to maintain



Cooks River



2. Precast Concrete Hut 1



3. Precast Concrete Hut 2



1. MCS HRT Admin Building



5. The Electric Overhead Travelling Crane



4. Laydown Points Lever



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NSW Ports' Sustainable Development Code – May 2024