



# Sustainable Port Development Guidelines



HAY POINT • MACKAY • ABBOT POINT • WEIPA

This document and its standards have been approved for implementation for all new developments on NQBP strategic port land. The document is published on NQBP's website for use by port customers.

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0.0	15 February 2016	Approved for implementation.
0.1	19 July 2016	Web link reference in Section 2.1 updated.
1.0	January 2017	New engineering requirements for marine structures and documentation added to Sections 14 & 15, with new Appendices 2 & 3 added. Improved description of Port Development Approvals in Section 1. Minor wording improvements throughout.
2.0	October 2017	Amendments to reflect new planning legislation. Attachment 1 amended.
2.1	March 2018	Amendment to exemptions and inclusion of exemption code.

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# 1 INTRODUCTION

## 1.1 Purpose of the Guidelines

The strategic vision for North Queensland Bulk Ports Corporation (NQBPC) is to lead the sustainable development of Queensland ports and build prosperity for current and future generations. This document, the *Sustainable Port Development Guidelines* (hereafter called the “Guidelines”), has been prepared by NQBPC as part of the implementation of this Vision, as well as to implement initiatives identified in NQBPC’s Sustainability Plan that are relevant to new developments.

These Guidelines provide standards and requirements for development in the NQBPC ports of Hay Point, Mackay, Abbot Point and Weipa. The Guidelines have been developed to ensure a high standard of new development and on-going maintenance of development on NQBPC land, while still providing cost-effective outcomes for development proponents. The Guidelines also encourage the incorporation of sustainable development principles and innovative design into new developments.

The objectives of these Guidelines are to:

- a) ensure a consistent high standard of development across all NQBPC ports;
- b) provide certainty to development proponents about the development expectations of NQBPC;
- c) provide a safe working environment in all NQBPC ports;
- d) protect environmental values of the port and minimise environmental impacts of new developments in the port; and
- e) incorporate appropriate sustainability measures into new developments.

The Guidelines represent the **Development Codes** required for new development in NQBPC ports. All development on port land must comply with the requirements of this document unless specifically exempted by NQBPC based on project-specific circumstances.

## 1.2 How to Use the Guidelines

The Guidelines document the key objectives sought for each area of assessment and then provide standards acceptable to NQBPC that meets these objectives. The standards are presented as “specific requirements” and “additional encouraged outcomes”.

“Specific requirements” represent the minimum standard required for new development. Project proponents proposing a new development on port land need to prepare their development proposal to comply with these minimum requirements. NQBPC however encourages innovation in new development. If a proponent is seeking approval from NQBPC for alternative development standards to those presented in this document, information must be provided to NQBPC detailing how the alternative criteria will achieve or exceed the stated objectives in this document. Each variation will be considered by NQBPC on its own merits.

This document also includes additional sustainable design and lighting measures that are listed as “additional encouraged outcomes” – these measures are not mandatory, but proponents are encouraged to consider these in their project design as measures to improve the sustainable performance of their development. Such measures represent current best practice and complement, but go beyond, the listed specific requirements.

When reviewing a Port Development Application (PDA) for a new project, NQBPC will assess compliance with the standards presented in this document as part of the application assessment process. Proponents need to provide sufficient information in the PDA to demonstrate how their proposal complies with all the requirements of these Guidelines or provide a statement that the proposed development complies fully with the Guidelines.

Where a new development has been built that does not comply with all aspects of the Guidelines, or an approval has not been obtained from NQBPC for any variations from the Guidelines, then the proponent will be required to correct any deficiencies at their own cost, if NQBPC gives a notice to correct a non-compliance.

These Guidelines apply only to new developments in NQBP ports, but they apply for the life of the development after NQBP approval. The Guidelines will be updated by NQBP from time to time to ensure its ongoing effectiveness. Developments only need to comply with the Guidelines that were in force at the time of development approval – existing developments are not required to upgrade to meet the requirements of versions of the Guidelines published after development approval.

These Guidelines are not a statutory document. NQBP may use its discretion at all times to require additional requirements for a project or to waive particular requirements if a proponent can justify a change.

NQBP may update these Guidelines from time-to-time and proponents should obtain the latest version from NQBP's website when commencing planning for a port development.

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### **1.3 Relationship with Other Documents**

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These Guidelines have been prepared to support the Land Use Plan for each port. The Land Use Plans are statutory documents which are available on NQBP's website, however the Guidelines is a non-statutory document that only requires NQBP approval.

Changes that are consistent with the general standards in the document will be made from time to time with NQBP senior management approval. The latest version of the Guidelines will be made available on NQBP's website.



## 2 PORT DEVELOPMENT APPROVALS

### 2.1 Types of Development Approvals

Similar to a local government, NQBP has a Land Use Plan for each Port to guide development. These Land Use Plans are statutory documents that are approved by the Qld Minister for Transport before they come into force. NQBP property included in these plans, whether owned or leased by NQBP, is designated as “Strategic Port Land” (SPL).

Under the *Transport Infrastructure Act 1994* (TI Act), a port authority may control activities in its port area through port notices. Penalties apply under the Act for not complying with a port notice (also called a port rule). In all NQBP ports, port notices require all works in its port area (which covers both strategic port land and port waters) to be approved by NQBP. The process used by NQBP to approve works is the Port Development Approval process. NQBP has excluded some minor works from needing NQBP approval and these exemptions are listed in Attachment 1 of these Guidelines.

NQBP charges a fee for assessment of a Port Development Application, with the fee based on the complexity of the assessment. Assessment fees are published on NQBP’s website.

State approvals (Development Permit) under the *Planning Act 2016* (Planning Act) are also required for particular development, called assessable development. Planning approval of development on strategic port land comes under the planning control of NQBP rather than the local council. NQBP is the designated assessment manager under the Planning Act for assessable development that occurs on strategic port land or in port waters. Examples of this type of development are tidal works or material changes of use involving an Environmentally Relevant Activity.

All works (excluding minor works) on strategic port land and in port waters require a Port Development Approval. Some activities or projects will also trigger a need for an approval under the Planning Act as well, resulting in two separate development approvals from NQBP being required:

- Port Development Approval issued by NQBP, as required by port notices; and
- Development Permit issued by NQBP as the Assessment Manager under the Planning Act.

To reduce duplication of applications and assessment, if a proposed development requires both a Port Development Approval and a Development Permit under the Planning Act, NQBP only requires a single application for the Development Permit under Planning Act to be made, as long as NQBP is the Assessment Manager under the Planning Act for the Development Permit. NQBP will then carry out the two assessments concurrently.

Where both Port Development Approval and a Development Permit under the Planning Act are required, NQBP will issue a “Development Approval Package” that contains the two approval documents. The two approvals are issued as separate documents because conditions imposed in the Development Permit under the Planning Act must meet certain requirements under the Planning Act, whereas the Port Development Approval may include commercial, operational or security requirements from NQBP’s role as both land owner and port authority.

NQBP’s approval for port development will therefore be in one of the following forms:

Type of Development/ Works	Type of Approval Meeting NQBP Development Requirements	How to apply
New development, buildings, infrastructure and structures; the commencement of a new use/ activity; the change in scale or intensity of a use/ activity; or projects that do not involve legislative planning approvals.	Port Development Approval	Online via NQBP’s website <a href="https://nqbp.com.au/port-development/applying-to-develop">https://nqbp.com.au/port-development/applying-to-develop</a> Click on the NQBP development assessment application form link in the Development Assessment section.

Type of Development/ Works	Type of Approval Meeting NQBP Development Requirements	How to apply
Material Change of Use applications, Operational Works (i.e. Tidal Works, Marine Plants or Vegetation Removal), or projects involving referable Environmentally Relevant Activities.	Development Permit under Queensland planning legislation, provided NQBP has been involved in the process	<p>The State Government's Development Assessment Rules (DA Rules) apply.</p> <p>Hard copy/ electronic DA forms submitted to NQBP as Assessment Manager.</p> <p>Referral to the Queensland Government.</p> <p>Forms and processes are provided on the Queensland Government website for the Department of State Development, Manufacturing, Infrastructure, Planning.</p>

## 2.2 Building Work Applications

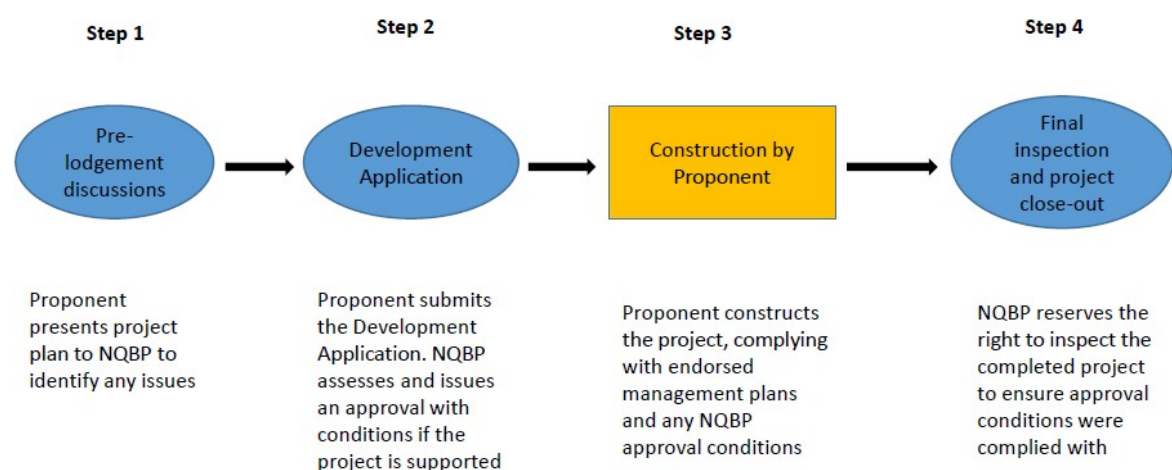
Building work requires a Port Development Approval and may also require a Development Permit under the Planning Act. NQBP's Port Development Approval will assess the proposed development relevant to the requirements listed in the Guidelines.

NQBP does not issue Development Permits for building work under the Planning Act. The proponent will be required to obtain a separate Development Permit for building work assessable under the Planning Act through a private certifier. A copy of the Development Permit will then need to be supplied to NQBP by the proponent.

## 2.3 Port Development Approval Process

The process for a Port Development Approval is below, with further detail provided on NQBP's website:

Figure 2-1 Port Development Process



In assessing all development proposals, NQBP relies on the submitted information. The proponent remains wholly responsible for the design, construction and implementation of new developments, including any environmental monitoring and safety management.

Application fees apply for Port Development Approvals, including where NQBP assesses the project through the Development Assessment Rules (DA Rules). These fees are provided on the planning page of NQBP's website <https://nqbp.com.au/port-development/planning>.

Even where a development approval has been issued by NQBP, land tenure must still be obtained separately from NQBP before any on-site works can be commenced. See Section 2.6 for further information. NQBP's Commerce and Trade Department should be contacted for



any property enquiries.

## 2.4 Abbot Point State Development Area

Special requirements apply to the Port of Abbot Point. The onshore strategic port land at Abbot Point is included within the broader Abbot Point State Development Area, established by the Coordinator-General.

The State Development Area is subject to a development scheme, which is the overarching regulatory instrument that controls planning and development and takes precedence over all other documents. The Coordinator-General is the approving authority for a Material Change of Use under the scheme. Where NQBP is the owner of the land subject of the development, its landowner approval will be required before consideration of a development by the Coordinator-General.

The granting of a development approval by the Coordinator-General does not remove the requirement for a port development approval. A separate application is required, unless an exemption is provided by NQBP.

The offshore area at Abbot Point is not within the Abbot Point State Development Area and standard development approval requirements outlined in Section 2.1 apply.

## 2.5 Approval Times

Below are the expected approval times for projects.

Type of Approval	Typical Approval Times
Port Development Approval	Generally three to four weeks after NQBP's receipt of the application, if all the required information has been provided at the time of the application. Assessment time will be longer if an Information Request is required.
Development Permit under Queensland planning legislation.	Ten to sixteen weeks after a properly made application has been made, plus any additional time required for the proponent to respond to any Information Request issued (see Note 1).

Notes:

1. If the project involves an EIS, the EIS and Supplement to the EIS must be submitted before assessment of the project can commence. Approval times above do not include preparation of the EIS by the proponent.
2. NQBP does not guarantee approval times and the above are only typical approval times provided for project planning purposes. Applications with insufficient information provided will take longer to assess.

## 2.6 Land Tenure

Even if a Port Development Approval has been issued by NQBP, the proponent must still be granted a form of land tenure before any development can be commenced. Land tenure may be in the form of a lease or sub-lease, or a permit or licence to occupy. Land tenure applies to both on-shore areas and marine areas.

Development and operational activities on the land are limited to the uses permitted in the tenure agreement.

## 2.7 Temporary Facilities

Temporary facilities require Port Development Approval and must be included in a project's Port Development Application.

The standards in these Guidelines apply to temporary as well as permanent facilities, however a proponent may seek dispensation for a relaxation in some standards for short periods of use. For example, Section 3.3 of these Guidelines presents relaxed requirements for temporary buildings, such as for construction projects.

The time that temporary facilities are allowed to remain in place will be specified in the Port Development Approval and this will be based on the purpose of the facilities and the time period requested. The following should be noted for temporary facilities:

- Structures must still comply with the Building Code of Australia and be constructed for cyclone conditions.
- Cyclone rated tie-downs are required if buildings are to remain on site during the cyclone season.

## 3 BUILDING DESIGN AND VISUAL AMENITY

### 3.1 Objectives

- a) All building design is to contribute to an attractive streetscape. Development proponents are encouraged to involve an architect in designing new buildings and structures to achieve this outcome.
- b) All new development should contribute to the visual amenity and character of the surrounding area. It should be respectful of surrounding development, infrastructure and operations. It should provide amenity to onsite employees and visitors.
- c) Buildings and structures must, as a minimum, be designed with a constructed floor level that provides adequate flood immunity for the life of the project. This is taken to be a Q100 terrestrial flood event (1 in 100 year storm event), and if appropriate for the location, for any storm surge or expected sea level rise expected in the life of the project.
- d) Sustainable development principles are incorporated into the project design where practicable.
- e) Buildings must incorporate sustainable building design features appropriate to the scale of the development.

### 3.2 Specific Requirements

#### 3.2.1 Structure Heights

Buildings are not to exceed 15 m above natural ground level or four stories (which includes the ground floor as a story) in height, whichever is the lower, except with specific approval from NQBP. Heights of permanent cranes, stackers/ reclaimers and other elevated structures of greater height are to be submitted to NQBP for approval as part of the PDA process.

#### 3.2.2 Appearance

All buildings must have a formal entry point. This must have a canopy or awning at the entry point. Buildings need to be designed to mitigate the perception of bulk and scale from the road frontage by:

- i) varying the facade alignments and height;
- ii) incorporating a mix of building forms, colours, materials and treatments into the façade, such as canopies, recesses and/or awnings;
- iii) varying the materials and colours used; and
- iv) buildings raised off the ground must be skirted with a building material appropriate to the appearance and functioning of the building.

Buildings located in the Commercial Precinct (also called “Port Related Commercial”) of the port are expected to have a higher quality of presentation than in other zones of the port. NQBP encourages proponents in this zone to be innovative in their building designs and to ensure an attractive building finish is provided. Higher quality materials such as rendered masonry should be considered for this zone.

Figure 3-1 Examples of a mix of forms on building facades



### 3.2.3 Building Colours

Buildings are to incorporate the following:

- i) External materials are to have muted recessive colours with material and/ or tonal colour variation used to break up the mass of buildings and walls;
- ii) Lighter shades are to be used for larger wall areas and darker shades used as highlights; and
- iii) Liquid product tanks, such as fuel storage tanks, are to be painted white, light grey or light green.

Figure 3-2 Examples of use of colours to enhance building appearance



### 3.2.4 Mobile Equipment Colours

The presence of mobile equipment such as cranes, gantries, stacker reclaimers and shiploaders should be reinforced through colours, unless there is a specific need to minimise visual impact for community amenity.

### 3.2.5 Reflectivity

Materials and colours for buildings and roofs are to minimise reflectivity. All glazing is to have a reflectivity coefficient less than 20%.

### 3.2.6 Site and Floor levels

Site levels, buildings and structures must be designed with a minimum level to provide immunity from flooding and storm surge, including sea level rise for the project life of the building. This applies both on land and for structures over water.

For any project for which an Environmental Impact Statement (EIS) is being prepared, which is normally a significant or high impact project, a flooding, storm tide and storm surge assessment should be carried out to determine the required site level using the following criteria:

- i) 1 in 100 year ARI (Q100) terrestrial flood event;
- ii) 1 in 20 year ARI of storm surge; and
- iii) Sea level rise of 0.8 m over the next 100 years.

Site levels must be above these levels. Where this assessment has not been carried out, an allowance of 2 m above the level of HAT is required as the minimum site level, as recommended by DEHP (2013) as the Defined Storm Tide Event (DTSE) for coastal areas. For foreshore areas, allowance also needs to be allowed for wave run-up, which will be determined by the type of foreshore protection.

In the absence of detailed site studies, the minimum levels contained in Table 3-1 apply.

Table 3-1 Minimum Site Levels to Prevent Flooding and Storm Surge

Port	Default Minimum Site Ground Level in 2015 – projects less than 25 years life	Minimum Ground Site Levels - for up to 50 years project life <sup>1</sup>	Minimum Ground Site Levels for a project life greater than 50 years <sup>1</sup>
Mackay	5.3 m AHD <sup>5</sup>	5.5 m AHD	5.8 m AHD
Hay Point <sup>4</sup>	5.6 m AHD <sup>2</sup>	6.1 m AHD	6.4 m AHD <sup>2,4</sup>
Abbot Point	3.2 m AHD <sup>3</sup>	3.7 m AHD	4.0 m AHD <sup>3</sup>
Weipa	3.6 m AHD <sup>2</sup>	4.1 m AHD	4.4 m AHD <sup>2</sup>

Notes:

1. An allowance for sea level rise of 0.5 m over the next 50 years and 0.8 m over the next 100 years has been made
2. Based on DTSE
3. Based on a report by Aurecon, 2012. "Hydrology and Climate Change Modelling" (Project 227194).
4. Outcomes of coastal process studies of Dudgeon Point development in the Port of Hay Point are documented in Section 6.4 of the *Draft Final Port of Hay Point Ten Year Development Master Plan* (Aurecon, 2012a). A level of 7.5 m AHD was recommended as a minimum site development level at Dudgeon Point, due to an allowance of 1 m for wave run-up due to the coastal exposure of the site.
5. The Defined Storm Tide Event level is 5.6 m AHD for the Mackay region. However, Mackay Regional Council has undertaken detailed modelling and currently recommends a minimum site level of 5.0 m AHD in the broader Mackay area and a building floor level of 5.4 m AHD (Ref: MRC Design Code SP001 of May 2013). NQBP's minimum level allows for a 0.3 m increase in water levels due to climate change over the coming 25 years.

The above is the minimum ground level of the site. The building constructed floor level should be set at least 300 mm above the developed ground level. For buildings next to existing roads, the building floor level must also be 300 mm above both the kerb and crown of the road. Building floor levels must also comply with the minimum level imposed by the local regional council.

### Non-discriminatory Access

Building design must provide non-discriminatory access in accordance with AS1428- Design Access and Mobility.

### Location of services

Infrastructure, utilities and services within the site are to be aligned in a structured and orderly manner. All service connections are to be perpendicular to roads/ site frontage where practicable and enter as directly as possible.

Building services and infrastructure (e.g. mechanical plant, air conditioning units, water tanks, telecommunications etc.) are to be appropriately located out of view from the public and/or screened/ designed to blend in with or complement the building or structure.

### Shipping Containers

Shipping containers are not to be used for equipment storage, recreation or as a work space on either a temporary or permanent basis as part of normal business operations and must not be stored on site unless part of an approved business activity (i.e. container storage, container hire, logistics facility etc.). However, it is permissible to use a container for temporary storage of equipment during a construction project or if NQBP approves a short-term use until alternative storage arrangements can be made.

For container storage or hire facilities, container stacking must be tiered so that containers are, at a maximum:

- No more than two high where the stack is less than 5 m from a road or paved footpath;
- Otherwise no more than four full containers high where the area is flat and paved and where the pavement has suitable strength; and
- No more than one stack higher than the previous line of containers.

Where the area is not paved, the stacking height shall not exceed three containers high.

Where the container area is flat, fully paved and designed with concrete foundations for containers, NQBP will consider requests for approval of an increase in maximum stacking height to five full containers where a risk assessment supporting this is supplied by the client. The risk assessment must consider the impact of local wind conditions on the stacked containers.

The maximum stacking height of empty containers will be the same as for the loaded containers, unless a risk assessment is provided justifying a higher stacked height.

### **3.2.7 Building Design Standards**

All buildings must be designed and built to comply with the National Construction Code (NCC) / Building Code of Australia (BCA). Building fire safety standards and fighting equipment must comply with the BCA as the minimum standard, as well as including any additional requirements specified by Queensland Fire and Emergency Services.

Buildings and plumbing must be certified by a private certifier and a copy of the certification and as constructed drawings provided to NQBP at completion of the works.

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## **3.3 Use of Demountables**

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### **3.3.1 New Developments**

Permanent buildings rather than demountables are recommended for new developments on port land. However, NQBP recognises that this may not be economically practical in some circumstances, for example some firms may need to limit capital investment in the early stages of a new development, or the length of some leases in ports may not allow the cost of a permanent building to be recouped for a tenant over the life of a lease.

NQBP will accordingly consider requests from tenants for use of demountables on their merits. Any such requests must be through the port development application process and any use of demountables requires consultation and specific planning approval from NQBP. Because buildings in the Commercial Precinct are required to be of a high quality, demountables will not be allowed in the Commercial Precinct other than for the construction phase of the development.

### **3.3.2 Standards for Demountables**

Where the use of a demountable building has been approved by NQBP, the building must be of a high standard and achieve satisfactory aesthetic outcomes. The following are requirements for demountables. For short term use of demountables, some of the following requirements will be relaxed and the relaxations are detailed in Section 3.3.3:

- i) The building must meet the National Construction Code / Building Code of Australia;
  - ii) The building must be tied down to meet the severity of cyclones expected in the area;
  - iii) The building must be in very good condition and maintained as such throughout its use on port land;
  - iv) The building must include:
    - Eaves or awnings;
    - Shade structures over windows; and
    - Additional external fixtures such as verandas or shade structures.
- The building must include at least two different external wall materials or treatments, such as:
- Colorbond standard orb (or equivalent);
  - Colorbond mini orb (or equivalent);



- Wood; and/or
- Different material.

Because of the marine environment where the buildings will be located, the manufacturer of the materials should be consulted to warrant the longevity of the materials for that environment.

- v) Roof material, fascia and downpipes must be complementary in material and colour to the rest of the building. Galvanised or zincalume finishes are not acceptable on buildings.
- vi) The building must include at least two different, but complementary, colours.
- vii) The roof must have a pitch greater than 10 degrees, or a variety of roof forms are to be used including skillions, rolled roof, pitches and gables.
- viii) The building must have operable windows. Windows and door frames are to be powder coated and complementary to the overall colour scheme.
- ix) Demountable buildings, if raised off the ground, must be skirted with material to complement the building's architectural features.
- x) The buildings are to be air-conditioned with an energy-efficient system.
- xi) All air conditioning, services and utility conduits are to be concealed below the building.
- xii) Landscaping is to be provided around the building to meet the landscaping requirements of these Guidelines. Consideration should be given to provision of an outdoor staff recreation area adjoining the building, including tables and chairs.
- xiii) The building must still comply with Sustainable Design requirements provided in Section 5 of this document.

An example of appropriate treatments for demountables in NQBP ports is shown in Figure 3-3, highlighting the use of differing materials roof forms, inclusion of verandas and landscaping.

*Figure 3-3 Design treatments for demountable building*



### **3.3.3 Use in Construction Projects or Short Term Use**

Demountables are allowed to be used for offices and services (toilets, gatehouses etc.) during the construction of new developments or as interim facilities until permanent facilities are built. The following relaxations apply to the above demountable standards in these circumstances:

- Landscaping around the building is not required (Clause 3.3.2 (xii) above);
- The building does not require sustainable design features (Clause 3.3.2 (xiii) above); and
- NQBP will consider relaxation of requirements for window awnings, roof pitch, materials etc. on request from a proponent. However, the outcome must still be aesthetically pleasing.

These relaxations on demountable requirements apply for the full duration of a construction project. These relaxations also apply when the intended temporary demountable use approved by NQBP is less than two years. If NQBP has agreed to a temporary demountable use longer than two years, then the full requirements listed in Section 3.3.2 would apply, unless otherwise approved by NQBP.

## 4 SITE LAYOUT, TRAFFIC MANAGEMENT & PARKING

### 4.1 Objectives

- The layout of a site must contribute to the efficiency and safety of the site, as well as supporting the strong visual presentation of the site.
- Safe pedestrian access must be provided within the site.
- Vehicles for staff, visitors or customers must park within the site. Vehicles must not queue outside the site.
- Development must be appropriately setback from lease boundaries to ensure development does not pose a risk to third parties or facilities beyond the site boundary; and
- Buildings must be orientated to enhance the streetscape. For larger buildings or structures, development should be tiered to add depth.

### 4.2 Specific Requirements

#### 4.2.1 Maximum building footprint

With the exception of vehicle crossovers and underground infrastructure connections, all development must be contained within the lease area. The building footprint should not exceed 70 % of the total site area.

#### 4.2.2 Building Orientation

Offices must be sited and oriented towards the road frontage. The main entry to the building is to be easily identifiable from the street and directly accessible from parking areas through the front of the building.

The development should passively direct visitors to minimise the need for signage.

#### 4.2.3 Building Setbacks

Building and structure setbacks from roads are a minimum of:

- 10 m from any arterial or major collector road. These roads include the following:
  - Port of Mackay: Ron Searle Drive, Harbour Road and Edmund Casey Drive; and
  - Port of Hay Point: Hay Point Road.
- 6 m from any other road; and
- Building and structure setback from the front boundary fence is to be 3 m minimum, with the provision that any part of the building over 3 m must be no less than 6 m from the front boundary.

Set-backs from side or back boundaries not adjacent to a road are as listed in Table 4-1.

Table 4-1 Building setbacks

Building height	Setback from side or rear lease boundary
To 7.5 m	2.0 m
Greater than 7.5 m	2.0 m, plus 0.5 m for every 3 m of height (or part thereof) above 7.5 m

#### 4.2.4 Buffer Zones

If higher risk activities that could impact on neighbouring land users are to be undertaken, or if environmental emissions (dust, odours, noise etc.) could occur from the site in normal or abnormal conditions, the site layout must include a buffer zone around the site. This buffer zone must provide sufficient separation distance to ensure the adjoining land uses or the public are not adversely affected.

The proponent shall propose appropriate buffer zones within their leased site in their development

application and include sufficient detail on the basis for this recommendation to allow an assessment of adequacy by NQBP.

#### **4.2.5 Landscaping**

The site layout shall include landscaping as detailed in Section 6. The landscaping is to be used to screen the development from the road frontage and neighbouring sensitive areas, as well as to enhance the visual amenity of the site.

#### **4.2.6 Pedestrian and Public Safety**

Active work areas must be physically segregated from publicly or easily accessible areas. Access for pedestrians and persons with a disability must be arranged so that access to parking areas, work places, outdoor recreation areas and the office entry is provided without interacting with heavy or high speed vehicles, or busy traffic paths on site.

Where pedestrian routes meet vehicle routes, the following are to apply:

- i) There must be adequate sight lines for the driver of the vehicle to see the pedestrian;
- ii) Routes are to be clearly delineated with line markings, signage and barriers;
- iii) Speed control devices are to be used to control vehicle speed; and
- iv) Signage is to be used to warn and control vehicles and pedestrians.

#### **4.2.7 Equipment Laydown Storage Areas**

Equipment laydown or storage areas must be sealed with bitumen or concrete unless they are being used for temporary purposes, or NQBP has approved deferment or phased implementation of the sealing of the area.

#### **4.2.8 Use of Water Sensitive Urban Design**

The site layout is to incorporate the use of water sensitive urban design elements to manage stormwater and protect its water quality. The design shall consider the effective use of the following:

- i) Direct stormwater away from areas that could potentially contaminate it, through the use of drains or swales. Redirect runoff from paved areas to either landscape areas or to stormwater collection and reuse systems;
- ii) Collect clean rainwater from building roofs and reuse onsite to reduce potable water use;
- iii) Direct stormwater through sedimentation or bio-retention basins, filter strips or grass swales to polish stormwater before discharge;
- iv) For large sites, incorporate ponds or constructed wetlands in the stormwater management scheme where appropriate.

The hydraulic design for the total site drainage system (underground pipes and surface drainage system) must cater for 100 year ARI storm events. The underground stormwater piping must cater for at least a 5 year ARI event, or any higher standard recommended in local Council building standards.

Figure 4-1 Example of incorporation of ponds in a stormwater management scheme



#### 4.2.9 Site Access

Site access shall be provided through a single sealed driveway and footpath cross-over. The cross-over shall be constructed in accordance with local council standards for a commercial / industrial site. The standard council drawings for access / cross-overs are:

- Ports of Mackay and Hay Point: Mackay Regional Council Drawing A3-00773
- Port of Abbot Point: Whitsunday Regional Council Standard Drawing R-0051 and R-0052
- Port of Weipa: FNQROC Regional Development Manual Drawing S1015

Cross-overs must match the level of an existing footpath, or the adjacent footpath may be reconstructed to match the level of the cross-over. There must be no trip hazards caused by the cross-over and footpath.

If a separate entry and exit driveway are proposed, this will require specific approval from NQBP.

Any new cross-over on to Council or State- controlled Roads also requires approval from the relevant Authority.

Internal roads must have sufficient width to cater for the nature of traffic envisaged. A minimum width of 8 m is recommended.

Figure 4-2 Concrete footpath cross-overs are required



#### 4.2.10 Site Traffic Management

Any new developments will have due regard for traffic impacts on the local area and will seek to minimise any impacts. All operational vehicle movements, including circulation, manoeuvring, queuing, loading and unloading goods, delivery and pick-up, and service vehicles (such as rubbish collection) must be accommodated within the lease area.

A traffic management plan shall be provided with a Port Development Application where the site operations will involve a significant change in movement of trucks or cars. This plan will illustrate the circulation and manoeuvring areas; and the design of the vehicle parking and access.

#### 4.2.11 Vehicle Parking

Vehicle parking on-site must be contained within the lease area. Vehicle parking must be segregated from areas dedicated to loading and unloading goods and any waste storage area.

The front entry to a building must not be obscured by vehicle parking. Visitor parking must be located at the front of the site and provide easy access to the main entry. Parking and manoeuvring areas within a site shall be designed such that all vehicles can enter and leave in a forward gear. Temporary parking for construction or development-related vehicles, such as earth moving equipment, must be located away from the front of the building and regular parking area. Parking provided shall comply with requirements in the NCC Building Code of Australia for provision of car spaces and signage for people with disabilities.

All vehicle parking on-site shall be sealed (bitumen or concrete), line-marked, signed and drained in accordance with the latest edition of AS2890 series for off-street parking. The minimum car park bay dimensions are 2.4 m wide by 5.4 m long. The minimum number of vehicle spaces provided shall comply with Table 4-2.

Table 4-2 Number of vehicle spaces required for new developments

Development Type	Minimum Number of Vehicle Spaces
Office	Whichever is greater of: 1 space per employee; or 1 space per 30 m <sup>2</sup> of Gross Floor Area (GFA)
Warehousing	Whichever is greater of: 1 space per employee at the time of peak period (i.e. two overlapping shifts); or 1 space per 100 m <sup>2</sup> of Gross Floor Area
Industry	Whichever is greater of: 1 space per employee at the time of peak period (i.e. two overlapping shifts); or 1 space per 100 m <sup>2</sup> of Gross Floor Area where the development site is less than 5000 m <sup>2</sup> and 1 space per 200 m <sup>2</sup> where the site is greater than 5000 m <sup>2</sup>
Commercial and Other Uses	Tenants shall determine the maximum number of vehicle spaces required and submit this to NQBP for consideration / approval.



Figure 4-3 Car parking is contained within the site and landscaped





## 5 SUSTAINABLE DESIGN

### 5.1 Objectives

- a) Ensure high energy efficiency of new buildings and developments and minimise non-renewable energy consumption;
- b) Design buildings to consider the existing natural environment and to consider the lifecycle impacts in building materials selection;
- c) Reduce the use of potable water and encourage the recycling of water;
- d) Provide a healthy and safe working environment in buildings; and
- e) Minimise waste generation and facilitate reuse and recycling of materials.

### 5.2 Specific Requirements

Because there is a finite limit to all natural resources, NQBP requires natural resources to be responsibly managed in all port developments and port operations through incorporation of sustainable design practices appropriate to the scale of the development. Below are the minimum requirements for all new port development.

Customers are expected to consider the sustainable elements of a project from the initial concept preparation, in the design and procurement stages, through to construction and operation. This should result in a project that has minimised its physical and carbon footprints, protected existing vegetation where possible and meets community expectations.

#### 5.2.1 Building Energy Efficiency

Buildings, including sheds and warehouses, are to be oriented, designed and constructed to maximise the use of natural ventilation (including roof ventilators and operable windows) and lighting and to minimise energy consumption associated with heating, cooling and lighting.

Window glazing with a low solar heat gain coefficient is to be used in all air-conditioned areas to reduce summer heat gain. Light colours are to be used in roofing and external facades to reflect heat. Concrete or slab external walls must be painted. Insulation is to be applied to roofs, ceilings and external walls. Reflective sarking or foil-backed insulation is to be used under metal roofs. Roof ventilation systems, such as perforated eaves and roofing ventilators, are to be included to reduce building air conditioning loads. Air conditioning systems are to be on a timer set to when staff are in the office and which switches off outside these times.

All lighting in buildings is to be energy-efficient, such as fluorescent or LED lighting (see also Section 8, Lighting). Natural lighting is to be incorporated into building design where practicable.

#### 5.2.2 Provide a Healthy Indoor Building Environment

Building materials, adhesives, sealants and finishes should not be harmful to the health of building users. Ensuring materials such as floor finishes (carpet, linoleum) and paint finishes do not contain or release particulate or gaseous contaminants, such as volatile organic compounds, is essential to minimise potential health hazards.

Natural daylight should be maximised through the design and orientation of buildings to maximise the penetration of natural daylight into interior areas of buildings. Shade or daylight controls should be provided as needed.

Air quality is to be maintained by introducing adequate amounts of outside air into the air system. Indoor air quality should meet Australian Standard 1886.2-1991 for mechanical ventilation to provide acceptable air quality. Natural ventilation should be incorporated into the building design through operable windows or engineered ventilation systems to provide fresh, clean make-up air to all building occupants.

Building environmental systems should be responsive to seasonal variations and provide zoning to improve occupant comfort and less energy-intensive operation of air conditioning.

### 5.2.3 Water Conservation

Minimise water use and waste water generation by the use of water conserving features, such as water-efficient toilets, showers and taps. Toilets are to be dual flush cisterns with 3 / 6 litre flush. Water efficient urinals, such as the 0.8 litre Smartflush or waterless, shall be used where practical.

Taps, showerheads and appliances in any kitchen, bathroom and toilet areas are to be a minimum of 4 star rated on the Water Efficiency Labelling Scheme (WELS). Hoses for outdoor use, such as for truck or car washing or site wash down, shall have trigger nozzles to control water flow. Water meters are to be installed on all leased properties to allow monitoring and management of site water use. The type of meter installed must be approved by NQBP before installation.

Drought resistant, local plant species are to be used in any site landscaping so that irrigation and fertilisers are not required.

Large industrial facilities are to collect site rainwater in dams and recycle on site to minimise the use of potable water for industrial uses.

### 5.2.4 Protecting Storm Water Quality

The design of buildings and site improvements should respect the natural water flows of the site to minimize excavation and earth moving in the construction process.

Existing mature vegetation should be retained where possible because of their role in the natural water cycle. Storm water systems that support groundwater recharge, such as bioretention ponds and grassy swales, should be incorporated into the site design. More information on these systems is provided in Section 6.

Any storm water leaving the site should be settled or filtered prior to discharge to protect the receiving environment and not impact on any ecologically sensitive areas.

### 5.2.5 Waste Minimisation

Waste reduction is to be a key consideration during the construction and operation of a new development. Construction waste should be minimised through materials selection and recycling of this waste should be maximised.

During both the construction and operating phases, waste is to be stored in a dedicated area which has easy access for both use and waste collection.

Where practicable, waste material is to be stored in lidded containers to prevent rainwater ingress. Waste is to be segregated into general waste and recyclable material. Waste steel is to be collected and sold for scrap.

### 5.2.6 Protect the Local Environment

Site development must minimise the impact on the natural environment by reducing the footprint of development and by identifying and protecting any sensitive habitat on the site.

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## 5.3 Additional Encouraged Outcomes

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### 5.3.1 Improved Building Energy Efficiency

Solar orientation is to be considered in the design of buildings, by positioning the building to maximise natural lighting, avoid unwanted heat gain and to reduce air conditioning load on the building. Adequate eaves or external shading devices are to be applied to glazed areas to prevent the effects of summer sun, while allowing winter sun to enter the building.

Shade trees should be planted on the west and east of buildings to shade walls and windows from low angle morning and afternoon sun.

Energy efficiency should be a consideration in the selection of electrical equipment and appliances used in the development (i.e. National Minimum Energy Performance Standards and National Energy Star requirements for office equipment).

Consideration is to be given to the installation of renewable energy generating systems to further reduce the greenhouse footprint of the building. Solar hot water systems should be included if possible. Solar power should be considered for hot water systems, landscape lighting and for building use wherever practicable. Consideration should be given to recovery of waste heat from other services, such as air conditioning, for heating hot water systems for larger buildings.

The use of translucent roof sheeting should be considered to increase natural light in warehouses, storage areas and amenity areas and considered for office buildings.

### **5.3.2 Building Materials**

The sustainability of the building materials used in construction should be considered in their selection, and should consider the lifecycle environmental impact of the materials (procurement, construction and eventual disposal).

Sustainable outcomes for building materials can be achieved through mechanisms such as:

- Maximise the use of recycled and bio-based products e.g. blended concrete with fly ash; recycled concrete aggregate; steel, tiles or carpet with recycled content; insulation board made of agricultural waste or products; cleaned bricks.
- Minimise the use of non-renewable construction materials.
- For manufactured products, select resource-efficient engineered materials and construction materials with low environmental impacts across their lifecycle.
- Source timber from certified plantations where the timber is harvested using sustainable practices. Use recycled timbers where practical.
- Select materials to reduce the amount of construction material required and recycled products generated.
- Target the use of low maintenance materials to reduce lifecycle impacts.
- Evaluate all products for their ability to be recycled when they reach the end of their useful life.

### **5.3.3 Additional Water Conservation Measures**

Rainwater harvesting from roofs or collection of stormwater from hardstand areas is encouraged and, where practical, rainwater is to be reused on site for non-potable uses e.g. toilets, wash down, dust control, landscaping etc.

Irrigation systems should be designed to use captured water from rainwater harvesting or stormwater runoff. Subsurface irrigation systems will minimise water loss in application. Minimise use of impermeable surfaces if not required for hard-standing or traffic and design non-operational areas with porous surfaces or landscaping.

## 6 LANDSCAPING

### 6.1 Objectives

- a) Landscaping of the site must be incorporated into the site design.
- b) Landscaping shall enhance the amenity of the development and soften the built form, as well as complementing the natural values of the area. It shall screen the site activities from passing traffic.
- c) Landscaping shall use low maintenance, drought tolerant, native plants that contribute to environmental values of the area.
- d) Landscaping should be used to help achieve the sustainable design outcomes sought for the development, including the sourcing of sustainable landscaping materials.

### 6.2 Specific Requirements

#### 6.2.1 Landscaped Area

Unless approved otherwise by NQBP, the landscaped area of the site required is:

- i) For Commercial and General Port Industry zones: 7.5 % of the leased area
- ii) For other zones: 5 % of the leased area

The landscaped areas will include the street frontage, landscaping in the car parking or staff recreation areas and other landscaped areas on site.

NQBP acknowledges that for some industrial sites, a smaller landscaped area may achieve the landscaping objectives in Section 6.1. Consequently, each application for a smaller landscaped area will be judged by NQBP on its merits.

#### 6.2.2 Landscaping of Road Frontage

With the exception of driveways, the full length of the road frontage of the site shall be landscaped, with a minimum width of 5 metres for arterial and major collector roads and 3 metres for other roads. Application can be made to NQBP for some relaxation of these requirements if site circumstances warrant this. This landscaping shall be part of the total landscaped area nominated in Section 6.2.1.

#### 6.2.3 Landscape Design

The landscape design is to highlight the main entry to the site.

The landscaping area shall include a solid border defining the area. The area is to be mulched to a minimum depth of 100 mm of wood chip, pine bark or similar to reduce water loss and inhibit weed growth. Stones and pebbles may be used along drainage areas as an alternative to wood product. All materials should be from sustainable sources.

Landscape forms, such as mounds or swales, should be included in the landscape design to provide visual interest to the area. Plants native to the local area shall be used. Plants should be selected to be drought tolerant and to provide food for native birds and wildlife, without creating potential hazards for operations of the port. Advice on suitable plant species for each port can be obtained from NQBP's Planning Group.

The area shall be irrigated for a minimum of 12 months to ensure establishment of the new vegetation. Water supply from collected rainwater is recommended, supplemented with potable water as required.

The landscaped area shall include a mixture of low growing ground covers, medium shrubs and taller trees (where there is sufficient width in the landscape design). Plants are to be planted in the ground, not in pots above the ground. Plants shall be planted at a density to achieve a minimum of 75 % foliage cover when mature.

There should be repetition of form, texture and colour through the landscaped area to create a



strong, multi-layered pattern in the landscaping.

Where trees are incorporated into the landscaping, they are not to be planted in any landscaped area less than 5 m in width. The trunks are not to be closer than 2.5 m to the perimeter fence and no part of the tree is to overhang the adjoining site. Lower hanging branches of trees shall be pruned to maintain adequate branch clearance from security fencing. Trees should be used in car parking areas to provide shade, with the trees evenly distributed through the car parking area.

The positioning of landscaping should consider potential benefits to staff amenity, such as screening of unwanted light or knock-out of dust. All landscaping, particularly within car parks and along pedestrian paths, is to consider the security needs of users of the area and allow for passive surveillance of the area.

Where landscaping large areas, NQBP recommends that a landscape design be prepared by a Landscape Architect, however this may not be warranted for smaller sites if the above criteria are complied with.

*Figure 6-1 Examples of landscaping along a site frontage*



#### 6.2.4 Drainage and Waterways

Consider the natural, existing environment and retain natural watercourses and drainage channels where possible, as well as any significant native vegetation that may already exist in these areas. Hard surfaces should drain to permeable ones to reduce stormwater run-off.

Consider the incorporation of swales into a site stormwater design to direct water either from the site and to devices such as pollutant traps, settling ponds or retention basins. Swales may be lined with rock or gravel and planted. All materials used should be from sustainable sources. Where the water flow is not continuous and the swale is in a large grassed area, a swale could also be turfed as an alternative.

Discharge points are not to be located in areas that may adversely impact on areas of high ecological value.

*Figure 6-2 Examples of swales*



In the event of major weather events, the drainage system must be designed to handle storm surges or flooding by effectively draining the water run-off to an appropriate location. Drainage systems must comply with the Building Code of Australia and any relevant Australian Standard. The design requirements of the pipe and drainage system are presented in Section 4.2.7.

#### **6.2.5 Landscape Maintenance**

Landscaped areas are to be well maintained and kept free of weeds. Dead or unhealthy plants are to be removed and replaced with new stock as necessary to maintain the original landscape design.

Rubbish from the landscaped area, including fallen branches or fronds, is to be removed on a regular basis. Pruning shall be carried out on at least an annual basis to encourage desirable plant growth.

Lawn areas are to be regularly mown and kept in a weed free state.

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### **6.3 Additional Encouraged Outcomes**

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#### **6.3.1 Xeriscaping**

NQBP encourages the use of xeriscaping principles for the design of any landscaping. Xeriscaping is landscaping and gardening that reduces or eliminates the need for supplemental water from irrigation through design. Xeriscape designs will often need no supplemental watering after an establishment period, unless there is an extreme drought.

In xeriscape design, plants are grouped by water need to limit areas that need to be watered. Native plants that are drought tolerant are favoured. Grassed areas are minimised.



## 7 SIGNAGE

### 7.1 Objectives

- a) Provide the opportunity for port businesses to identify their business and location within their own lease boundary.
- b) Provide clear information or directions for port users and visitors.
- c) Ensure site entries and exits are clearly identified.
- d) Ensure signage does not compromise port or visitor safety and has been designed and erected to withstand cyclonic conditions.
- e) Ensure signage does not detract from the visual amenity of the port and is effective and consistent across the port in appearance and design.

The signage guidelines below provide direction on the type, form and design of signage supported within the port environment and apply to all development on port land.

Because there does not appear good consensus on the naming of the types of signs, the guidelines below should be used in conjunction with the descriptions provided in the Glossary of this document.

### 7.2 Specific Requirements

#### 7.2.1 Approvals Required

Signage does not need to be specifically approved by NQBP if it complies fully with the following guidelines. NQBP may request removal of non-compliant signs at the site lessee's cost.

NQBP approval must be sought for any signs proposed that do not comply with all of the guidelines below. Sufficient details must be provided (size, wording, materials, supporting structure, location etc) to allow an evaluation of the sign. There is no fee for approval of signage. Signs that may adversely affect the streetscape will not be approved.

Road and traffic signs within the port are the sole responsibility of NQBP. A tenant or port user shall not erect any road or traffic signs, apart from temporary signs authorised by NQBP for construction or maintenance activities.

#### 7.2.2 Meets Local Council Requirements

Any signs erected must also comply with published standards of the Local Council or State Government where the leased sites are next to a Council or State-controlled road.

#### 7.2.3 Colours and Materials

All signs must be constructed of high quality materials that are weather proof and will not deteriorate over time or due to weather.

Colours and designs of signs must complement the site development and the overall port. Fluorescent colours are not allowed without the express permission of NQBP.

#### 7.2.4 General Requirements

The following provisions apply to all proposed signage:

- i) The content of signage must be directly related to the site use. Third party signage is not allowed;
- ii) All signage must be wholly located within the lease boundary;
- iii) Signs may not be erected near or above the roofline of a building;
- iv) Signage is not allowed to be painted on rooftops;
- v) Other than Directional/Security/Safety signs, no signage is to be attached to the fence frontage;
- vi) Signage may be illuminated but cannot flash, revolve, move or contain mechanisms that give

- the impression of movement; and
- vii) Light from a sign is to be minimised and confined on site. Any light associated with a sign must not create a nuisance to adjoining sites, to port navigation or to vehicular traffic.

### 7.2.5 Business Identification Signs

Each site is permitted to have a business identification sign near its site entry point. This sign will identify the business name and may include details of the nature or type of the business (e.g. “light vehicle workshop” in the sign below), business hours and contact phone numbers. Business identification signs are not allowed to be attached to a fence.

Any business sign must be installed within the lease area. A sign must not be erected on a road reserve within the port or on any footpath.

Wall Signs and Freestanding Signs are allowed for Business Identification Signs. The types of Freestanding Signs allowed include pole signs and pylon signs, as described in the Glossary of this document. All other signage such as banners, flags, A-frame, and third party signs are not supported.

#### *Freestanding signs*

A Freestanding Sign is a sign that is independent of a building and is supported by one or more columns, poles or pylons. Freestanding signs allowed include pole signs and pylon signs. Photos of two examples are provided below.

In addition to the general provisions that relate to all signs, the following also apply:

- Only one Freestanding Sign is permitted per street frontage;
- The Freestanding Sign must not exceed 4.5 m<sup>2</sup> in sign face area per side and cannot exceed 6 m in height.
- The Freestanding Sign may identify the business, but must not contain any advertising content about the quality or range of the company’s products or services or about other company’s products or services.
- The Freestanding Sign may be combined with a Directional/ Security sign.

*Figure 7-1 Examples of acceptable freestanding signs – pole design*



Figure 7-2 Example of a pylon design freestanding sign



### Wall or Facade Sign

A Wall or Facade Sign is defined as a sign that is painted or affixed parallel to a wall of a building. In addition to the general provisions that relate to all signs, the following also applies to Wall/ Facade Signs:

- i) The sign must not project more than 300 mm from the facade;
- ii) It must not exceed 4.5 m<sup>2</sup> in sign face area or exceed 20% of the area of that wall;
- iii) It must be wholly contained within the outline of the building and complement its scale and design; and
- iv) It must not contain any advertising content.

Figure 7-3 Acceptable wall signs



### 7.2.6 Safety Signage

Safety signage such as HAZCHEM classification or Dangerous Goods placarding, Personal Protective Equipment (PPE) signage or site speed signs may be attached to a building or on a security fence near the site entry point or on a free standing sign.

Any sign erected must not endanger public or port user safety. It must be securely fastened to the structure supporting it. Fixings and the supporting structure must be designed to withstand cyclonic winds expected in the area. A sign must not obstruct or impede the sight lines required for the safe movement of traffic into or from a street, vehicle circulation path etc.

The sign must not detrimentally affect the structural integrity of the building or structure on which it is attached.

### 7.2.7 Directional and Security Signs

Directional/Security signs direct traffic and outline security/safety matters relating to the site. They are usually attached to the front fence of a site but can be combined with a Freestanding Sign.

Only one Directional/Security Sign is permitted per 25 linear metres of road frontage lease boundary. The Directional or Security Sign must not exceed 0.5 m<sup>2</sup> in area.

The Directional or Security Sign must be fixed to a boundary fence, wall or gate with a permanent fixing method or otherwise combined with a Freestanding Sign.

The Directional or Security Sign must be metallic.

#### **7.2.8 Construction Sites**

The above requirements also apply to construction sites. Any sign associated with a construction site must be removed within seven days of completion of the construction activities.

#### **7.2.9 Advertising Signs**

Advertising or promotional signs, other than the single business identification sign at the site entry, are not allowed within the port area.

## 8 LIGHTING

### 8.1 Objectives

- a) Site lighting provided must provide a safe working environment;
- b) Lighting must not adversely impact surrounding development, operations or sensitive environmental areas; and
- c) Energy efficiency and greenhouse gas emissions should be a consideration in the design and selection of all site lighting, with an aim to minimise non-renewable energy consumption.

### 8.2 Specific Requirements

#### 8.2.1 External Lighting Design

External lighting should be designed to light up the buildings and ground without spilling into other buildings, neighbouring sites, the sky, or surrounding environmental areas. Lighting is to be positioned so as not to cause distraction to vehicles on internal or external roads or to interfere with navigational aids.

Light spill outside the site boundary is to be avoided through:

- Directing lights downwards. No light should be directed more than five degrees above horizontal;
- Using light shades to reduce light spillage to sensitive areas; and
- Avoiding excessive height of lighting structures.

#### 8.2.2 Safety

Lighting levels are to be provided in a manner sufficient to meet operational requirements and to meet the relevant Australian Standards, without causing light spill to adjoining properties.

Appropriate lighting should be provided at key locations such as pedestrian paths, driveways, parking areas, building entrances / exits, so to identify and provide safe access for employees and visitors.

#### 8.2.3 Energy Efficiency

Energy efficient lighting technologies are to be used. Energy use with efficient lighting technology can be reduced by up to 82% (Office of Environment & Heritage, 2014). Numerous energy efficient technologies are available, such as fluorescent lamps, metal halide lamps and LEDs, and an assessment of the appropriate technology for the particular application should be undertaken by the project proponent. The type of lighting to be used should be advised to NQBP in a development application.

### 8.3 Additional Encouraged Outcomes

#### 8.3.1 Best Practice Lighting Solutions

The measures below are not mandatory but are encouraged by NQBP.

Best practice lighting solutions for buildings would involve the following:

- i) Use different energy efficient lighting solutions for different areas, based on the lighting needs of the area.
- ii) Incorporate natural lighting into the building design through the use of measures such as skylights in buildings or translucent roof panels in warehouses;
- iii) Link artificial light use to the natural light levels using sensors and smart control systems to minimise energy use;
- iv) Assess options for zoning to allow lights in specific areas to be turned off when areas are not being used, as well as dimming of lights to reduce energy consumption;
- v) Use occupant sensors that switch off room lighting when the space is not occupied.



## 9 FENCING AND SECURITY

### 9.1 Objectives

- a) Leased sites are to be fenced to meet the port's security and safety requirements, which will include where appropriate meeting the requirements of the *Maritime Security and Off-Shore Facilities Security Act 2003* for security regulated facilities under the Act.
- b) Fencing is not to adversely affect the port amenity or streetscape.

### 9.2 Specific Requirements

#### 9.2.1 Areas to be Fenced

All sites are to have permanent security fencing around their complete site, unless exempted by NQBP. The fencing is to follow the lease boundary.

#### 9.2.2 Permanent Fencing Standard

All fencing is to be chain wire mesh, at least 1.8 m high, with an option to include an additional 3 strands of barbed wire along the top above the wire mesh at the proponent's choice. Fences are not to exceed 3 m in height, including the barbed wire.

All permanent fencing must comply with the latest version of AS1725: Chain-link fabric security fencing and gates. Chain wire is to be PVC coated and black in colour for all fencing. Support posts for fences must be vertical only, with no kink (crank) to turn the barbed section inwards or outwards. An exemption to this may be allowed if the fence is on an external boundary and if this is a specific requirement for the facility under the *Maritime Transport and Offshore Security Act*, however NQBP's specific authorisation is required in this situation. Support posts shall be black in colour along the front fence or any fence bordering a road. Support posts in side or rear fences may be either be black or galvanized. Electrified fencing is not permitted.

In some cases, solid Colorbond fences may be permitted for security or privacy, however NQBP's specific approval for these is required.

Figure 9-1 Examples of acceptable security fencing- steel mesh in black



#### 9.2.3 Gates

All access points are to be secured with black chain wire mesh gates, or black steel palisade security gates where a higher level of resistance to forced entry is required. All gates must slide or open into the site.

Gates for truck entry must be setback from the road to ensure no truck queuing occurs on a road (see Section 4.2 for further information).



Figure 9-2 Examples of acceptable gate standards



#### 9.2.4 Temporary Fencing

Temporary fencing may be used around construction sites. These fences must be installed prior to the commencement of any construction activities and removed within seven days of completion of construction activities.

Temporary fences are to use chain wire mesh. Mesh and support posts may be galvanized due to their temporary nature.

## 10 INFRASTRUCTURE AND SERVICES

### 10.1 Objectives

- a) All lease sites are to have access to power, street lighting, potable water, waste disposal and telecommunications.
- b) Services are to be provided in a cost-effective, efficient and equitable manner.
- c) All infrastructure and services are to be designed by the proponent to accommodate future planned development.
- d) Infrastructure and services must be designed to meet relevant Australian Standards and comply with the National Construction Code / Building Code of Australia.

### 10.2 Specific Requirements

#### 10.2.1 General Requirements

The proponent must ensure that the design of all infrastructure and services to a site allows for and does not compromise planned future development or provision of infrastructure. Infrastructure must be appropriately located on and off site to allow for additional infrastructure capacity. Services must be designed for easy maintenance and avoid areas of high conservation value.

Site planning must prevent impacts on underground services. Where it is proposed to build over existing utilities, specific planning approval from NQBP is required.

#### 10.2.2 Potable Water Supply

Proponents must connect at their own cost to the port or Council's potable water supply, where available, through a metered connection. NQBP must approve the proposed connection point.

To minimise the use of potable water, proponents are encouraged to investigate the use of rainwater harvesting for application on site for irrigation, toilets and industrial cleaning use.

#### 10.2.3 Fire Water Supply

Proponents are responsible for provision of fire fighting capability for their development. Where existing mains pressure does not meet specific site fire water requirements, the proponent is responsible for the installation of any fire water storage or booster pump/s required on the site to meet Queensland Fire and Emergency Services (QFES) requirements. Proponents for new developments are encouraged to check water supply rates and pressures available at the site early in the design of the facility.

Additional fire suppression systems may be required by NQBP where a fire in the premises may pose a significant risk to NQBP or adjacent land uses.

#### 10.2.4 Power and Telecommunications

Each premise must have connection to power and telecommunications, arranged at the proponent's cost. Conduits must be provided to enable the future provision of fibre optic cabling.

The proponent must ensure that all electrical and telecommunications infrastructure is suitable for marine and industrial environments and complies with relevant Australian Standards.

#### 10.2.5 Sewage

If there is a reticulated sewage system available to the leased property, then the proponent is required to connect any non-trade waste water to the system at their cost.

Where a reticulated sewage system is not available in the area, then a septic system with appropriate irrigation or transpiration system, or an on-site waste water treatment plant, must be used. Installation and maintenance of the plant is at the proponent's cost. These plants must be regularly maintained and comply with all Local Council requirements, including registration and plumbing approval if required. Any treated discharge must not cause any health or

ecological impacts or harm to the surrounding environment.

#### **10.2.6 Solid Waste**

Each leased property must arrange at least a weekly solid waste collection service for their leased site, which will include a separate service for recyclables where provided in the area. All waste must be stored in lidded containers.

#### **10.2.7 Kerb and Channelling**

If not already provided, each site is to have a concrete kerb and channel constructed at the proponent's cost for the full frontage of any road. Where a new cross-over is installed for a development, kerb and channelling must be tied into the new cross-over (see also Section 4.2.8).

#### **10.2.8 Roadworks**

Roadworks, including car parking areas, shall comply with Main Roads specifications, unless NQBP expressly approves an alternative specification.

## 11 SAFETY AND HAZARD MANAGEMENT

### 11.1 Objectives

- a) Provide a safe working environment for port users and visitors.
- b) Minimise the hazards and risks of new developments to port users and local communities.
- c) Locate hazardous industries or infrastructure away from other industries and any sensitive receptors.

### 11.2 Specific Requirements

#### 11.2.1 Compliance with legislation and standards

All existing and new developments must comply fully with Commonwealth and State laws relating to safety or protection of the environment. The proponent will obtain and maintain any licences or permits required under legislation for the construction and on-going operation of the facility. New development must comply with the *State Planning Policy* and associated guidelines and mapping.

#### 11.2.2 Fire Safety

Developments shall comply with building fire safety requirements of the NCC Building Code of Australia, as well as any requirements of Queensland Fire and Emergency Services.

The proponent is responsible for the provision of appropriate fire hydrants, fire exits, fire alarms, fire sprinkler systems, fire hoses, portable fire extinguishers and other relevant firefighting infrastructure.

Proponents shall ensure staff are trained in emergency response and evacuation procedures.

A muster or assembly area must be clearly designated and emergency signs showing building exits must be in place.

#### 11.2.3 Restriction on Operations

All activities required for operations of a site, such as truck movements and staff parking, must be undertaken within the lease boundaries.

#### 11.2.4 Public Access

Public access must be effectively managed to ensure it does not interfere with the safe operation of the site or overall port, or cause risk to the public. Active work areas must be physically segregated from publicly accessible areas, such as visitor and staff parking.

#### 11.2.5 Disability Access

Disability access to new buildings and for additions or major alterations to existing buildings must be provided if required by the Building Code of Australia.

#### 11.2.6 Materials Storage

The storage of any materials in drums, stockpiles or other means must be safe and not pose a safety, environmental or health threat to site users, the public or visitors, or to adjoining areas. Unauthorised access to the storage area must be effectively controlled through appropriate security measures. Materials storage areas must not be in the front of the site and they should be screened to protect visual amenity.

The temporary or permanent storage of empty shipping containers, drums or pallets must be carried out in a safe manner that does not pose to a risk to site users, visitors, the general public and neighbouring site users. Empty drums must be stored such that rainwater cannot accumulate in the drums through means such as lids or storing under cover.

Fuel, paint and thinners must be stored within an impervious bunded area that is designed in accordance with AS1940 (see the following section for more information). Underground fuel storage is not permitted-fuel storage must be in appropriately bunded above-ground tanks,

unless a special exemption is provided by NQBP.

#### **11.2.7 Storage of Hazardous or Flammable Materials**

Hazardous or flammable materials must be handled and stored in accordance with Australian Standard AS1940: *Storage and handling of flammable and combustible liquids*, as well as requirements of the *Dangerous Goods Safety Management Act 2001*, *Flammable and Combustible Liquids Regulation 1994* and the *Australian Code for the Transport of Dangerous Goods by Road and Rail*. The proponent must hold any licence required for such storage.

The storage of the materials must not pose a safety or health risk to any adjoining areas or people and must be appropriately separated from any sensitive land uses. Bunding must be provided around stored material to contain any spills that may occur.

#### **11.2.8 Risk Assessments**

Proponents for a new development involving dangerous goods are to undertake a risk assessment to NQBP's requirements and supply this to NQBP as part of the Port Development Application. Information provided will include the identification of all significant safety or environmental risks from the development and proposed mitigation measures. NQBP reserves the right to undertake its own risk assessment and proponents must supply the information requested by NQBP to undertake this assessment.

If a new hazardous facility or a material expansion of an existing hazardous facility is proposed, the risk assessment will include updating the overall port's risk contours for the development. NQBP will undertake this work at the proponent's cost.

#### **11.2.9 Pipelines**

Any pipelines external to a proponent's site must only be located within a pipeline corridor designated and approved by NQBP.

Pipelines are to be generally above ground. Where underground pipelines are approved by NQBP, they must:

- be clearly marked throughout its length;
- have a leak detection system; and
- be suitably protected against corrosion.

#### **11.2.10 Wharf Bunding**

For new developments, wharves where petroleum products are loaded or unloaded in bulk must be bunded to contain potential spills from hoses or pipework connecting to a ship.

#### **11.2.11 Traffic Management**

Where construction or operation of a site will result in a significant increase in traffic to the port area, the proponent must engage a traffic engineer to prepare a traffic study, which must identify potential traffic impacts and present recommended solutions. This traffic study must be submitted as part of the Port Development Application.

## 12 ENVIRONMENTAL MANAGEMENT

### 12.1 Objectives

- a) Prior to the commencement of any construction activities, appropriate planning and design of a project must be undertaken to minimise environmental impacts and to incorporate sustainable design features from the outset of the development.
- b) Any discharges from the site are to be identified in the project planning stages and appropriately managed through design to protect the environment.
- c) Construction and operational activities must be undertaken to protect local and regional environmental values and minimise any adverse environmental impacts.
- d) Activities must be appropriately managed to prevent any contamination to soil, groundwater or any receiving environment.
- e) The amenity of neighbouring sites and local sensitive areas, such as air and noise quality, is to be protected through appropriate controls and management techniques.
- f) The proposed development must not adversely impact on surrounding ecological system features, including air quality, water quality, soil quality and habitat values.

### 12.2 Specific Requirements

#### 12.2.1 Compliance with Legislation and Policies

All development must comply fully with State and Commonwealth environmental and planning legislation and policies. The proponent is responsible for applying for and maintaining compliance with any environmental or planning approvals, licences or permits that may be required under legislation.

#### 12.2.2 Environmental Assessment

Proponents are to provide an environmental assessment to NQBP of the proposed development. The assessment will include both the construction and operational stages of the development. This assessment will include the following as a minimum:

- i) Identification of all potential emissions and discharges to the environment, including solids, air, water (surface water and groundwater), noise and wastes (solids and liquids). For larger projects, estimate both flow rates and contaminant loads of emission streams where possible.
- ii) Assessment of potential impacts on the receiving environment of these discharges and emissions.
- iii) Details of any proposed flora and fauna removal required by the project and assessment of the environmental values of this flora and fauna and the impacts of the proposed disturbance.
- iv) Details on the actions to be taken to minimise any adverse impacts of the development.

For any significant port development, the cumulative impact of the development in addition to existing port developments will need to be evaluated by the proponent.

NQBP may request preparation of a full Environmental Impact Statement (EIS) by the proponent for a major or high impact project.

#### 12.2.3 Management Plans

Proponents for new port developments must supply both a Construction Environmental Management Plan for the construction stage and an Operational Environmental Management Plan for the operational stage of the development (the EMPs), unless exempted by NQBP for smaller projects. These plans must present the environmental assessment undertaken for the construction and operational phases and provide the proposed mitigation measures to manage any identified impacts. These plans will include measures to ensure the sustainability of the development as identified in Section 5 of these Guidelines.



The Management Plans must include the following information:

- i) Objective sought e.g. manage the construction activity to control noise emissions and prevent noise nuisance to neighbours;
- ii) Details of the required action e.g. undertake construction activities between particular times; vehicles to have noise suppression devices etc;
- iii) Responsibility for implementing the action;
- iv) Timing of the action e.g. throughout construction activities;
- v) Performance indicators e.g. noise levels below specified limits; no noise complaints etc;
- vi) Monitoring e.g. noise monitoring at defined times and locations; and
- vii) Reporting e.g. complaints recorded and reported to NQBP etc;
- viii) Corrective Actions e.g. action to be taken if issues are found.

If requested, NQBP can provide a template for preparation of the EMPs that will meet its requirements.

#### **12.2.4 Consistency with Port Environmental Protection Measures**

NQBP has published Port Environmental Management Plans (Plans) for most of its ports on its website. These Plans document areas of environmental significance within each port and provide current environmental values in the port. Some Plans also provide the minimum control measures that will be accepted by NQBP for development in each port. Proponents should review the published Environmental Management Plan for the port before preparing their EMPs.

Specific control measures required in NQBP ports are provided in the following sections. These provide minimum requirements only. Each development should be assessed by the proponent to identify potential environmental risks and project specific management plans that need to be developed to address all identified risks, not only those presented below.

#### **12.2.5 Air Quality**

Proposed new developments should not generate odours and should have regard to air emissions impact on the local area.

Dust emissions must be effectively controlled during any construction activities, such as site clearing, or where bare soil is exposed. Controls shall include measures such as regular water application to exposed soil or soil stockpiles, application of dust suppressants, and revegetation or sealing of bare soil as early as practical.

Stockpiled products should be stored in buildings where practical to minimise dust emissions. Where the size of the stockpile may make this impractical, a range of measures to minimise and monitor dust emissions will need to be proposed in the Port Development Application. Products with an offensive odour must only be stored in a sealed building. No burning of any waste, including cleared vegetation, is allowed within a port area.

Vehicles using the port must be maintained in good working order and turned off when not in use to minimise emissions to air. Site areas that are used by vehicles are to be sealed to minimise dust emissions, except during a construction program or when a phased development of the site has been approved by NQBP. Where areas are not sealed, appropriate measures to minimise dust must be used.

Greenhouse gas emissions are to be minimised through use of energy efficient technologies and practices. Specific measures for energy efficient buildings are provided in Sections 5 and 8.2.3.

#### **12.2.6 Noise and Vibration**

Operations in NQBP ports are 24 hour activities. However, all port users are still required to minimise noise from activities through appropriate management actions, with particular focus on activities at night that could impact on sensitive receptors.

Proposed new development will have regard to impact on the noise environment of the local area and not adversely affect the amenity of neighbouring industries or communities. Appropriate noise mitigation measures are to be incorporated into design and procurement. Site layout will

locate any potential noise sources away from sensitive receiving environments.

All buildings and equipment are to be designed or selected to minimise noise emissions. Noise emissions of mobile equipment are to be managed through silencers and through a policy of turning off the equipment when not in use.

Construction activities should generally be limited to 6.30 am to 6.30 pm Monday to Saturday, with no work on Sundays or public holidays. Certain circumstances, such as a remote location or particular work activities, may warrant extensions to these times and any such requests for time extensions will need to be approved by NQBP.

#### **12.2.7 Stormwater Quality**

The development must not discharge pollutants into surrounding waters or cause environmental nuisance or harm.

Measures must be implemented to ensure that erosion is controlled and sediment is not released into the surrounding environment. Erosion and sediment control measures must be included in the Construction EMP if any erosion sources are identified.

For larger projects or sites, a Stormwater Management Plan is to be prepared and supplied to NQBP as part of a Port Development Application. NQBP can provide advice on request as to whether one is required.

Site clearing for construction activities should be avoided where possible between December and April each year to avoid the wet season. For larger developments, carrying out clearing in stages where possible is recommended, with rehabilitation of sites occurring at the earliest opportunity in the development.

First flush stormwater from impervious areas is to be captured and treated to prevent contaminants leaving the site. The treatment will be dependent on the site use, but as a minimum it must include a sediment and litter trap. An oil and grease trap is to be included if there are oil and greases stored or used on site. Final polishing of stormwater through bio-retention basins is recommended before release for larger sites.

Stockpiles must not be located across stormwater flow paths. Permanent stockpiles should be contained within an enclosed structure where practical.

Sections 5 and 6 provide some additional specific requirements for sustainable building design practices for stormwater management.

#### **12.2.8 Groundwater Quality**

Construction and operation activities must be undertaken to prevent contamination of groundwater and appropriate controls must be installed to minimise the likelihood of groundwater contamination.

Where there is potential for groundwater impacts, a groundwater monitoring program must be put in place and sufficient on-going monitoring undertaken to demonstrate minimal impact on groundwater quality as a result of on-site activities. The proposed program will need to be submitted to NQBP for approval and monitoring results provided to NQBP on an annual basis.

#### **12.2.9 Land Contamination**

Contaminants must not be discharged to the ground in a manner that could cause land contamination. Any activities that may result in land contamination must be identified and appropriate management strategies implemented.

No waste is to be buried or burned on site (see also Section 5.2.5 on Waste Minimisation). Any fill used on the site is to be free of contaminants. Hazardous materials must be stored in an impervious bunded area to contain any spill if it occurs (see "Storage of Hazardous or Flammable Materials" in Section 11.2.7 for further information).

NQBP recommends that proponents undertake a contaminated land investigation prior to occupation of a new lease area, unless such an investigation had been carried out by the previous lessee of the site on their departure or by NQBP. The land investigation is to minimise

any future liability to the lessee for site clean-up not caused by the lessee's activities. Any investigation undertaken should comply with the Queensland Contaminated Assessment Guidelines (DEHP, 2014) and the *National Environment Protection (Assessment of Site Contamination) Measure 1999*.

#### **12.2.10 Waste Management**

See outcomes in Section 5.2.5 (Waste Minimisation), Section 10.2.5 (Sewage) and Section 10.2.6 (Solid Waste).

#### **12.2.11 Acid Sulphate Soils**

Prior to any new development occurring where soils will be disturbed below a depth of 5 m AHD, or filling of greater than 0.5 m in amounts greater than 500 m<sup>3</sup>, testing for acid sulphate soils should be undertaken by a suitably qualified person. If acid sulphate soils are identified, a management plan for the site is to be prepared by a suitably qualified person in accordance with State requirements and submitted to DEHP for approval. A copy of this plan must be supplied to NQBP as part of the PDA.

#### **12.2.12 Flora and Fauna**

Development on land adjoining an area of high ecological value, which includes areas zoned by NQBP as Environmental Protection, shall include appropriate measures to protect the area, such as setbacks (see Section 4.2.3), landscaped buffers (see Section 6), stormwater quality (Section 12.2.7), light spill (see Section 8) and noise (see Section 12.2.6) to minimise adverse impacts on these areas. Further information on these matters is provided in the relevant section. A buffer zone from areas of high conservation value for all development activities must be clearly shown in design drawings and adhered to in practice.

No vegetation clearing is to occur without prior assessment by a suitably qualified professional of the values and significance of the flora and fauna affected, including assessment of potential breeding places of native animals. No vegetation clearing is to occur without appropriate approval from the relevant administering authority if required. Development must not disturb vegetation protected by the *Vegetation Management Act 1999* or *Nature Conservation Act 1992* without either an approval or an exemption under the relevant Act.

Where the Port Land Use Plan includes designation of a Wildlife Corridor across the proposed development site, the PDA will need to show how the wildlife connectivity is being maintained through the proposed development.

See also objectives for landscaping (Section 6).

## 13 HERITAGE PROTECTION

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### 13.1 Objectives

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New development must not adversely affect areas of historical significance or indigenous cultural heritage.

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### 13.2 Specific Requirements

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#### 13.2.1 Identified Cultural Heritage Sites

For any previously undeveloped areas, proponents should undertake a search of the Cultural Heritage Register that is maintained by the Department of Aboriginal and Torres Strait Islander and Multicultural Affairs (DATSIMA) to determine the presence of any areas of cultural heritage significance on the site. Sites with known or suspected indigenous cultural heritage values must be managed in accordance with the *Aboriginal Cultural Heritage Act 2003*. If there are any identified significant or listed areas on the site, a management plan will need to be prepared by the proponent and submitted to DATSIMA detailing how those cultural heritage values will be protected.

Measures to mitigate impacts to identified non-indigenous cultural heritage values must be established and documented prior to any new construction, demolition or change of use.

For a major development on previously undeveloped or undisturbed land, a survey of the site is to be undertaken by an archaeologist, assisted by representatives of the local Traditional Owners, and a Cultural Heritage Management Plan prepared.

#### 13.2.2 Archaeological Artefacts

If an archaeological artefact is discovered during site preparation, work in the area must be immediately ceased and actions must be taken in accordance with the *Queensland Heritage Act 1992*.

## 14 MARINE INFRASTRUCTURE AND TIDAL WORKS

### 14.1 Objectives

- a) Works are to be undertaken in compliance with all legislative requirements;
- b) Proposed works are not to affect or impede current or future port operations;
- c) Works are to be designed for potential climate change impacts;
- d) Marine structures, including pavement areas and concrete, must be designed and constructed to achieve the intended life of the structure;
- e) Works are to be undertaken to minimise potential environmental impacts and protect environmental values of the marine environment; and
- f) Marine infrastructure is to be safe for its users and the public.

### 14.2 Specific Requirements

#### 14.2.1 Legislative Compliance

Approvals required under both State and Commonwealth legislation must be obtained by the proponent for all tidal works, in addition to approvals required from NQBP under the Port Development Approval process.

Drawings submitted must be “For Construction” drawings that have been signed by an RPEQ as:

- i) Complying with all relevant Australian codes; and
- ii) That the structure is safe and structurally sound for the intended use.

Preliminary drawings will not be accepted for approval but are recommended to be submitted to NQBP for comment prior to preparation of final drawings.

Information on the following must be provided as a minimum:

- i) Land tenure for the infrastructure and any connections to the land;
- ii) Details of all services to be provided, including electrical, water, waste collection, safety equipment to be provided (access ladders, life rings, man overboard alarms and recovery systems), fire hydrants and hose reels, spill equipment and personnel meal rooms etc.
- iii) Corrosion protection systems;
- iv) Lighting (safety, security etc);
- v) Navigational aids/ warning signs (lighting, buoys, markers, signs);
- vi) Anchorage systems for floating plant during construction;
- vii) Berthing or mooring arrangements for all vessels;
- viii) Cyclone mooring provisions; and
- ix) Details of any refuelling or reprovisioning proposed.

Regulatory agencies may also require other information in addition to the above.

#### 14.2.2 Design for Climate Change

The design of any new marine infrastructure must address potential sea level rise over the life of the project, as well as storm surge from increased cyclone intensity over that period. The standard sea level rise is taken as a minimum of 0.8 m rise over the next 100 years. The application for tidal works must provide sufficient detail of this assessment by the proponent.

#### 14.2.3 Vessel Simulations and Modelling

The Proponent must demonstrate to the satisfaction of NQBP and the Regional Harbour Master that the proposed configuration of maritime structures provides for adequate navigation and vessel manoeuvring clearances. NQBP may require the Proponent to carry out vessel simulations and / or modelling and the like of maritime structures and may require a representative of NQBP to be present during the undertaking of such studies or tests. The costs of attendance, including travel and accommodation, will be at the Proponent's cost.



#### 14.2.4 Impact on Port Operations

The design and construction of tidal works must not impede either current or possible future port operations. The proponent must assess the proposed development for consistency with both the approved Land Use Plan, as well as any published Long Term Port Development Plan or Port Master Plan prepared by either NQBP or by the Department of State Development for the port.

On completion of any construction activity, any construction materials that may have fallen to the seabed or been deposited onto tidal lands must be removed and a certification of such through a seabed inspection must be provided to NQBP.

#### 14.2.5 Vehicle Access

If vehicles are to access a new marine infrastructure, the infrastructure is to provide adequate room for vehicle manoeuvring. A parking plan and traffic management plan is to be provided.

New wharves and jetties must be designed for and provide access to waste service vehicles and emergency response vehicles as appropriate.

#### 14.2.6 Protection of the Environment

The development must not discharge pollutants to the surrounding waterways or cause harm to the marine environment.

The proponent must address marine environmental values as documented in NQBP's Port Environmental Management Plan as a minimum and achieve the outcomes sought in the document through appropriate environmental controls.

Both a Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP) must be submitted as part of the application. For the CEMP, particular focus is required on activities over or in water e.g. abrasive blasting, spray painting, pile driving etc. For the OEMP, matters such as noise, light, stormwater management; waste management; marine pest management; ongoing maintenance; and spill prevention and response would be key matters to be addressed.

Both plans must include an environmental monitoring and reporting program, addressing the environmental matters in Section 12 as a minimum.

#### 14.2.7 Safety and Emergency Response

Marine infrastructure is to be designed for safe use. A Safety Management Plan must be prepared, covering both construction and operational phases. Public as well as worker safety must be addressed.

The proponent is also required to prepare a Marine Operations Plan to cover both the construction and on-going operation of the marine infrastructure. This plan is to include measures to ensure the marine safety of simultaneous marine activities by one or more unrelated contractors, proponents or port users. The proponent is to work with NQBP to develop protocols and specific requirements to appropriately deal with simultaneous operations.

An Emergency Management Plan must be submitted with the development application. This must address the following as a minimum:

- Cyclone response procedures;
- Fire;
- Man overboard; and
- Oil or chemical spill.

Cyclone response plans must be established in consultation with NQBP and the Regional Harbour Master. The Proponent must ensure that its response plan references the mandated governance role of NQBP over the Port and the responsibilities of the Regional Harbour Master who has ultimate sanction on Port closure.

Oil and chemical response plans must be established in consultation with NQBP. It must provide procedures for responding to a spill (e.g. stopping any leak at the source, notifications to NQBP

etc). It must include the statutory roles and responsibilities for oil spill response in Queensland.

#### 14.2.8 Design Requirements for Maritime Structures in NQBP Ports

##### *General Requirements*

The design of maritime structures is to comply with the latest version of AS 4997 – *Guidelines for the Design of Maritime Structures*.

For structures or facilities not covered by AS 4997, other design references appropriate to the structure or facility shall be used. For example:

- AS 3962 – Guidelines for Design of Marinas for Marinas and Boat Launching Ramps;
- BS 6349 – Maritime Structures for Rock Armoured Structures;
- PIANC Guidelines and technical reports, or
- Any other relevant international standard or industry best practice guidelines or technical reports.

For situations where codes, standards and guidelines are insufficient to guide the design of a maritime structure or facility, NQBP may require the Proponent to undertake physical modelling or vessel simulations to provide reliable data for the design. In situations where consideration of metocean conditions will form a significant part of the design of any maritime structure or facility, the basis of design must be discussed and agreed with NQBP.

In situations where it is necessary or likely for a maritime structure to carry any kind of service (water, power, lighting, telecommunications, wastewater, fuel and the like), provisions for such services must be discussed and agreed with NQBP.

Where a proponent considers a variation to the minimum standards above are warranted, the justification is to be provided to NQBP and NQBP's specific approval for such a variation obtained in writing.

##### *Specific Requirements*

Specific design requirements are provided in Attachment 2.

#### 14.2.9 Dredging Requirements

The proponent must provide details of any dredging required to support new marine infrastructure. Dredging should be minimised as much as possible.

For ports within the Great Barrier Reef World Heritage Area, under the *Sustainable Port Development Act 2015*, all capital dredged material must be either beneficially reused or brought onto shore. No capital dredged material may be disposed offshore.

Prior to commencement of any dredging project including approvals, the proponent should engage with NQBP to determine management requirements for the project. NQBP may require all dredging to be managed by itself in port areas. Proponents will be required to fund NQBP's costs where it is managing the project.

#### 14.2.10 Hydrographic Requirements

Proponents should consult with NQBP and the Regional Harbour Master prior to conducting any hydrographic surveys in NQBP ports.

All hydrographic surveys must be conducted in accordance with MSQ requirements and supplied to both MSQ and NQBP on completion of the survey.

## 15 DOCUMENTATION REQUIREMENTS

### 15.1 Objectives

- a) Provide assurance to NQBP that the project has been designed and built to professional standards; and
- b) Allows NQBP to adequately capture and manage spatial data for development within its ports.

### 15.2 Specific Requirements

#### 15.2.1 Certification of Engineering Designs and Drawings

The Queensland *Professional Engineers Act 2002* prescribes that professional engineering services may only be provided by individuals registered as professional engineers.

All engineering designs and drawings must be certified by a Registered Professional Engineer of Queensland (RPEQ) as safe, fit for purpose and that it meets relevant Australian Standards.

All drawings submitted must clearly reference the engineering specifications used to develop the design. The specifications should include:

- Design life;
- Design loads;
- Vehicle dimensions and details;
- Vessel dimensions and details;
- Axle loads etc.

#### 15.2.2 Digital Spatial Data

Spatial data must be geo-referenced and provided to NQBP for review or approval at each critical stage of a proponent's development. This includes during concept development, lodgement of development for approval (using "for construction" drawings) and provision of "as built" drawings following completion of construction.

All spatial data should comply with the requirements below: Digital Data Format:

- GIS data – All digital vector data must be provided in ESRI shape file or geo-database format, with accurate and complete feature attributes where appropriate.
- CAD data (where GIS data not available) – must be provided in geo-referenced native format (DGN, DWG or DXF formats).
- All data must be organised into a logical, named layer structure to facilitate feature conversion by layer, with only relevant data associated with each layer name.
- All line-work is to be continuous and polygons closed wherever possible.
- All CAD files should be purged of unnecessary data before transfer, and all relevant reference files merged into the main file.
- All spatial data must be geo-referenced, preferably projected to GDA94 MGA50 or other established coordinate system.
- If a local or plant grid is used, all projection parameters must be provided.
- Raster Data (Imagery, elevation models, analysis results) must be provided in a commonly used format (such as ECW, TIFF, JPEG, DEM) with accurate geo-referencing.
- 3D models/designs must be provided to NQBP in a geo-referenced digital format.

Metadata:

- Metadata must be provided for all digital data detailing at a minimum:
- Author; date, accuracy; horizontal and vertical datum; contact details; source of information and any restrictions on use.
- An attached metadata file must be provided with all data.
- Metadata details may be held in title block for CAD files, if appropriate.

### 15.2.3 Provision of Drawings to NQBP

All drawings and spatial data provided to NQBP must include the following information:

- Company Name and contact details;
- If RPEQ certification is provided, the full name of the RPEQ (Registered Professional Engineer), signature and registration number;
- Drawing number;
- Revision number and revision details;
- Drawing date;
- Drawing scale and scale bar;
- North point (where applicable);
- Details of the horizontal and vertical datum, where applicable;
- Drawing status (e.g. "As constructed");


In addition, "As constructed" drawings must contain the specific information provided in Attachment 3.

## 16 GLOSSARY

The terms used in these Guidelines have the meaning provided to them in Queensland's legislation and the commentary below. Where there is inconsistency between Queensland's legislation and the commentary below, Queensland legislation prevails.

AHD	Australian Height Datum. This is the mean sea level for 1966-1968, which was assigned a value of 0.000 m on the Australian Height Datum (AHD) on 30 tide gauges around the coast of the Australian continent by Geoscience Australia.
BCA	Building Code of Australia
Building	As per the definition under the <i>Planning Act 2016</i> : (a) a fixed structure that is wholly or partly enclosed by walls and is roofed; or (b) a floating building; or (c) any part of a building.
Building footprint	The area of a site that it covered by the structure at ground level.
Building height	The vertical distance from the ground datum to the highest point of the building.
CEMP	Construction environmental management plan
Contaminant	As per the definition in the <i>Environmental Protection Act 1994</i> , a contaminant can be— a. a gas, liquid or solid; or b. an odour; or c. an organism (whether alive or dead), including a virus; or d. energy, including noise, heat, radioactivity and electromagnetic radiation; or e. a combination of contaminants.
Contamination	As defined in the <i>Environmental Protection Act 1994</i> , contamination of the environment is the release (whether by act or omission) of a contaminant into the environment.
Demountable building	Prefabricated structures produced off site and transported to the site.
Development	As per the definition under the <i>Planning Act 2016</i> : <b>Development</b> is any of the following— (a) carrying out— (i) building work; or (ii) plumbing or drainage work; or (iii) operational work; or (b) reconfiguring a lot; or (c) making a material change of use of premises.
EMP	Environmental Management Plan
Environmental nuisance	As per the definition provided in the <i>Environmental Protection Act 1994</i>
Freestanding sign	A permanent sign that is self-supporting in a fixed location and not attached to a building. Freestanding signs include, but are not limited to, monument signs, pole signs, and pylon signs.
Ground level	Means: the existing level of the site providing it has not been unlawfully altered; or where the land has been unlawfully altered the level of land prior to the alteration; or the 'as-constructed' level of the land in accordance with an approval for filling and excavation.



Gross Floor Area (GFA)	Means a total floor area of a building or buildings on the site inclusive of walls, columns and balconies of all stories of every building located on the site.
HAT	Highest Astronomical Tide
NCC	National Construction Code. The BCA is Volume 1 in this Code.
NQBP	North Queensland Bulk Ports Corporation Ltd
OEMP	Operational Environmental Management Plan
PDA	Port Development Application
Pole sign	A freestanding sign that is supported by one or more structural supports less than 1/4 the width of the sign face. 
Proponent	The applicant (or principal where a consultant submits an application on behalf of a principal) who is seeking approval for a new development on port land
Pylon sign	A freestanding sign that is supported by one or more structural elements which are architecturally similar to the design of the sign i.e. any support poles are covered to the ground.
Receiving environment	Means the environment immediately, or in close proximity to the development and/or its operations, e.g. the waterway to which stormwater discharge or overland flow is directed.
RPEQ	Registered Professional Engineer of Queensland
Sensitive receptors	As per the definition provided in the <i>Environmental Protection Act 1994</i>
SMP	Stormwater management plan
Storm surge	A localised change in ocean water levels caused by high winds and reduced atmospheric pressures associated with a storm event
Suitably qualified	Mean a formal qualification and or membership with a professional body
Water Sensitive Urban Design	Means the effective and responsible management of water. Water sensitive urban design promotes the following: <ul style="list-style-type: none"> <li>a) the protection of natural systems;</li> <li>b) the protection of water quality;</li> <li>c) the integration of stormwater treatment into the landscape; and</li> <li>d) the storage and reuse of stormwater</li> </ul>

## 17 REFERENCES

Aurecon, 2012. "Draft Final Port of Hay Point Development Master Plan". Prepared for NQBP, September 2012.

DEHP, 2014. "Contaminated Land Assessment Guidelines"

DEHP, 2013. "Coastal Hazard Technical Guide- Determining coastal hazard areas".

Office of Environment & Heritage (NSW), 2014. "Energy Efficient Lighting – Technology Report" 2<sup>nd</sup> edition. Sydney.

NEPM, 2013. "National Environment Protection (Assessment of Site Contamination) Measure."

## ATTACHMENT 1

### MINOR WORK EXEMPTIONS

The following types of minor works do not require a Port Development Approval from NQBP, if the special standards listed are complied with. These exemptions do not apply to any State approvals that may be required under State legislation.

EXEMPTION	SPECIAL STANDARDS REQUIRED
A time extension for a lease not involving any works, or a sub-lease where there is no material change of use of the site	Note 1
Maintenance to approved structures	Note 1
Painting	Any spray painting must use encapsulation techniques to prevent spray becoming air-borne
Replacement of equipment or structure “like” for “like”, excluding buildings	Note 1. Replacement of buildings will require a new Port Development Approval because of changing standards over time.
Fencing	Fencing must follow the lease boundary and comply with the requirements in Section 9 of these Guidelines.
Signage less than 1.2 m wide and 2 m in height, located outside of environmental management areas of Port Land Use Plans	All signage must comply with the requirements in Section 7 of these Guidelines and the <i>Building Act 1975</i> .
Environmental monitoring, such as sediment or water sampling, terrestrial geotechnical investigations and installation of monitoring bores	Note 1 Marine geotechnical will need a Port Development Approval Terrestrial geotechnical investigations and installation of monitoring bores must comply with the Exemption Code included as Attachment 4.
Utilities/ telecommunications connections within existing service corridors	A Permit to Dig from NQBP's Engineering Department is required where outside a lease area.
Excavations less than 600 mm	Note 1 A Permit to Dig from NQBP's Engineering Department is required for any excavation greater than 150 mm in depth and not within a lease area.
Landscaping	Landscaping must comply with requirements in Section 6 of these Guidelines.
The movement of uncontaminated soil for volumes less than 100 m <sup>3</sup> , if the land is not within a mapped Coastal Management District (CMD) or Erosion Prone Area.	Note 1 No exemption applies if within the mapped CMD or Erosion Prone Area- State approvals may be required for any works in this instance.
Buoy moorings	Buoy moorings are exempt from obtaining a Port Development Approval, however a letter of support from NQBP will be required to accompany an application to Maritime Safety Queensland for a buoy mooring authority. If it is proposed to site a mooring in a location where marine plants have historically been mapped, NQBP may request additional information to understand the impact and confirm any further approval requirements.

*Note 1: Any activity undertaken must not cause environmental harm or nuisance and may require an Environmental Management Plan. Best industry practice is always expected for all activities carried within NQBP ports.*

## ATTACHMENT 2

### REQUIREMENTS FOR MARITIME STRUCTURES IN NQBP PORTS

Below are specific requirements for maritime structures in NQBP ports to ensure compliance with the Australian Standards.

#### 1. Design Requirements

- a) Design life for all maritime structures must comply with Table 6.1 of AS4997.
- b) Provisions for drainage of maritime structures, such as land-backed wharves, must be discussed and agreed with NQBP.
- c) The finished level of the maritime structure is to consider the level of 100 year ARI storm surge in addition to the rainfall, wave and climate sea level rise effects.
- d) Minimum design loads for general cargo wharves must be Class 25 as defined in Table 5.1 of AS 4997, plus any specific vehicle and equipment loads that the maritime structure will be subject to, either during construction or in service. Regardless of any minimum design load stipulated in AS 4997, NQBP reserves the right to stipulate a greater design load if, in the opinion of NQBP, the proposed use of the structure or facility requires it.
- e) The design annual probability of exceedance of ultimate environmental and seismic design load events must be as stipulated in the National Construction Code, based on the following Importance Levels:
  - Maritime structures essential to post-disaster recovery, associated with hazardous facilities, or for which failure will result in significant detrimental economic or environmental consequences, must be treated as Importance Level 4 structures.
  - Other maritime structures must be treated as Importance Level 2 structures, except those structures designed to accommodate large numbers of people. The latter structures must be treated as Importance Level 3 structures.
- f) The design annual probability of exceedance of design wave events must be as stipulated in Table 5.4 of AS 4997-2005 based on Function Category 3 (high property value or high risk to people) except that Function Category 2 can be adopted for minor maritime structures. The design Function Category may be lowered only with the prior written approval of NQBP. Design wave parameters must be based on available site- specific records and/or appropriate wave climate modelling.
- g) Adequate navigation and vessel manoeuvring clearances must be provided to NQBP for review and agreement.
- h) Maritime structures incorporating piles or columns exposed to currents must be designed to ensure that the critical flow velocity at which flow-induced oscillations can commence, as stipulated in Clause 38.3 of BS 6349-1:2000, always exceeds the maximum design current velocity for the maritime structure.
- i) Pile load testing and direct or pile dynamic analysis assessment documentation must be provided to NQBP to verify the likely performance of the piling.
- j) Access and safety issues must comply with the National Construction Code, as appropriate, and with Clause 3.4 of AS 4997.
- k) Displacements and settlements must comply with Clause 4.2.4 of AS 4997 and the relevant sections of the applicable material design code (AS 1720, AS 3600, AS 4100, AS 5100 etc.). In addition, the adopted design allowable displacements and settlements must take into account the requirements of any equipment located on the maritime structure and the effects of the displacements/settlements on the maritime structure operations.
- l) Buried tie rods must be protected from loads induced by settlement of the soil by the use of suitable and adequately sized settlement sleeves. They must be adequately protected from corrosion.

#### 2. Durability Requirements

Maritime structures must be designed and constructed so as to ensure the durability of their components and functionality. The following are specific durability requirements for maritime structures in NQBP ports:

- a) The durability requirements stipulated in Section 6 of AS 4997 must be complied with.
- b) Concrete piles must not be used.
- c) Protective coating systems are to be provided for steel piles and other structural steel components. Design life for the coating systems is to be 15 years to first maintenance.
- d) Cathodic protection systems (either sacrificial anodes or impressed current) must be installed for all permanently immersed steel components. Protective coatings must be suitable for use with the cathodic protection system.
- e) A suitable corrosion allowance for steel elements that form critical elements/members of the maritime structure and are permanently immersed, or within the splash zone, must not be less than 2 mm for any member protected by a cathodic protection system and/or a protective system.
- f) Pre-tensioned pre-stressed concrete elements should be avoided. Post-tension strand inside durable watertight high-density polyethylene ducts is acceptable.
- g) Measures additional to the use of concrete covers must be used to ensure that the required design life is achieved where the design life of the maritime structure exceeds 25 years. Such additional measures can include the use of stainless steel or galvanized reinforcement and/or the use of suitable concrete additives or coatings, such as organic or inorganic pore blocker concrete admixtures; chemical corrosion inhibitor admixtures; hydrophobic surface sealants (silanes); and/or cathodic protection systems. Adequate supporting documentation confirming that the proposed measures are suitable for the nominated design life must be provided to NQBP.
- h) Cold galvanised reinforcement and embedded anode should be used to avoid patch accelerated corrosion/halo effect/ring-anode corrosion on existing structures. Coat patch repairs with a suitable product.

### 3. *Seismic Design Considerations*

Maritime structures must be designed and constructed consistent with the Australian Standards, with the following specific seismic design requirements:

- a) Seismic loads must be determined in accordance with AS 1170.4.
- b) The Hazard Factor (Z) used in determining seismic loads must be appropriate for the region.
- c) Maritime structures must be designed to accommodate:
  - Ultimate limit state seismic loads based on the annual probability of exceedance stipulated in the NCC without catastrophic failure or collapse.
  - Appropriate serviceability limit state seismic loads adopted based on engineering judgment.
- d) AS 1170 is not prescriptive with respect to load combinations associated with seismic events and, accordingly, engineering judgement must be used in determining the environmental and applied/operational loads that are taken to act simultaneously with the design seismic loads. The Proponent must obtain NQBP's approval in writing of the proposed simultaneous loads prior to proceeding with the design of the marine structure based on these.

### 4. *Scour Considerations*

Maritime structures must be designed and constructed consistent with the Australian Standards, with the following requirements for the management of scour:

- a) Consideration of scour effects must be in accordance with Clause 4.5 of AS 4997 in situations where it applies. In other situations not covered by AS 4997, other recognised references should be applied, such as The Rock Manual published by CIRIA (UK) or The Coastal Engineering Manual published by the US Army Corps of Engineers.
- b) Adequate allowances for scour are to be made in the design of maritime structures, but in no case shall the allowance be less than 1.0 m.
- c) Batter slopes under open piled marginal wharves and the sea bed in front of solid quay walls and piers must be protected from scour due to waves, current and propeller/thruster wash by the use of suitable measures such as rock armour, etc. Measures shall extend a minimum of two thirds the beam of the maximum design vessel out from the quay line.
- d) Rock material must comply with the requirements of Clause 57 of BS 6349-1:2000 and



Clause 4.10.1 of BS 6349-7:1991.

## **5. Coastal Stability**

Construction of coastal infrastructure must minimise impacts on natural coastal processes.

Where the Proponent's development has the potential to impact on coastal processes including, but not limited to, the wave climate, current climate, sea bed flora, ocean fauna, water turbidity, depth to sea bed, shoreline alignment or sediment transport characteristics within or adjacent to Port Waters, the Proponent must submit a Coastal Impact Assessment with the Development Application. This assessment shall provide information on the expected impacts from the proposed development, as determined by modelling undertaken by an independent coastal engineering expert, and shall propose a regime of monitoring and management by the Proponent that will be in effect prior to, during and after construction. NQBP will not accept roles or responsibilities in any management and monitoring plan without prior agreement.

## **6. Fenders**

- a) Fenders are to be material and compression tested. All fenders are to be provided with a written rating specification.
- b) Navigation conditions for berthing must be based on engineering judgment taking into account the exposure and geometry of the berth.
- c) The design contact point during berthing used in determining design berthing energies must be suitable for the fender arrangement.
- d) Factors of safety stipulated in Table 4.2.5 of PIANC Guidelines for the Design of Fenders Systems, 2002 must be applied to the calculated normal berthing energies to allow for abnormal berthing impact cases, except that the factor of safety must not be less than 2.0 for vessels less than 5,000 DWT.
- e) Suitable low friction facings must be used on the contact faces of fender assemblies.
- f) Fender and fender support structure design must allow for lateral and vertical loads due to friction between the fender and berthing vessel based on the friction factors stipulated in Table 4 of BS6349: Part 4:1994.
- g) The design of fenders must allow for detrimental effects of overhanging vertical hull angles or slopes (due to bow flare, vessel hull profile and/or listing or heeling of the vessel when berthing) and vessels with low freeboards contacting the fenders or fender frames near the base or part way up when berthing at low tides. Such detrimental effects include reduction in the energy absorption capacity of the rubber fender and increase in the projection of the vessel hull behind the fender face when the fenders are placed significantly below the maritime structure deck level.
- h) Fenders must be resistant to localised damage due to belting or sponsons on vessels' hulls, in particular for smaller vessels less than 5,000 DWT.
- i) The fender design must not allow vessel hulls and/or belting, sponsons or other hull projections and mooring lines to catch on top, underneath on the sides of the fender system and must be resistant to damage due to this. Such measures may include ensuring the fender frame covers the anticipated range of hull heights and belting/sponson levels for the different design vessel sizes and tide levels, minimising the gap between the base of the fender frame and low tide level, using tapered edges to the fender frames and using shear, weight and uplift chains.
- j) Fenders must be adequate to accommodate forces imposed by moored vessels obtained from a suitable mooring analysis.

## **7. Bollards and Quick Release Hooks (QRH)**

- a) Bollards and Quick Release Hooks (QRHs) are to be provided with written rating specification and tested if necessary. Suitable corrosion protection must be provided.
- b) Adequate QRHs must be provided to allow for one mooring line per hook.
- c) Mooring line loads must be determined in accordance with OCIMF Guidelines and Recommendations for the Safe Mooring of Large Ships at Piers and Sea Islands and AS 4997. In particular:
  - Required bollard and QRH capacities for mooring arrangements not subject to significant dynamic effects due to waves and current can be determined in accordance with the

simplified method stipulated in AS 4997.

- The required bollard and QRHs capacities for mooring arrangements subject to significant dynamic effects due to wave and current must be determined by suitable dynamic mooring analyses. In all cases, if the bollards or QRHs will be subject to vessel manoeuvring loads, the bollard and QRH capacities must not be less than those stipulated in Table C1 of AS 4997. Note that AS 4997 stipulates that the capacities provided in Table C1 are to be increased by 25% for vessels subject to other than mild conditions.

## **8. Breakwaters and Armoured Slopes**

- a) Breakwaters must provide the wave attenuation required for safe mooring and operations within the basin/harbour protected by the breakwater without creating adverse conditions in the surrounding area.
- b) Rubble mound breakwater side slopes and armoured slopes must not be steeper than 1:1.5 or shallower than 1:6 (vertical to horizontal).
- c) Slopes must be stable and not prone to slope stability failures.
- d) Rock material must comply with the requirements of Clause 57 of BS 6349-1:2000 and Clause 4.10.1 of BS 6349-7:1991.
- e) Breakwaters and armoured slopes must be designed to provide protection against:
  - Initial damage,
  - Intermediate damage at a level requiring repair, and
  - Failure as defined in the design method for waves with a probability of exceedance during the life of the structure that has the prior approval of NQBP. Example probabilities of exceedance are 50% probability of exceedance during the design life for initial damage, 10% of exceedance during the design life for intermediate damage requiring repair and the design wave stipulated in Table 5.4 of AS 4997 for failure.
- f) It is anticipated that the adopted design wave sizes will be influenced by:
  - The availability and cost of rock or armour units of the required sizes;
  - The difficulty and cost of undertaking repairs; and
  - The magnitude of the detrimental effects that will arise because of the failure of the breakwater or armoured slope.
- g) Breakwaters and seawalls must be designed to provide an overtopping rate that is suitable for the activities taking place or for structures located in the area at the top of the breakwater or seawall slope as approved by NQBP.

## **9. Coastal Monitoring and Management Plan**

Any approval by NQBP of the proposed development may be conditional on the Proponent preparing and implementing an appropriate Coastal Monitoring and Management Plan. If requested, the Plan must:

- a) be updated in a timeframe agreed with NQBP, once construction has commenced, based on actual beach monitoring (land and hydrographic) surveys;
- b) identify any dredging and/or sand bypassing works or other works to be undertaken and detail actions and timeframes for responding to the identified needs; and
- c) comply with all relevant legislation and statutes, and with any other relevant approvals. Copies of these approvals are to be attached to the written application.

## **10. Navigation Channels and Dredging Depths**

Navigation channels must be designed and constructed in accordance with the PIANC Guidelines to provide adequate depth for the design vessel.

The following terminology is to be used in the design drawings:

- a) Declared Depth: The depth nominated by the Regional Harbour Master and displayed on navigational charts.

- b) Design Depth: This is the depth that the channel will be dredged to. It includes the Declared Depth plus an insurance depth. The latter is an allowance for the expected siltation that occurs between dredging campaigns.
- c) Over-dredge Depth: This is the depth that the dredging contractor will target over the full length of the navigational area to ensure the design depth is met. The over-dredging allowance will vary with equipment, but it is typically less than 0.3 m.

#### **11. Navigation Markers**

Navigation markers are to be designed and built to relevant Australian Standards, International Association of Lighthouse Authorities guidelines, and in accordance with any requirements set by NQBP and MSQ.

#### **12. Moorings**

Moorings are to be laid and maintained to an appropriate standard for the anticipated use. Moorings require approval from the Regional Harbour Master, as well as a letter of support from NQBP.

#### **13. Anchorages**

Anchorage may only be located in seabed areas where the anchoring of vessels will not impact on any environmentally sensitive area. The location must have an underwater survey of the area provided to NQBP as part of the development application process.

Anchorage must not impede port activities and are to be determined in consultation with NQBP and the Regional Harbour Master.

## ATTACHMENT 3

### *DETAILS REQUIRED IN “AS CONSTRUCTED” DRAWINGS*

The following details must be provided in “As Constructed” drawings provided to NQBP, if relevant to the works:

a) Site Works:

- Site feature survey prepared by a licensed surveyor.
- Property lot and lease boundaries.
- Earthworks, including volumes of cut and fill and source and type of material.
- Locations and heights of stabilised embankments including batter slope gradients.
- Retaining walls.
- Existing stormwater drains, culverts, oil/silt removal catch pits and coalescing plate interceptors.
- Pavement details and design or other surface finishes including path and direction of stormwater flow and fall gradients.
- Identification and size of areas utilised in the development e.g. storage, loading, trade display, parking, etc.
- Location and dimensions of areas to be provided for the loading and unloading of vehicles carrying goods or commodities to and from the site.
- Fencing - type, location and height.
- Areas of open space, landscaping and screen planting, including materials, plant species, irrigation and irrigation plans.
- Vegetation to be removed.
- Buildings and structures to be removed or demolished.
- Any other item or infrastructure that needs to be relocated or removed.

b) Road works, vehicle manoeuvring and parking areas:

- Plans and profile including parking bay dimensions, wheel stops, aisle and road widths.
- Cross sections and grades.
- Vehicle turning templates including swept paths and sufficient radius for maximum vehicle design standards.
- Verge and road features.
- Streets, locations and names.
- Pedestrian access.
- Directional signage and road line marking.
- Road compaction tolerances.
- Subsoil drainage.
- Trenching plan.
- Existing structures.
- Road signage.
- Road furniture.
- Road construction materials.

- Location of proposed access easements.
- Thickness of road base and bitumen or asphalt surfacing.
- c) Services:
  - Location and plan of all existing and future communications pits and conduit galleries.
  - Location plans of electrical and services outlets.
  - Line diagrams.
  - Trench details.
- d) Drainage:
  - Drainage plan for site showing:
    - Catchments boundaries and areas.
    - Flow directions (natural and man-made).
    - Site elevations (contours or spot heights).
    - Design flow rates.
  - Average Recurrence Interval (ARI) for which the drainage system is designed.
  - Layout and details (sections, invert levels etc.) of:
    - Capture drains (including culverts).
    - Capture storages (basins, dams or otherwise).
    - Treatment infrastructure (swales, sedimentation basins, interceptors etc.).
  - Details of existing drainage infrastructure (if applicable).
- e) Signage:
  - Signage layouts and footing details for all non-standard signs that do not meet the requirements in Chapter 7 of this document.
- f) Buildings:
  - Locality plan/key plan showing the overall location and layout of the building works.
  - Site plan (1:200 preferred) of the property showing any easements, site boundary or battery limit dimensions and lot area, north point, permanent datum point, contours (or levels) and feature survey and abutting street names and areas of demolition and/or extensions if applicable.
  - The location of proposed building(s) including setbacks to boundaries, distances from other buildings on the site and proposed effluent and stormwater disposal details.
  - The location of any existing buildings/structures on-site, including existing access/egress point(s), existing landscape area(s), existing effluent disposal system(s) and stormwater drainage and the location of existing infrastructure within the abutting road reserve (e.g. Power poles, signage, Telstra pits, positions of fire hydrants/boosters).
  - If the works are located on or close to the boundary, also show the outline of neighbouring buildings with dimensions from the boundary.
  - Floor plan(s) of the proposed building(s) (1:100 preferred) showing all dimensions, room names, sunken areas and set downs, location and dimensions of windows and doors including direction of opening (e.g. Fixed, sliding, awning), toilets (staff, public, disabled).
  - Roof plan showing ridges, valleys, eave lines and down pipe locations.
  - Elevations of the proposed building(s) (1:100 preferred) showing the profile of the proposed building works including roof heights, method of connecting to any existing building(s), finished floor levels of building(s), the existing and finished ground levels,

location and dimensions of doors and windows (including direction of opening) and the means to stabilise exposed soil (e.g. Batters, retaining walls).

- Section drawings detailing material types and sizes, spacing and construction fixing methods (1:50 / 1:20 preferred).
- Engineers structural details, i.e. Footings, framing members and all connections.
- Landscaping layout and details (can be on site plan).
- Construction materials and colour schemes, door and window schedules (including cyclone/security screen details).
- Electrical and a/c layouts and details, including lighting and smoke alarm locations and exit sign locations.
- Plumbing layout and details.
- The type, dimension and capacity of any apparatus for the collection, treatment and disposal of wastewater or mains sewerage connection points.
- Fire-fighting equipment layout and details.
- Disabled access requirements as applicable.
- Outdoor lighting and security/CCTV details.
- Specification notes and design criteria as applicable.
- NQBP may require building plans to be submitted as a Building Information Model (BIM) including 3D digital model viewable in freely available viewer.

g) Other Structures:

- Locality plan/key plan showing overall location of the works.
- Site plan (1:200 preferred) showing any easements, site boundary dimensions and lot area, north point, permanent datum point, contours (or levels) and feature survey, plot ratio and area of demolition and/or extensions if applicable.
- The location of proposed structures, including setbacks to boundaries, distances from other structures or buildings on the site and proposed effluent and stormwater disposal details.
- The location of any existing buildings/structures on-site including existing services.
- Plan(s) of the proposed structure(s) (1:100 preferred) showing all dimensions and set-outs.
- Elevations of the proposed structure(s) (1:100 preferred) showing the profile of the proposed works including its height, the way it connects to any existing structures, finished floor levels, the existing and finished ground levels and the means to stabilise exposed soil (e.g. Abutments, batters, retaining walls).
- Sections showing structural systems and connection methods (1:50 / 1:20 preferred).
- Engineers structural details, i.e. concrete, steel, timber, framing members, all connections and details, stairs, landings, gangways and platform details and the like.
- Proposed services layout and details (1:100 preferred).
- Fire-fighting equipment layout and details.
- Outdoor lighting and security/CCTV details.
- Specification notes and design criteria as applicable.



## ATTACHMENT 4

### EXEMPTION CODES

#### Exemption

Terrestrial (land) geotechnical investigations and the installation of groundwater monitoring bores if undertaken in accordance with the following standards.

#### Special Standards Required

Aspect	Standard
Notification	Notification of proposed works must be provided to NQBP, via <a href="mailto:approvals@nqbp.com.au">approvals@nqbp.com.au</a> , at least two (2) weeks prior to commencement of works.
Location	<p>Terrestrial geotechnical investigations must not be undertaken on or within 3 m of roads.</p> <p>Terrestrial geotechnical investigations must not be located across any infrastructure corridors.</p> <p>A Permit to Dig must be obtained prior to any geotechnical investigations commencing.</p> <p>If undertaking works across a lease or easement, proponents must have consent from the appropriate lease or easement holder.</p>
Area of disturbance	Test pits must be no bigger than 3 m x 1 m
Rehabilitation	<p>No uncontrolled surface openings are to be left upon completion of the investigations.</p> <p>Each sampling site is to be rehabilitated to a minimum standard described below:</p> <ul style="list-style-type: none"> <li>Excavated material is to be replaced in the same order as it was removed to reflect the in-situ soil profiles.</li> <li>Reinstated material is to be compacted leaving a slight mound to assist in drainage.</li> <li>Reinstated areas are to be seeded, turfed or mulched.</li> </ul>
Environmental management	An Environmental Management Plan for the works must be approved by NQBP, via <a href="mailto:approvals@nqbp.com.au">approvals@nqbp.com.au</a> .
Vegetation clearing	Any vegetation clearing to facilitate the investigations or access to the investigation area must be of non-regulated vegetation and be consistent with State Government exemptions for vegetation clearing.
Cultural heritage	<p>Section 23 of the Aboriginal Cultural Heritage Act 2003 establishes a duty of care for all persons carrying out an activity to take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage. It is the responsibility of the person undertaking the activity to ensure compliance with the duty of care.</p> <p>At the Port of Abbot Point no ground disturbance works are to be undertaken until clearance has been provided by the traditional owners.</p>