3.5.3 LCU3– Vegetated and Recreational

There are areas of vegetation (natural and planted) throughout the study area. Most of the vegetation areas have some form of recreational function. . Botany Bay also provides recreational opportunities such as fishing and boating. Examples of vegetated and recreational areas are illustrated in Plate 3-6 and Plate 3-7. Landscape character elements and assessment is provided in Table 3-3.

Plate 3-6 Botany Golf Course

Plate 3-7 La Perouse

Table 3-3 LCU 3 Landscape Character Elements and Assessment

Landscape Character Element	Landscape Character Unit Assessment
Location	Throughout the study area predominately along coast fringes and along rivers. There are also isolated community parks through the study area. The largest area or vegetation is Botany Bay National Park located in Kurnell.
Landform and Significant Landscape Features	Typically flat coastal landscape with a slight rise in areas with coastal dune complex.
Vegetation	Nature strips and street tree planting, ornamental vegetation in parks, remnant coastal dune vegetation, and natural bush.
Waterform	Coastal area dominated by Botany Bay with rivers and creeks disbursed through the study area.
Land Use	Recreational and sporting facilities, public parks and reserves.
Visual Context and Key Receptors	Views vary between natural / vegetated areas. Generally, those directly on the coast experience views composed of Botany Bay with elements of the existing heavy infrastructure (airport runways, port, shipping containers etc.). Key receptors include recreational users of public areas with medium sensitivity when recreation areas are located within close proximity but viewing periods are limited. Local road users with low sensitivity who have passing views and interest in their visual environment.
Landscape sensitivity	Medium.

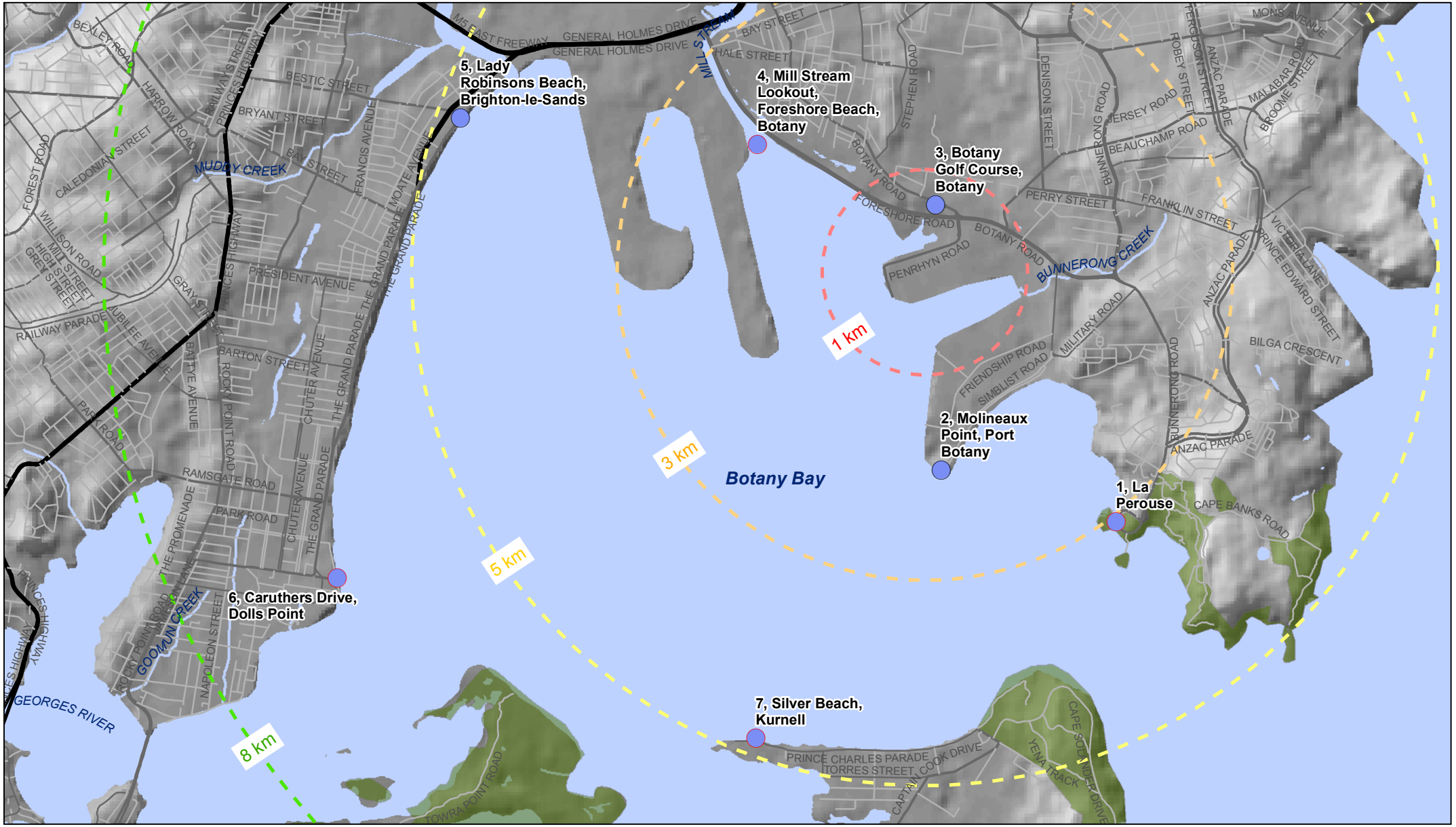
3.6 Sensitive visual receptors

In order to undertake an assessment of visual impacts, a series of sensitive visual receptors were selected to represent the points from which the proposal is likely to be viewed by the greatest number of visual receptors and /or from where the most sensitive visual receptors would likely perceive the proposal. The viewing locations were areas where full or screened views of the proposal would be possible and human activity would be undertaken (e.g. residential, business, schooling or recreation). In addition, sensitivity receptor viewing locations would also include areas where the only views would be transient such as vehicles using a road.

The viewpoints are focused on the coastal edge around Botany Bay. The representative sensitive visual receptors that have been identified and assessed in this report are identified in Figure 3-2, are summarised in Table 3-4 and are described in Sections 3.6.1 to 3.6.7.

Table 3-4 Sensitive visual receptors

Viewing Location	Description
1	La Perouse
2	Molineaux Point, Port Botany
3	Botany Golf Course, Botany
4	Mill Stream Lookout, Foreshore Beach
5	Lady Robinsons Beach, Brighton-le-Sands
6	Carruthers Drive, Dolls Point
7	Silver Beach, Kurnell



1:50,000 (at A4)

0 0.25 0.5 1 1.5 2

Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56

N

LEGEND

- Photomontage location
- Sensitive visual receptors

Study area buffer zones
- 1 km
- 3 km
- 5 km
- 8 km

- Highways
- Major Roads
- Secondary Roads
- Other Roads

- NPWS Parks
- Waterways (lines)
- Waterways

Patrick Stevedores Operations No 2
Section 75W Modification
- Port Botany Container Terminal Project
(DA-453-12-2002-i MOD 7)

Job Number 21-21961
Revision A
Date 03 Apr 2013

Sensitive visual receptor locations

Figure 3-2

G:\21\21961\GIS\Maps\MXD\21_21961_Z017_UrbanLiving_SensitiveVisualReceptors.mxd

Level 15, 133 Castlereagh Street Sydney NSW 2000 T 61 2 9239 7100 F 61 2 9239 7199 E sydmail@ghd.com.au W www.ghd.com.au

Data Source: NSW Department of Lands: Roads, Waterbodies - Jan 2011; Geoscience Australia: 250k Data - Jan 2011 1second DEM Elevation Created by: sdwoodger

3.6.1 Sensitive visual receptor: La Perouse

La Perouse is a residential and recreational area located approximately 2.5 km to the south of the proposal site on the eastern side of Botany Bay. The sensitive visual receptor is described in Table 3-5 and shown in Plate 3-8 and 3-9.

Plate 3-8 Existing view looking north west from La Perouse

Plate 3-9 Existing view looking north east from La Perouse

Table 3-5 Sensitive visual receptor 1: La Perouse

Landscape/Visual Element	Baseline Description
Location	Located on the south eastern side of Botany Bay.
Landform and Significant Landscape Features	Gentle rise in elevation from sea level to form typically flat coastal landscape with some areas of undulation in coastal dune complex.
Vegetation	Coastal heath and shrub areas and large grassed park.
Water	Coastal area dominated by Botany Bay.
Land Use	This is a residential area with public reserves which include Botany Bay National Park and Bare Island
Visual Context	Open views of Botany Bay including views south west across to Kurnell. To the north west the existing port operations are visible. The docks operated by DP World are visible with the Patrick Stevedores Operation partially visible behind it. Key receptors include: • Viewers at public areas with high sensitivity when viewing in a south west direction.

Landscape/Visual Element	Baseline Description
	• Visual receptors are considered to be of a medium sensitivity when viewing in a north west direction as this is highly modified landscape with industrial built forms and views are at a distance of approximately 2 – 3 km.

3.6.2 Sensitive visual receptor 2: Molineaux Point, Port Botany

Molineaux Point is located in Port Botany at the western end of Prince of Wales Drive. The park was commissioned to commemorate the trading alliance between Japan and Australia. The sensitive visual receptor is described in Table 3-6 and shown in Plate 3-10, 3-11 and 3-12.

Plate 3-10 Existing view north east from commemorative platform in Molineaux Point

Plate 3-11 Existing view south east towards commemorative platform

Plate 3-12 Existing view south east from commemorative platform

Table 3-6 Sensitive visual receptor 2: Molineaux Point, Port Botany

Landscape/Visual Element	Baseline Description
Location	Located at the western end of Prince of Wales Drive in Port Botany.
Landform and Significant Landscape Features	Slightly elevated above sea level.
Vegetation	Coastal heath and shrub with grasses park that has some ornamental planting.
Water	Coastal area dominated by Botany Bay.
Land Use	Primarily recreational with adjacent industrial related activities.
Visual Context	The point is elevated and has a sweeping 270 degree view of Botany Bay which encompasses La Perouse, Kurnell and Sydney Airport with distant views to Lady Robinsons Beach in Brighton-le-Sands. The large buildings associated with the docks operated by DP World and the presence of localised vegetation limit the views to the north. Views are experienced by recreation users and outdoor workers who are within a close proximity but viewing periods are limited. Receivers are considered to be of a medium sensitivity.

3.6.3 Sensitive visual receptor 3: Botany Golf Course, Botany

Botany Golf Course is a public golf course located in Botany between Foreshore Road and Botany Road. The sensitive visual receptor is described in Table 3-7 and shown in Plate 3-13.

Plate 3-13 Existing view south to south west from Botany Golf Course

Table 3-7 Sensitive visual receptor 3: Botany Golf Course, Botany

Landscape/Visual Element	Baseline Description
Location	Located in Banksmeadow between Foreshore Road and Botany Road to the immediate north of the proposal site.
Landform and Significant Landscape Features	Typically flat coastal landscape.
Vegetation	Dense vegetation along the Foreshore Road side of the course boundary. The golf course is disbursed with both native and ornamental trees and shrubs.
Water	Ornamental lake and located adjacent to Botany Bay.
Land Use	Recreational.
Visual Context	Views are filtered by the presence of dense vegetation along Foreshore Road. Vistas range from short to middle distance and are of golf course, with some port activities such as the cranes visible over this vegetation. Views are experienced by recreation users of the golf course who are within a close proximity but viewing periods are limited. Receivers are considered to be of a medium sensitivity.

3.6.4 Sensitive visual receptor 4: Mill Stream Lookout, Foreshore Beach, Botany

Mill Stream Lookout is a public view point located at the northern end of Foreshore Beach in, Botany. The sensitive visual receptor is described in Table 3-8 and shown in Plate 3-14.

Plate 3-14 Existing view south east from Mill Stream Lookout towards the proposal site

Table 3-8 Sensitive visual receptor 4: Mill Stream Lookout, Foreshore Beach, Botany

Landscape/Visual Element	Baseline Description
Location	Located at the northern end of Foreshore Beach to the north of the proposal site.
Landform and Significant Landscape Features	Typically flat coastal landscape.
Vegetation	Coastal heath and shrub.
Water	Located adjacent to Botany Bay and at the mouth of Mill Stream.
Land Use	Recreational.
Visual Context	The view location has low level panoramic views of Botany Bay which encompasses Sydney Airport and container ports with distant views to Lady Robinsons Beach and Kurnell. The SICTL site, operated by Hutchison Port Holdings which is under development is located in the foreground. The docks operated by Patrick are visible behind this. The DP World port operation is partially visible to the south of the Patrick site. . The port activities along with the coloured stacks of containers and the tall cranes are a prominent visual element in the view. This along with the proximity of the two runways of Sydney Airport provide for a dynamic landscape with a range of movement with an industrial character. Views are experienced by recreation users who are within a close proximity but viewing periods are limited. Receivers are considered to be of a medium sensitivity.

3.6.5 Sensitive visual receptor 5: Lady Robinsons Beach, Brighton-le-Sands

Lady Robinsons Beach is a public beach and recreational area located approximately 4.5 km to the north of the proposal site on the western side of Botany Bay in Brighton-le-Sands. The sensitive visual receptor is described in Table 3-9 and shown in Plate 3-15.

Plate 3-15 Existing view south east from Lady Robinsons Beach

Table 3-9 Sensitive visual receptor 5: Lady Robinsons Beach, Brighton-le-Sands

Landscape/Visual Element	Baseline Description
Location	Located at the northern end of Lady Robinsons Beach.
Landform and Significant Landscape Features	Typically flat coastal landscape.
Vegetation	Coastal heath and shrub and street tree planting.
Water	Located adjacent to Botany Bay and to the south of Cook River and Muddy Creek.
Land Use	Recreational and residential.
Visual Context	The view location has low level panoramic views of Botany Bay which encompasses the length of Lady Robinsons Beach, Sydney Airport runways with distant views to Kurnell and the port terminals across the bay. The two runways which are frequently used and the tall control tower building associated with Sydney Airport provide for a dynamic landscape with a range of movement with an industrial character. Views are experienced by recreation and residential receptors with distant views. Receivers are considered to be of a low sensitivity.

3.6.6 Sensitive visual receptor 6: Carruthers Drive, Dolls Point

Carruthers Drive is located approximately 6 km to the south of the proposal site on the western side of Botany Bay in Dolls Point. The sensitive visual receptor is described in Table 3-10 and shown in Plate 3-16.

Plate 3-16 Existing view east from Carruthers Drive, Dolls Point

Table 3-10 Sensitive visual receptor 6: Carruthers Drive, Dolls Point

Landscape/Visual Element	Baseline Description
Location	Located at the southern end of Lady Robinsons Beach.
Landform and Significant Landscape Features	Typically flat coastal landscape.
Vegetation	Coastal heath and shrub and street tree planting. Peter Depena Reserve is located to the immediate south. Cook Park located to the immediate north.
Water	Located adjacent to Botany Bay.
Land Use	Recreational and residential.
Visual Context	The view location has low level panoramic views of Botany Bay with distant views of Sydney Airport, the container ports and the City of Sydney in the distance. The two runways which are frequently used and the movement of ships with bulk liquids and good arriving / departing from port terminals provide for a dynamic landscape with a range of movement generally of an industrial character. Views are experienced by recreation and residential receptors with distant views. Receivers are considered to be of a low sensitivity.

3.6.7 Sensitive visual receptor 7: Silver Beach, Kurnell

Silver Beach is recreational area located approximately 4.5 km to the south of the proposal site on the southern side of Botany Bay in Kurnell. The sensitive visual receptor is described in Table 3-11 and shown in Plate 3-17.

Plate 3-17 Existing view looking north east from Silver Beach, Kurnell.

Table 3-11 Sensitive visual receptor 7: Silver Beach, Kurnell

Landscape/Visual Element	Baseline Description
Location	Located at the western end of Silver Beach in Bonna Point Reserve.
Landform and Significant Landscape Features	Typically flat coastal landscape.
Vegetation	Coastal heath and shrub. A number of reserves are located in Kurnell. These include Towra Point Nature Reserve, Botany Bay National Park and Bonna Point Reserve.
Water	Located adjacent to Botany Bay.
Land Use	Recreational and residential.
Visual Context	The view location has low level panoramic views of Botany Bay with an existing oil jetty in the foreground at Kurnell and views of Sydney Airport, container ports and the City of Sydney in the distance. The two runways which are frequently used and the movement of ships with bulk liquids and good arriving / departing from port terminals provide for a dynamic landscape with a range of movement generally of an industrial character. Views are experienced by recreation and residential receptors with distant views. Receivers are considered to be of a low sensitivity.

4. Landscape and visual impacts

The potential visual impacts of the construction and operation of the proposal are considered in the context of the sensitivity of the surrounding visual environment and the potential for viewing of the proposal during the construction and operational phases. The impacts of the proposal at each sensitive visual receptor are assessed in Sections 4.2 to 4.8. Photomontages for four of the viewing locations are provided in Figure 4-1 to Figure 4-4. These locations were selected and they represent the different types of views that would potentially be visible of the proposal.

The potential impacts of lighting are discussed in Section 4.9. The potential impacts on protected air space are discussed in Section 4.10.

4.1 Summary of impacts

The landscape in the area is considered to have a high capacity to accommodate change. This is due to the urban nature and the existing industrial character of the area.

During the construction phase of the proposal there would be limited visibility of the works as the construction areas would be within a working port which is an active site that contains existing large infrastructure such as the cranes and containers that would aid in obscuring may of the potential views. For the majority of the potential sensitive visual receptor it was assessed that there would not be of any significant impacts.

During the operation phase the control building and maintenance building and workshop would be visible from a limited number of locations but given the context of the surrounding industrial character of the landscape and the presence of other tall elements in the visual landscape such as the cranes the change was considered to be not significant.

There would be an overall reduction of lighting from current levels as a result of the measures proposed as part of the proposal.

The proposal would have no impact on the protected airspace.

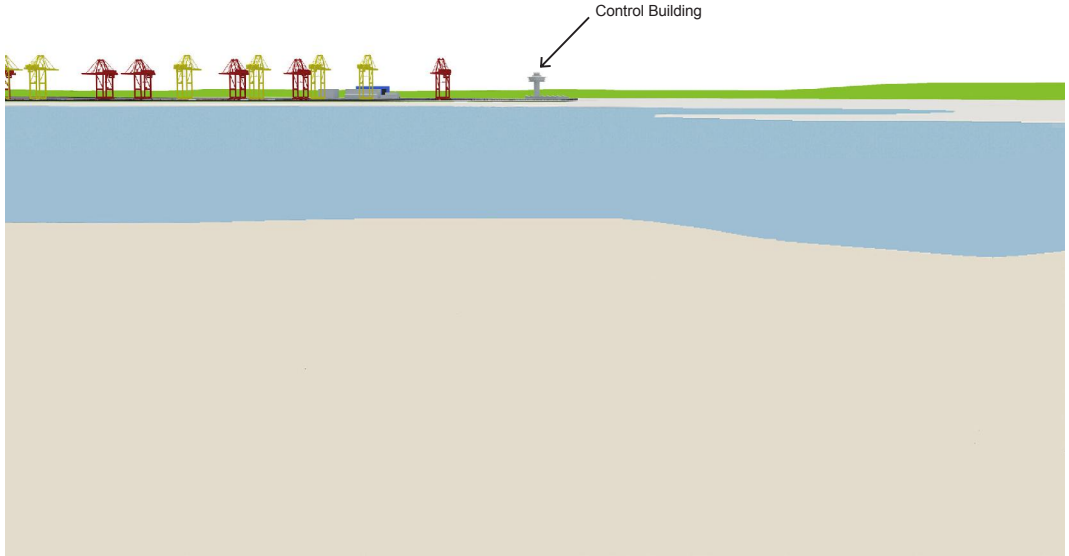
4.2 Sensitive visual receptor 1: La Perouse

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at La Perouse are presented in Table 4-1. A photomontage for this sensitive visual receptor is presented in Figure 4-1.

Table 4-1 Sensitive visual receptor 1 Potential Impacts

Sensitive visual receptor 1 - La Perouse	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 1 is located approximately 2.5 km to the southeast of the proposal site. The residential areas are located on ground that slopes up from the shoreline which offers some slightly elevated viewing opportunities of the site. The elements of proposal that would likely be seen during the construction and operational phases include: **Construction Phase** • Construction of a new administration and control building in the southeastern corner of the site. • Large machinery, trucks and other vehicles in and around construction zones. **Operational Phase** • New administration and control building.
Landscape and Visual Impact	The receptor sensitivity is assessed as **medium sensitivity** due the highly modified nature of the landscape which has an industrial built form. During the construction phase the landscape was assessed as having a **small visual reduction** due to the nature of the construction activities. The construction works are expected to be **temporary**. The quality of the impacts would be Negative. During the operational phase there would be a **small visual modification** of the landscape. The operational phase is expected to be long term. The quality of the impacts would be negative. It is considered that this landscape has a **High potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Minor significance Operational Phase: Minor significance

Photomontage



3D model camera view

VIEWPOINT LOCATION MAP

EXISTING CONDITIONS

TECHNICAL INFORMATION

For indicative purposes only:
Viewpoint Location: 336581.69 E 6237675.64 N
(GDA 1994 MGA Zone 56)
Approximate direction of view: 336°
Approximate distance to control building: 2700m

NOTE:
- Existing workshop and amenities buildings are located behind the existing cranes and containers.
- New workshop building would be located behind the existing cranes and containers. New workshop building would not be visible from this location.

LEGEND

P & O cranes

New workshop building

Patrick Stevedores cranes

Existing workshop & amenities buildings

rev	description	drawn	job manager	date
B	Issue for Information	AL	ST	07.02.13
A	Issue for approval	AL	ST	01.02.13

Patrick Stevedores Operations Pty Ltd
Port Botany Building and Infrastructure Improvements

Photomontage of location 01 - La Perouse

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 F 61 3 8687 8111
E melmail@ghd.com.au W www.ghd.com

sheet size	A3	job no.	212196105
date	07.02.13	rev no.	B
approved (PD)	GM		Figure 4-1

Plot Date: 07.02.13 Plotted by: Aline Lorenzon Cad File No: G:\21\2196105\CADD\Visualisation

4.3 Sensitive visual receptor 2: Molineaux Point, Port Botany

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at Molineaux Point, Port Botany are presented in Table 4-2.

Table 4-2 Sensitive visual receptor 2 Potential Impacts

Sensitive visual receptor 2 - Molineaux Point, Port Botany	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 2 is located approximately 2 km to the south of the proposal site. The elevated view point has views around Botany Bay but they are limited in the direction of the proposal site. No elements of proposal would likely be seen during the construction and operational phases.
Landscape and Visual Impact	The receptor sensitivity is assessed as **medium sensitivity** due to the panoramic views available and recreational use. During the construction phase the landscape was assessed as having a **no perceivable visual reduction**. During the operational phase the landscape was assessed as having a **no perceivable visual reduction**. It is considered that this landscape has a **high potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Not significant Operational Phase: Not significant

4.4 Sensitive visual receptor 3: Botany Golf Course, Botany

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at Botany Golf Course are presented in Table 4-3.

Table 4-3 Sensitive visual receptor 3 Potential Impacts

Sensitive visual receptor 3 - Botany Golf Course, Botany	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 3 is located approximately 500 m to the north of the proposal site. There are limited views in the direction of the proposal site. No elements of proposal would likely be seen during the construction and operational phases.
Landscape and Visual Impact	The receptor sensitivity is assessed as **medium sensitivity** due to the panoramic views available and recreational use. During the construction phase the landscape was assessed as having a **no perceivable visual reduction**. During the operational phase the landscape was assessed as having a **no perceivable visual reduction**. It is considered that this landscape has a **medium potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Not significant Operational Phase: Not significant

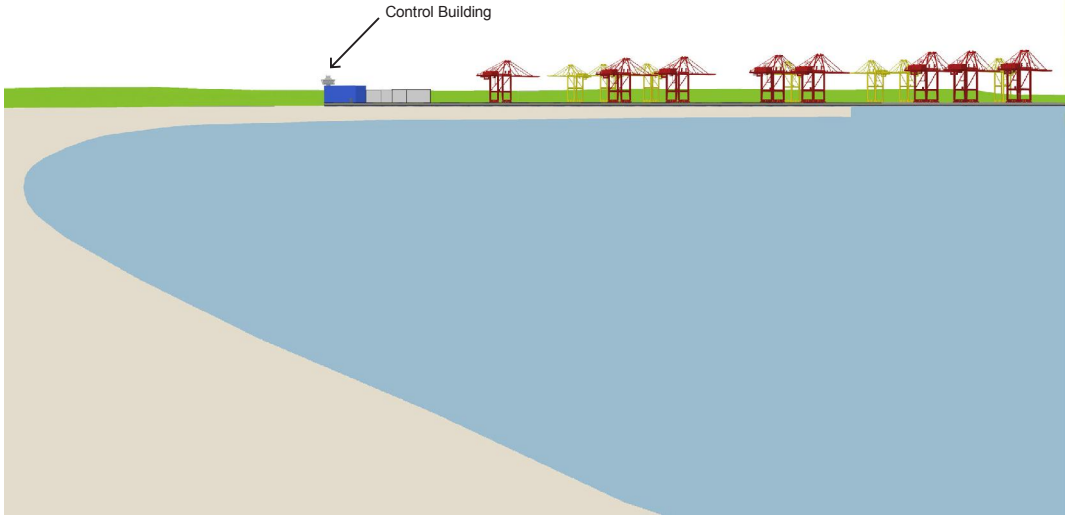
4.5 Sensitive visual receptor 4: Mill Stream Lookout, Foreshore Beach, Botany

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at Mill Stream Lookout, Foreshore beach, Botany are presented in Table 4-4. A photomontage for this sensitive visual receptor is presented in Figure 4-2.

Table 4-4 Sensitive visual receptor 4 Potential Impacts

Sensitive visual receptor 4 - Mill Stream Lookout, Foreshore Beach	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 4 is located approximately 1.5 km to the north west of the proposal site. The port activities with coloured stacks of containers, tall coloured cranes, arrival and departure of large container ships, along with the two busy runways of Sydney Airport provide a dynamic landscape with lots of movement. The elements of proposal that would likely be seen during the construction and operational phases include: **Construction Phase** • Construction of a new administration and control building in the southeastern corner of the site. • Construction of a new undercover maintenance building and workshop. • Removal of the existing OCR building and construction of a new single-storey OCR structure. • Large machinery, trucks and other vehicles in and around construction zone. **Operational Phase** • New administration and control building. • New undercover maintenance building and workshop.
Landscape and Visual Impact	The receptor sensitivity is assessed as **medium sensitivity** due to the scenic views available and recreational nature of the area. During the construction phase the landscape was assessed as having a **small visual reduction** due to the nature of the construction activities. The construction works would be **temporary**. The quality of the impacts would be **Negative**. During the operational phase there would be a **small visual modification** of the landscape. The operational phase is expected to be **long term**. The quality of the impacts would be **negative**. It is considered that this landscape has a **high potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Minor significance Operational Phase: Minor significance

Photomontage



3D model camera view

VIEWPOINT LOCATION MAP

EXISTING CONDITIONS

TECHNICAL INFORMATION

For indicative purposes only:
Viewpoint Location: 333086.72 E 6241357.3 N
(GDA 1994 MGA Zone 56)
Approximate direction of view: 121°
Approximate distance to control building: 2660m

NOTE:
- Control building would be located behind new workshop building. Both the control building and new workshop would be visible from this location point.

LEGEND

P & O cranes

New workshop building

Patrick Stevedores cranes

Existing workshop & amenities buildings

rev	description	drawn	job manager	date
B	Issue for Information	AL	ST	07.02.13
A	Issue for approval	AL	ST	01.02.13

Patrick Stevedores Operations Pty Ltd
Port Botany Building and Infrastructure Improvements

Photomontage
Location 02 - Mill Stream Lookout

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 **F** 61 3 8687 8111
E melmail@ghd.com.au **W** www.ghd.com

sheet size	A3	job no.	212196105
date	26.02.13	rev no.	B
approved (PD)	GM		Figure 4-2

Plot Date: 07.02.13 Plotted by: Aline Lorenzon Cad File No: G:\21\2196105\CADD\Visualisation

4.6 Sensitive visual receptor 5: Lady Robinsons Beach, Brighton-le-Sands

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at Lady Robinsons Beach, Brighton-le-Sands are presented in Table 4-5.

Table 4-5 Sensitive visual receptor 5 Potential Impacts

Sensitive visual receptor 5 - Lady Robinsons Beach, Brighton-le-Sands	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 5 is located approximately 5 km to the north west of the proposal site. There are distant views across Botany Bay but these are diminished by distance with the individual elements of the port becoming less distinguishable from each other. The existing infrastructure on the proposal site such as the cranes and container stacks would also obscure any view of the proposed works. No elements of proposal would likely be seen during the construction and operational phases.
Landscape and Visual Impact	The receptor sensitivity is assessed as **low sensitivity** due to the panoramic views available and recreational use. During the construction phase the landscape was assessed as having a **no perceivable visual reduction**. During the operational phase the landscape was assessed as having a **no perceivable visual reduction**. It is considered that this landscape has a **high potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Not significant Operational Phase: Not significant

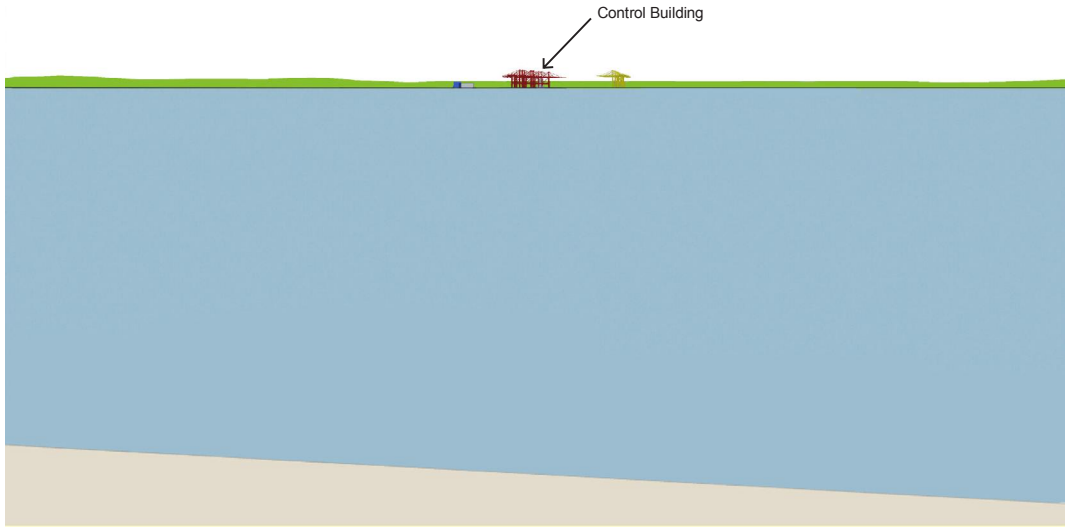
4.7 Sensitive visual receptor 6: Carruthers Drive, Dolls Point

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at Carruthers Drive, Dolls Point are presented in Table 4-6. A photomontage for this sensitive visual receptor is presented in Figure 4-3.

Table 4-6 Sensitive visual receptor 6 Potential Impacts

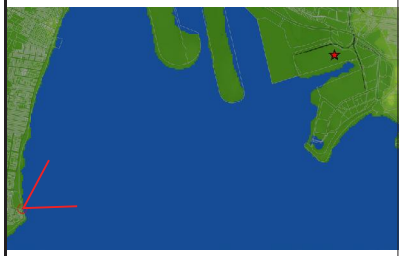
Sensitive visual receptor 6 - Carruthers Drive, Dolls Point	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 6 is located approximately 6.5 km to the south west of the proposal site. There are distant views across Botany Bay but these are diminished by distance with the individual elements of the port becoming less distinguishable from each other. The existing infrastructure on the proposal site such as the cranes and container stacks would also obscure any view of the proposed works. No elements of proposal would likely be seen during the construction and operational phases.
Landscape and Visual Impact	The receptor sensitivity is assessed as **low sensitivity** due to the panoramic views available and recreational use. During the construction phase the landscape was assessed as having a **no perceivable visual reduction**. During the operational phase the landscape was assessed as having a **no perceivable visual reduction**. It is considered that this landscape has a **high potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Not Significant Operational Phase: Not Significant

Photomontage



3D model camera view

VIEWPOINT LOCATION MAP



EXISTING CONDITIONS

TECHNICAL INFORMATION

For indicative purposes only:
Viewpoint Location: 328988.16 E 6237128.16 N
(GDA 1994 MGA Zone 56)
Approximate direction of view: 65°
Approximate distance to control building: 7150m

NOTE:
- Control building would be located behind existing red cranes. It would not be visible from this location point.

LEGEND

P & O cranes

New workshop building

Patrick Stevedores cranes

Existing workshop & amenities buildings

rev	description	drawn	job manager	date
B	Issue for Information	AL	ST	07.02.13
A	Issue for approval	AL	ST	01.02.13

Patrick Stevedores Operations Pty Ltd
Port Botany Building and Infrastructure Improvements

Photomontage
Location 03 - Dolls Point

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 **F** 61 3 8687 8111
E melmail@ghd.com.au **W** www.ghd.com

sheet size	A3	job no.	212196105
date	26.02.13	rev no.	B
approved (PD)	GM		

Figure 4-3

Plot Date: 07.02.13 Plotted by: Aline Lorenzon Cad File No: G:\21\2196105\CADD\Visualisation

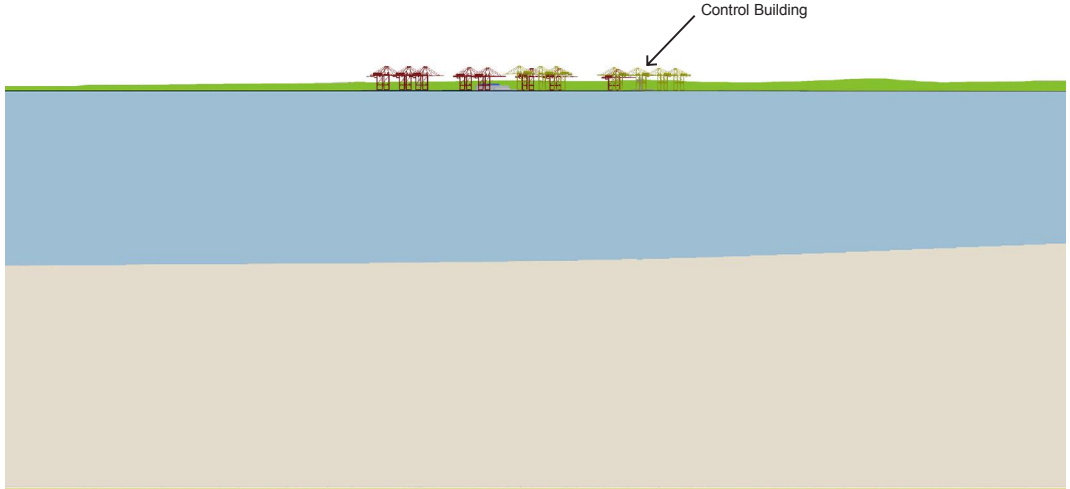
4.8 Sensitive visual receptor 7: Silver Beach, Kurnell

The potential landscape and visual impacts of the proposal on the sensitive visual receptor location at Silver Beach, Kurnell are presented in Table 4-7. A photomontage for this sensitive visual receptor is presented in Figure 4-4.

Table 4-7Sensitive visual receptor 7 Potential Impacts

Sensitive visual receptor 7 - Silver Beach, Kurnell	
Key visual factors	**Description of potential impacts during construction and operation stages**
Visible Elements of the Proposal	Sensitive visual receptor 7 is located approximately 5 km to the south of the proposal site. There are mid length views across Botany Bay. The existing infrastructure in the area such as the cranes, container stacks and liquid bulk storage would obscure views of the proposed works. No elements of proposal would likely be seen during the construction and operational phases.
Landscape and Visual Impact	The receptor sensitivity is assessed as **medium sensitivity** due to the panoramic views available the recreational use and the historic importance of the area. During the construction phase the landscape was assessed as having a **no perceivable visual reduction**. During the operational phase the landscape was assessed as having a **no perceivable visual reduction**. It is considered that this landscape has a **high potential capacity** to accommodate change.
Significance of Impact	Construction Phase: Not significant Operational Phase: Not significant

Photomontage



3D model camera view

VIEWPOINT LOCATION MAP

EXISTING CONDITIONS

TECHNICAL INFORMATION

For indicative purposes only:
Viewpoint Location: 333067.74 E 6235566.47 N
(GDA 1994 MGA Zone 56)
Approximate direction of view: 24°
Approximate distance to control building: 5160m

NOTE:
- Control building would be located behind existing yellow cranes. It would not be visible from this location point.
- Existing workshop and amenities buildings are located behind the existing cranes and containers.
- New workshop building would be located behind the existing cranes, containers and existing workshop and amenities. It would not be visible from this location point.

LEGEND

P & O cranes

New workshop building

Patrick Stevedores cranes

Existing workshop & amenities buildings

rev	description	drawn	job manager	date
B	Issue for Information	AL	ST	07.02.13
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Patrick Stevedores Operations Pty Ltd
Port Botany Building and Infrastructure Improvements

Photomontage
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approved (PD)	GM		Figure 4-4

Plot Date: 07.02.13 Plotted by: Aline Lorenzon Cad File No: G:\21\2196105\CADD\Visualisation

4.9 Lighting Impacts

Existing light poles within the terminal would be re-positioned and replaced with more energy efficient lighting. Light poles in the internal terminal areas would be either 20 metres or 35 metres high with up to 10 luminaires per light pole. Perimeter light poles would be approximately 10 metres high.

Lighting would be the minimum level of illumination necessary and would comply with:

- *AS/NZS 1680.5:2012 Interior and Workplace Lighting.*
- *AS/NZS 1158.3.1:2005 Lighting for Roads and Public Spaces – Pedestrian Area.*
- *AS 4282-1997 Control of Obtrusive Effects of Outdoor Lighting.*
- *CASA Manual of Standards Part 139 – Aerodromes.*

The majority of the terminal areas would be lit to Australian Standard AS1680.5 switchable between lighting levels of 20 lux and 10 lux as required. Truck loading areas would be lit to Australian Standard AS1680.5 switchable between 40 lux and 20 lux as required. Roadway areas would be lit to Australian Standard AS1158.3.1.

Lights would be switched on during the night or at times of poor visibility (i.e. fog or storms) via an on/off photo-electric sensor switch. In addition, as the automated straddle carriers do not require light in which to operate, lighting intensity would also be able to be reduced or increased at the site, as required.

Lighting would be designed so as not to effect the safe navigation of ships or aircraft. In addition, lighting would be designed to focus illumination on the terminal and prevent light spill over Penrhyn Estuary. All luminaires would be installed horizontally and would be pointed towards the terminal.

Overall, lighting within the terminal would be reduced as a result of the proposal.

Detailed design lighting workshops have been carried out on the required lighting levels for the automatic terminal operation. This has resulted in a proposed significant reduction in lighting levels from current levels.

4.10 Protected airspace impacts

International standards have been adopted which define two sets of invisible surfaces above the ground around an airport. The airspace above these surfaces forms the airport's protected airspace. These two surfaces are the Obstacle Limitation Surface (OLS) and the Procedure for Air Navigation Services – Aircraft Operations (PANS-OPS) surface.

The OLS is generally the lowest surface and is designed to provide protection for aircraft flying into or out of the airport when the pilot is flying by sight. The OLS is a series of planes associated with each runway of an airport, which define the desirable limits to which objects may project into the airspace around the airport. Objects penetrating an OLS are defined as obstacles and may need to be marked and/or lit in accordance with CASA requirements.

In addition to the OLS, airports that conduct instrument approach procedures have another series of surfaces that set the minimum obstacle clearances used in the design of each stage of an instrument approach and departure procedure. This surface is known as PANS-OPS. The PANS-OPS surface is generally above the OLS and is designed to safeguard an aircraft from collision with obstacles when the aircraft's flight may be guided solely by instruments (in poor weather conditions).Due to the close proximity of Sydney Airport a review of the OLS and PANS-OPS surface was undertaken.

An assessment of the proposed administration and control building, which has an elevation of approximately 42.5 m relative to the Australian Height Datum (AHD), was undertaken in relation to Sydney Airport's OLS which has a derived elevation of approximately 50.0 m AHD at the closest point to the proposed administration and control building. The proposed administration and control building is some 7.5 m below the OLS and therefore has no impact on the OLS.

The existing cranes on the site have a maximum elevation of 107.1 metres AHD in the boom up configuration. The existing cranes, while penetrating the OLS, are the controlling obstacles across the site for determining the PANS-OPS surface, which is the critical surface for the existing instrument approach and departure procedures at Sydney Airport.

The proposed elevation of the control tower (42.5 m AHD) is some 64.6 m below the existing maximum elevation of the existing cranes in the boom up configuration and therefore will have no impact on the existing PANS-OPS surface.

Construction cranes may need to operate at a height greater than the proposed buildings which may not be approved under the *Airports (Protection of airspace) Regulations*. Should the heights of the cranes exceed the OLS, then detailed assessment would need to be undertaken in consultation with Sydney Airport prior to construction works commencing.

5. Mitigation Measures

5.1 Overview

The aim of this section is to identify mitigation measures that would reduce and / or manage potential adverse impacts of both the construction and operation stages of the proposal on the landscape character and visual amenity. The measures identified are consistent with those outlined in the Determination of Development application DA-453-12-2002.

5.2 Construction Phase

The following controls would facilitate the reduction and management of landscape and visual impacts during construction of the proposal:

- Temporary boardings, barriers, traffic management and signage would be removed when no longer required.
- Materials and machinery would be stored neatly during the works.
- Roads providing access to the site and work areas would be maintained free of dust and mud as far as reasonably practicable.
- Traffic Management and Dust Management Plans would be developed as part of the CEMP to control road usage, and traffic speed to reduce the visual impact of vehicle movements and dust generation.

5.3 Operational Phase

The following controls would facilitate the reduction and management of landscape and visual impacts during operation of the proposal:

- **Landscaping**

A detailed landscape plan would be developed. The plan would detail the proposed methods to be used to maintain the revegetated areas after completion of the works.

A Vegetation Management Plan would be developed as part of the CEMP. The plan would detail proposed methods to be used to maintain the revegetated areas after completion of the works.

Landscaping would be comprised of locally indigenous species, which represents the original plant communities that would have been found along the foreshore in the vicinity of the site.

All noxious weeds, as listed under the NSW Noxious Weed Act 1993, on site would be removed during construction and operation of the proposal.

Appropriate weed management for the site, especially landscaped areas, would be undertaken for the life of the development.

Reduce the dependence on irrigation by planting trees and shrubs that are endemic to the area and capable of withstanding low levels of water.

- **Lighting**

All external lighting associated with the proposal would be mounted, screened, and directed in such a manner so as not to create a nuisance to surrounding properties or roadways. The lighting shall be the minimum level of illumination necessary and shall comply with *AS 4282 1997 - Control of the Obtrusive Effects of Outdoor Lighting*.

5.4 Sustainability elements

An Energy Efficiency Opportunities Assessment was carried on by Engergetics on behalf of Patrick (Energetics 2012). Listed below are some of recommendations based on the results of the assessment

- **Power Factor Correction**

In order to reduce energy consumption, Patrick would incorporate into the design two off 2500 KVAR rated Adaptive VAR Compensators which would provide extremely fast acting electronically switched Power Factor Correction.

This provides more efficient use of electrical power and minimises wastage due to the electrical fluctuations caused by the connection of various loads.

This type of Power Factor Correction operates in milliseconds as distinct to conventional Power Factor Correction which require minutes for operation and are intended for tariff cost reduction.

The result from the VAR Compensator would be to instantaneously maintain the Power Factor to approximately 0.99 minimizing the wasted energy of a poor Power Factor installation.

- **Lighting Design**

Detailed design workshops on required lighting levels for the automatic terminal operation have resulted in design lighting levels being significantly reduced with consequent reduction in energy usage.

All luminaires would have individual power factor correction.

6. Conclusion

The proposal would not have a noticeable negative visual impact on the surrounding area. The visual quality of Port Botany is relatively low. There are many factors that have been discussed that contribute to this including the current industrial nature of the land use, the limited presence of vegetation which when present is often low coastal heath scrub and the flat topography.

The administration and control building and maintenance building and workshop would be visible from a limited number of locations but given the context of the surrounding industrial landscape the change would be minimal.

In summary, the mitigated landscape and visual impacts of the proposal were assessed as not significant from the majority of selected sensitive visual receptor locations. Two of the views were deemed to be of a minor significance.

The remaining visual receptors are either at a reasonable distance from or have good screens of vegetation / topography in the direction of the view to the proposal.

A summary of the outcomes of this assessment are detailed in Table 6-1 for the construction and operational phases.

There would be an overall reduction of lighting from current levels as a result of the measures proposed as part of the proposal.

The proposal would have no impact on the OLS or PANS-OPS surface of Sydney Airport.

Table 6-1Summary of Landscape and Visual Impacts – Construction and Operational Phase

Viewing Location	Visual Modification	Visual Sensitivity	Significance of Impact
VL1 - La Perouse	Small	Medium	Minor
VL2 - Molineaux Point, Port Botany	Negligible	Medium	No significant impact
VL3 - Botany Golf Course, Botany	Negligible	Medium	No significant impact
VL4 - Mill Stream Lookout, Foreshore Beach	Small	Medium	Minor
VL5 - Lady Robinsons Beach, Brighton-le-Sands	Negligible	Low	No significant impact
VL 6- Dolls Point	Negligible	Low	No significant impact
VL 7- Silver Beach, Kurnell	Negligible	Medium	No significant impact

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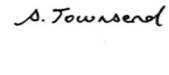
A	Laura Farrell	Scott Graham		Sophy Townsend		21/2/2013
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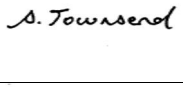
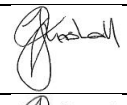
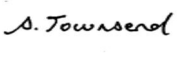
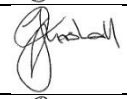
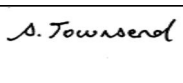
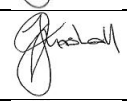
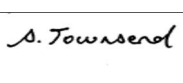
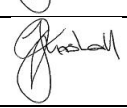
A	S. Townsend R. Exikanas	S. Townsend		Greg Marshall		19.3.2013
B	S. Townsend R. Exikanas	S. Townsend		Greg Marshall		6.5.2013
C	S. Townsend R. Exikanas	S. Townsend		Greg Marshall		20.5.2013
0	S. Townsend R. Exikanas	S. Townsend		Greg Marshall		3.06.2013

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