

A15.0 Landscape and visual

A15.1 Methodology

As detailed within the Environmental Scoping Report (**Ref. 4**), the potential landscape and visual impact associated with the proposed scheme is predominantly considered to be a temporary impact on visual character for sensitive receptors in the vicinity of the proposed scheme footprint during construction. The Environmental Scoping Report stated that significant permanent changes to landscape character and views are not predicted during operation (and were, therefore, scoped out of the assessment). However, it was recognised that the effects of lighting during operation would need to be assessed.

Discussions were held with F.I.G. Planning and Building Services in February and March 2021 regarding the proposed assessment of impacts associated with operational phase lighting. F.I.G. Planning and Building Services made the following comment on the draft Environmental Scoping Report:

“It is suggested that all port lighting from shore to structure be well detailed at submission stages with appropriate software to demonstrate minimal light spillage, glare, sky glow etc. Phillips Calculux or a similar package would suffice and the lighting strategy should demonstrate an equal to or better arrangement than FIPASS currently presents.”

In February 2021, F.I.G. Planning and Building Services were made aware that a detailed lighting design would not be available prior to the planning application being submitted, and therefore it would not be possible to model the glare and sky glow arising from the proposed scheme. As a result, it was agreed that the assessment of impact with regard to operational phase lighting would take the following approach:

- Define the lighting levels that need to be met for the various areas of the proposed scheme.
- Define the layout of lighting columns that is required to meet the lighting levels (with assumptions being made regarding column height).
- Detail the light spill that such a layout would generate (via a light spill contour plot, showing predicted lux levels with distance from the proposed scheme).

The assessment presented in this section is focussed on potential changes to visual character during construction (due to the presence and movement of construction plant and lighting during night time working), and potential changes to the visual environment during operation (as a result of lighting only). It also explains the change in approach for lighting the surface of the quay and not the night sky by use of ships gear lights.

The character of the existing landscape and visual environment has been described on the basis of a site visit undertaken during September 2020. This visit enabled the various receptors potentially affected by the proposed scheme to be determined and their likely sensitivity to the effect of the proposed scheme to be evaluated.

The significance of potential impacts has been largely determined by professional judgement, based on the sensitivity of the receptor combined with the magnitude of effect. In addition, the outputs of an initial lighting design undertaken specifically for the proposed scheme during the operational phase have been used to inform the assessment. The lighting design details the horizontal illuminance levels (referred to as light spill) predicted during the operational phase.

Obtrusive lighting has been assessed in accordance with the Institute of Lighting Professionals (ILP), Professional Lighting Guide 04 – Guidance on undertaking environmental lighting impact assessments. The following assessment criteria have been adopted:

- Sky glow is defined as the level of light spill which is either directed upwards into the night sky in the form of light spill or light pollution.

- Light intrusion is defined as the unwanted spilling of lighting beyond the boundaries of the site for which it is intended, into other areas.
- Luminaire intensity is defined as the magnitude of direct views of the lighting source(s).

Table 15.1 details the significance ratings which have been utilised in this section of the EIS; these have been taken from the aforementioned ILP guidance document.

Table 15.1 Significance ratings applied to the assessment of lighting impacts

Impact significance	Description
Negligible	No Significant effect or overall effects balancing out.
Minor adverse	Slight increase in visibility of site, glare and sky glow, etc.
Moderate adverse	Noticeable increase in visibility in site, glare, and sky glow, etc.
Major adverse	Significant problems with increase in visibility of site, glare, and sky glow, etc.

A15.2 Baseline conditions

This section details the existing landscape and visual baseline of the study area against which the potential impacts of the proposed scheme can be assessed. Baseline conditions consider the following:

- Existing physical landscape characteristics of the proposed scheme footprint and its immediate surroundings.
- Surrounding landscape context, including physical and human characteristics, landscape character and planning context.
- Visual analysis, including factors which influence both the character and availability of views to the site (e.g. visual detractors, local horizons).

A15.2.1 Character of the site and its immediate setting (marine areas)

The proposed scheme footprint comprises part of Stanley Harbour along its southern shore and the hinterland to the immediate south. The marine areas of the proposed scheme footprint are currently dominated by FIPASS, which extends approximately 200m into the Harbour from the southern shore (**Plate 15.1** and **15.2**).

FIPASS is accessed via FIPASS Road, and comprises a floating structure consisting of six pontoon open deck or warehouse barge units and one Ro-Ro pontoon unit. The visual appearance of FIPASS is considered to be poor due to its ageing structures (e.g. extensive signs of rusting shown in **Plate 15.1**). Another berthing facility known as the TDF is present approximately 400m to the east of FIPASS, with the remains of a pier a further 125m to the east of the TDF.



Plate 15.1 **View westwards showing FIPASS**

The landscape seaward of the location of the proposed scheme (to the north) is characterised by the open marine environment of Stanley Harbour with the Cape Pembroke headland immediately opposite. The wreck of the Lady Elizabeth in Whalebone Cove is visible to the north-east (**Plate 15.3**).



Plate 15.2 **View north from FIPASS Road showing FIPASS in the background**



Plate 15.3 **The wreck of the Lady Elizabeth in Whalebone Cove with Cape Pembroke beyond**

Approximately 500m to the east of the proposed scheme footprint is a relatively narrow tidal inlet of Stanley Harbour called the Canache. The coast surrounding the Canache is relatively uninhabited and is mainly coastal habitat. Airport Road runs around the eastern end of the Canache, and the western end is crossed by Boxer Bridge. **Plate 15.4** and **Plate 15.5** show the eastern end of the Canache at high and low tide, respectively.



Plate 15.4 **View of the eastern end of the Canache at high tide looking in a south-westerly direction**



Plate 15.5 View of the eastern end of the Canache at low water looking in a south-westerly direction

A15.2.2 Character of the landside areas of the proposed scheme footprint and its immediate setting

Within the immediate vicinity of the proposed scheme footprint, the topography varies between approximately 7m above sea level (ASL) and 0m ASL. Approximately 500m to the west of the proposed scheme footprint, the ground rises to approximately 46m ASL and continues to rise in elevation moving further west towards Stanley. The ground reaches its highest point in the area at Sapper Hill which sits at an elevation of approximately 138m ASL.

The environment surrounding the site of the proposed scheme is, to the landward side, characterised by commercial use. The Stanley Town Plan (F.I.G., 2015a) identifies nine broad development zones within Stanley which set out in broad terms how it is envisaged each area will be developed. The proposed scheme footprint is located within an industrialised area, designated in the Stanley Town Plan as 'Zone 6 – Heavy Industrial' (F.I.G., 2015a). The proposed new access road to the quay is within 'Zone 2 – 'Greater Stanley Area' (specifically an area of open space as shown on the Stanley Town Plan (2015-2030). The Stanley Town Plan states the following with regard to Zone 2:

"As per Central Stanley this area has a mixture of uses. However, the majority of this zone is comprised of the established residential areas of Stanley. The potential for expansion to the North-West of the Zone is reflected in allocated land, with the Golf Course forming a natural boundary to this development. It is not envisaged that the character or uses within this area will significantly change, although opportunities for environmental enhancement, particularly of the light industrial, warehousing and storage and commercial developments to the South West of the Zone. There may be potential in the longer term for the expansion of commercial areas to the North-East of this zone, including Western access to FIPASS, however the retention of some form of buffer area between this and established residential areas will be important."

The temporary works areas required during construction span across Zone 6, Zone 2 and Zone 5 (Light Industrial).

There are a number of warehouses, areas of existing hardstanding, a fuel depot, oil yards and storage areas along the coastal strip. The Stanley Town Plan states that Zone 6 is "sufficiently far from Stanley to be used for container parks and larger scale industrial uses and warehousing and storage without detriment to the residential areas of Stanley."

In addition to the commercial uses, there are areas of coastal habitat located in between the shoreline and the commercial uses. There are agricultural fields at Stanley Growers to the immediate south of FIPASS, as well as a number of polytunnels (**Plate 15.6**). In addition, a coastal footpath runs along the coastline, linking Stanley to areas of recreational and amenity interest to the east (e.g. Cape Pembroke).

Photographs from a site visit in September 2020 showing the land use in the vicinity of the proposed scheme footprint are provided in **Plates 15.6 to 15.8**.



Plate 15.6 View north looking towards FIPASS in the background and polytunnels at Stanley Growers in the foreground



Plate 15.7 Entrance to Stanley Fuel Terminal and the FIPASS causeway



Plate 15.8 The coastal footpath and land at Stanley Growers

A15.2.3 Lighting

A15.2.3.1 General

The New World Atlas of Artificial Brightness shows that the Falkland Islands are a relatively dark sky area, with the majority of the population living with very little light pollution (CIRES, 2020). It can, therefore, be inferred that residential receptors within Stanley are sensitive to the effects of lighting at night.

A15.2.3.2 Existing sources of lighting at Stanley

The main lighting sources within Stanley and its immediate surroundings comprise street lighting and lighting from industrial premises, FIPASS and the TDF. FIPASS is illuminated using a combination of lighting columns and wall-mounted LED lanterns. Illuminance level calculations provided by the current operators of FIPASS confirm that average maintained illuminance levels across FIPASS range from 20 lux to 27 lux (see **Drawing LS24384_1**). The pontoon structure at the rear also has flood lighting for use for night-time use.

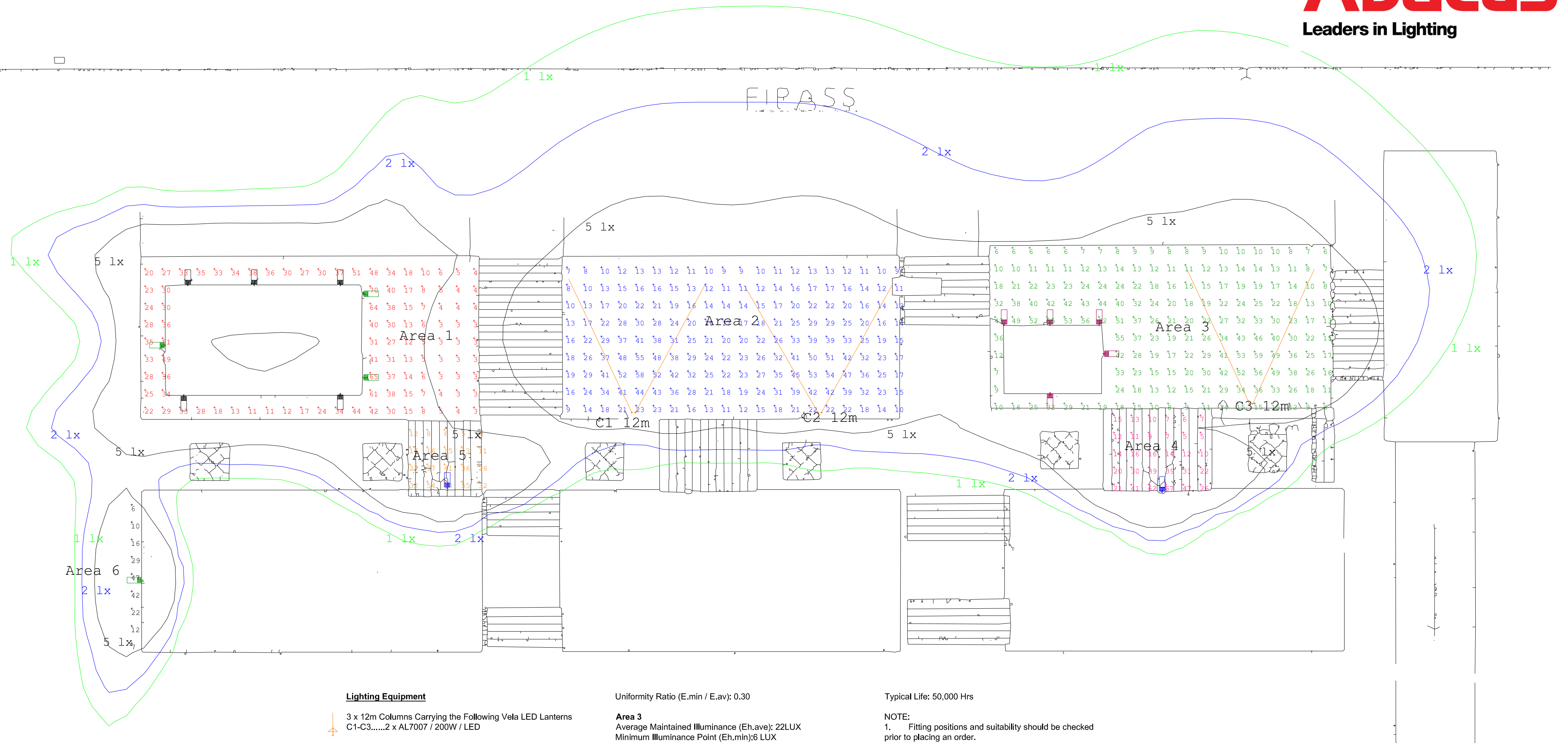
Vessels berthed at FIPASS need to utilise their on-board lights to provide sufficient lighting during loading and unloading operations at night. Such lighting can be directed landwards, providing a source of lighting disturbance to Stanley. Photographs showing the existing lighting at FIPASS were taken during March 2021 for the following scenarios (all photographs were taken from the site of the Tussac House Extra Care Facility):

- FIPASS at dusk without the area lighting on (**Plate 15.9**)
- FIPASS at night with the area lighting on without a vessel berthed (**Plate 15.10**)
- FIPASS at night with the area lighting on with a vessel berthed with its lights on (**Plate 15.11**).



Plate 15.9

Photograph of FIPASS at dusk without the area lighting on (Source: AtLink)



Lighting Equipment

- 3 x 12m Columns Carrying the Following Vela LED Lanterns
C1-C3.....2 x AL7007 / 200W / LED
- 4 x 4.6m Wall Mounted Arte LED Lanterns
...1 x AL21102 / 60W / A3
- 5 x 6.1m Wall Mounted Arte LED Lanterns
...1 x AL21102 / 60W / A3
- 5 x 5.7m Wall Mounted Arte LED Lanterns
...1 x AL21102 / 60W / A3
- 2 x 4.8m Wall Mounted Arte LED Lanterns
...1 x AL21102 / 90W / A3

HORIZONTAL ILLUMINANCE DETAILS

Area 1
Average Maintained Illuminance (Eh.ave): 21 LUX
Minimum Illuminance Point (Eh.min): 3 LUX
Uniformity Ratio (E.min / E.av): 0.14

Area 2
Average Maintained Illuminance (Eh.ave): 23 LUX
Minimum Illuminance Point (Eh.min): 7 LUX

Uniformity Ratio (E.min / E.av): 0.30

Area 3
Average Maintained Illuminance (Eh.ave): 22 LUX
Minimum Illuminance Point (Eh.min): 6 LUX
Uniformity Ratio (E.min / E.av): 0.27

Area 4
Average Maintained Illuminance (Eh.ave): 20 LUX
Minimum Illuminance Point (Eh.min): 5 LUX
Uniformity Ratio (E.min / E.av): 0.25

Area 5
Average Maintained Illuminance (Eh.ave): 27 LUX
Minimum Illuminance Point (Eh.min): 7 LUX
Uniformity Ratio (E.min / E.av): 0.25

Area 6
Average Maintained Illuminance (Eh.ave): 21 LUX
Minimum Illuminance Point (Eh.min): 6 LUX
Uniformity Ratio (E.min / E.av): 0.28

Grid Values & Contours in LUX
Grid Point Intervals: 3.0m
Contour values: 1,2 & 5 LUX

Maintenance Factor: 0.90
Location: Medium Pollution

Typical Life: 50,000 Hrs

NOTE:
1. Fitting positions and suitability should be checked prior to placing an order.

Lighting Project: Falkland Islands		
Title: Horizontal Illuminance Levels		
Design Ref:	LS24384_1	Revision(s) From Previous Design: Removed C4
Design By:	Thomas Ford	
Date: 24/04/2018	Scale: A2 @ 1-500	
All illuminance values are the result of computer calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.		



Plate 15.10 Photograph of FIPASS at night with the area lighting on and no vessel berthed (Source: AtLink) with coastal lighting off and also new street lights not operational



Plate 15.11 Photograph of FIPASS at night with the area lighting on and a vessel berthed with its lights on (Source: AtLink)

Plate 15.10 and **15.11** illustrate that light glare / glow is noticeably greater when there is a vessel berthed at FIPASS during the night time (compared to when there is no vessel berthed at FIPASS at night).

It has been reported that lighting generated from oil exploration vessels berthed at the TDF at night during 2015 led to a community complaint (Premier Oil, 2018).

A15.2.4 Future evolution of the baseline condition in the absence of the proposed scheme

In the absence of the proposed scheme, it is likely that FIPASS would continue to be used, with its condition continuing to deteriorate. Ultimately, it is possible that FIPASS would degrade to such an extent that its use would become limited.

A power station is proposed to be constructed in close proximity of the laydown and stockpile area shown on **Figure 4.1**, and Tussac House Care Facility is proposed to be constructed to the south-west of the proposed scheme footprint. These new infrastructure developments have potential to alter the existing landscape and visual amenity value.

A15.3 Potential impacts during construction

A15.3.1 Presence and movement of construction plant (including cranes)

Construction activities will include establishment of site offices and welfare facilities, materials storage and laydown areas, accommodation areas, a concrete batching plant and pre-cast yard and site hoarding and fencing. Site activities during construction will be varied and will include stripping and temporary stockpiling of soils and materials (as well as surficial silt to be removed from the bed of Stanley Harbour). There will be constant and varied vehicular movements and on-site activity.

Construction works will require the use of relatively tall plant including cranes and piling rigs, and the presence of such plant could result in impacts on the existing landscape character and visual amenity value. In addition, there will be a requirement for some lighting during the construction phase to enable the works to be undertaken safely. There will also be geotubes present within the remediation area shown on **Figure 4.1** which would be a source of visual disturbance to users of the local area (an indication of what the geotubes will look like can be found in **Plate 4.1**).

Given the setting of the proposed scheme footprint adjacent to a commercial area and immediately adjacent to FIPASS and the TDF, with the associated marine activities and vessel movements, the immediate environment is considered to be of low sensitivity to the effect of the construction works. In this context, although the construction works would be apparent and noticeable from the seaward direction (looking landward) and from Cape Pembroke, the visual impact on amenity of the area is not predicted to be significant. Although there are laydown and storage areas which would be visible to users of Airport Road, the main construction site is visually isolated from users of Airport Road due to the other commercial activity present between the shoreline and the road. In addition, road users would only experience transient views as they travel past the site. Consequently, there would be a **negligible** effect on users of the road itself.

A lit and concreted coastal footpath runs along the coastline within the footprint of the proposed scheme. As noted in **Section A4.1**, the footpath would be diverted prior to construction commencing to route the path around the main construction area. Whilst it is not possible to avoid effects in view quality towards the construction works from the footpath, any disturbance would be temporary only (for the duration of the construction phase – approximately 2.5 years). In addition, views of the works would only be visible from a relatively short section of the footpath in the vicinity of the construction works. Any impact would also be temporary as amenity users walk along the path (i.e. they would only experience an impact to the existing view for a short distance as they walk along the path).

The presence of major construction works can actually result in a great degree of local interest, and therefore users of the coastal footpath may consider the construction works to be of interest. A public information point overlooking the construction works will be provided.

Overall, given the temporary nature of the disturbance and the transient nature of the receptor (i.e. people walking along the path), there would be an impact of **negligible** significance to users of the coastal path during construction.

The site of the proposed scheme is located approximately 0.5km to the east of residences in Stanley (at the closest point) (i.e. the Ross Road East and Rowlands Rise area) and no residential properties overlook the site (with the exception of the Seafarer's Mission, which is immediately inland). The main residences within Stanley are not significantly visually exposed to the site of the proposed construction works due to topography between east Stanley and the site (there is a slight rise in land level between Stanley and the site) (**Plate 15.12**).

It should be noted, however, that there is a line of sight between parts of the town of Stanley and the proposed scheme footprint. The construction of the marine elements of the proposed scheme (including the causeway and the new quay, as well as removal of FIPASS) are likely to be the most visible to residents within east Stanley (albeit at a distance of at least 0.5km). Given the temporary nature of the proposed construction works, in addition to the separation distance between the residents in east Stanley and the proposed scheme, an impact of **minor adverse** significance is predicted.

Businesses and workers in the commercial area are considered to be less sensitive than residents and recreational users to the visual effect of construction works. Although the commercial properties are in closer proximity to the proposed scheme footprint and users would be present within commercial properties for the duration of the working day, it is predicted that the temporary visual effect of the construction works on these receptors would not be of concern and, therefore, an impact of **negligible** significance is predicted.

The envisaged construction impact in terms of lighting is to be envisaged to be Minor to Moderate Adverse, with the noticeable/observable impact, been associated luminaire intensity, due to the lighting levels typically associated with construction lighting and the typical nature of hired plant equipment, light fitting/luminaire wise. It should be noted that construction lighting is temporary in nature, deployed for specific activities in specific areas, during the hours of darkness.



Plate 15.12 View looking east in the direction of the proposed construction area taken from adjacent to the residences in east Stanley. Photo shows the rise in land between east Stanley and the proposed scheme footprint

A15.3.1.1 Mitigation and residual impact

It is not possible to fully mitigate the predicted impact to residents in Stanley, as construction works and the presence of plant, equipment and lighting are an unavoidable consequence of the proposed scheme. However, in order to reduce the potential for impact, construction lighting will be directed away from the main residential area of Stanley

where possible and standard good site practice measures will be followed during construction. These measures will mainly relate to site management and ensuring that the construction site is maintained in an orderly manner with the extent of the onshore construction works delineated with fencing and equipment and material stored in a tidy fashion in defined areas. In addition, construction lighting will only be operated when work when required to allow works to be undertaken safely or for security purposes. The residual impact to residents in east Stanley is predicted to be of **minor adverse** significance.

The residual impact to users of the coastal footpath, Airport Road and people within commercial properties adjacent to the proposed scheme footprint is predicted to be of **negligible** significance.

A15.4 Potential impacts during operation

A15.4.1 Lighting during night-time working and operations

Discussions are ongoing with F.I.G. to agree the proposed lighting on the quay, causeway and access road. However, for the purposes of the assessment presented below, the following lighting arrangements have been assumed on the quay, causeway and access road (shown on **Drawing PB7829-RHD-ME-ZZ-DR-E-5026**).

- Quay – 50 lux average maintained horizontal level (assumed from three, 30m high masts).
- Work area on the quay – 20 lux average maintained horizontal level (assumed from three high masts).
- Causeway – 20 lux average maintained horizontal level (from street lighting similar to that used on adjacent roads).

It is proposed that the new access road up to the causeway will be lit using standard street lighting used on other urban roads within Stanley. These have also been recently installed on FIPASS Road and the adjoining roads. The location of the proposed scheme and its immediate surroundings are strongly influenced by the presence of commercial and industrial facilities. Given that the development of the proposed scheme will involve the dismantling of FIPASS, the proposed scheme will not introduce elements of a different character to the current situation during the operational phase (i.e. the proposed scheme will be in keeping with the character of the area). Overall, the visual appearance of the area will be improved due to the removal of ageing infrastructure on FIPASS (as well as removal of FIPASS itself which is also in a poor state of repair).

However, the characteristics of the lighting required for the proposed scheme will differ from FIPASS and the potential implications of this change (from a light spill perspective, as agreed with F.I.G. Planning and Building Services) have been assessed below.

As shown on **Drawing PB7829-RHD-ME-ZZ-DR-E-5026**, an initial lighting design has been undertaken to accommodate the needs of the proposed scheme, based around the provision of average illuminance levels detailed above. For reference, equivalent lighting levels are as follows:

- A moon lit night 0.27 lux up to 2 lux.
- Residential roads, footways & cycle tracks average of 15 lux to 2 lux depending on road characteristics.
- City, town and urban centre's average of 50 lux to 7.5 Lux depending on character and location.
- Typical family living room 50 lux.
- Daylight 10,000 lux.
- Office typically 500 lux above desks.

Lighting on FIPASS currently provides an average illuminance of 20 to 27 lux; this level of lighting does not meet current required standards for operational port areas. It is therefore evident that the illuminance levels arising from the proposed scheme will be greater than existing levels at FIPASS given the need to provide a lighting scheme that meets current health and safety requirements for operational ports.

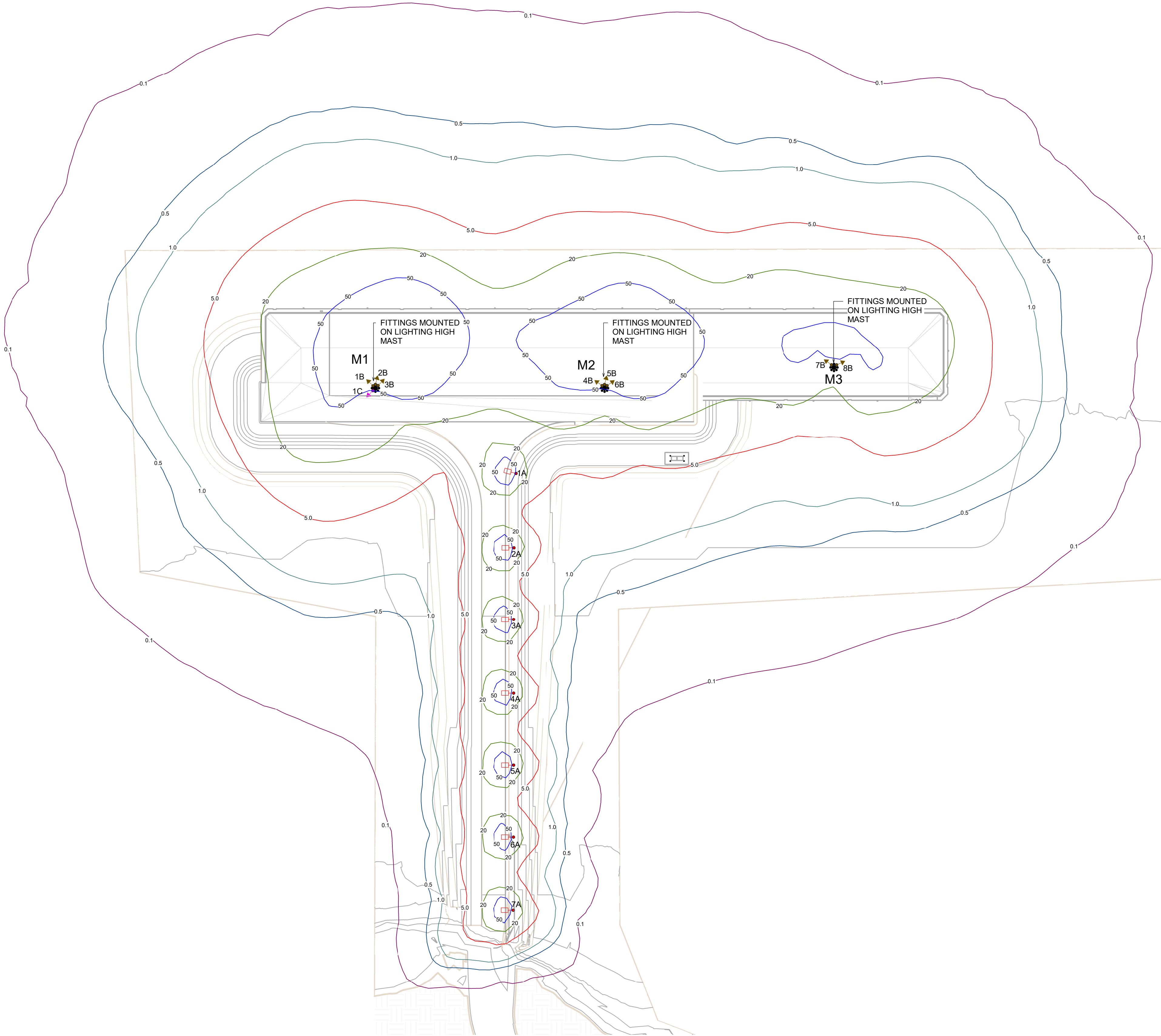
It should be noted, however, that during loading / unloading at night, berthed vessels are required to utilise their on-board lighting to supplement the lighting on FIPASS (see **Plate 15.10** and **15.11**). Such lighting points directly inland and is therefore a likely source of disturbance to the light sensitive receptors in Stanley. The fact that vessel lighting is required when berthed at night suggests that the levels of lighting on FIPASS are not adequate to safely operate the facility (and therefore greater illuminance levels to those reported above are likely during loading / unloading operations occurring at FIPASS during the night).

The provision of greater average illuminance levels during the operational phase of the proposed scheme compared to those on FIPASS is intended to remove the need for vessels to utilise their own lighting when berthed at night, removing a source of potential lighting disturbance to Stanley. A number of measures have been embedded into the proposed scheme design to minimise the potential impacts from operational phase lighting (detailed in **Section A4.3.1.2**); these comprise:

- Adopting the lowest safe lighting levels possible for the task being undertaken.
- Ensuring the luminaire is mounted at zero degrees to the horizontal and avoid any tilt where possible.
- Directing luminaires into the area to be lit (light from the boundary inwards).
- Placing lighting equipment so it makes use of the natural topography, buildings and bunds to minimise its visibility to sensitive receptors.
- Using a luminaire with good optical control.
- Minimising the mounting height of the luminaire.
- Limiting the hours of lighting operation where possible.
- Making use of manufactures supplied louvers/shields.
- Providing local control for the lighting so it may be switched off when not required.

The lighting on the quay is proposed to be focussed in a predominantly seaward direction (with some lighting being emitted in a southerly and east-west direction to adequately illuminate the rear and sides of the quay). These measures, as well as those detailed above, are intended to reduce the potential impact of lighting from the proposed scheme to Stanley.

From a light spill perspective, **Drawing PB7829-RHD-ME-ZZ-DR-E-5026** illustrates that light is predicted to spill predominantly in a northerly and easterly direction, away from the proposed new quay. At the south-western corner of the proposed new quay, a light spill level of 1 lux is predicted. Lighting from the quay is therefore not predicted to spill into public and private spaces on the hinterland.



LEGEND

- 0.1 CONTOUR - 0.1 lux
0.5 CONTOUR - 0.5 lux
1.0 CONTOUR - 1.0 lux
5.0 CONTOUR - 5.0 lux
20 CONTOUR - 20 lux
50 CONTOUR - 50 lux

8m ROAD LIGHTING COLUMN (TYPE A)
SUPPLIER - ABACUS
(OR APPROVED EQUIVALENT)
LUMINAIRE TYPE - AIG2007-2-190-4k
LUMEN OUTPUT - 19350 lumens
MOUNTING HEIGHT = 8m AFGL
OUTREACH ARM - 1.5m
LED COLOUR TEMPERATURE - 4000K
INCLINATION (WITH RESPECT TO HORIZONTAL PLANE) - 0 DEGREE'S

#A



30m HIGH MAST LIGHTING (TYPE B)
SUPPLIER - ABACUS
(OR APPROVED EQUIVALENT)
LUMINAIRE TYPE - CHALLENGER 1 LED (AL6202)
NUMBER OF LUMINAIRES MOUNTED ON EACH COLUMN = (AS INDICATED)
WATTAGE - 1000W
LUMEN OUTPUT - 135000 lumens
LED COLOUR TEMPERATURE - 4000K
MOUNTING HEIGHT = 30m AFGL
INCLINATION (WITH RESPECT TO HORIZONTAL PLANE) - 40 DEGREE'S

#B



30m HIGH MAST LIGHTING (TYPE C)
SUPPLIER - ABACUS
(OR APPROVED EQUIVALENT)
LUMINAIRE TYPE - CHALLENGER 1 LED (AL6302)
NUMBER OF LUMINAIRES MOUNTED ON EACH COLUMN = (AS INDICATED)
WATTAGE - 500W
LUMEN OUTPUT - 65000 lumens
LED COLOUR TEMPERATURE - 4000K
MOUNTING HEIGHT = 30m AFGL
INCLINATION (WITH RESPECT TO HORIZONTAL PLANE) - 40 DEGREE'S

#C



M#



LIGHTING HIGH MAST

NOTES

1. THE PURPOSE OF THIS DRAWING IS TO SHOW EXTERNAL ILLUMINANCE CONTOURS FROM THE FIXED LIGHTING. THE LIGHTING UNITS SELECTED ARE BASED UPON INDUSTRY STANDARD LUMINAIRES AND MAY NOT BE THE EXACT UNITS PROPOSED.
2. REFER TO DRAWING PB7829-RHD-ME-ZZ-DR-E-0029, FOR AREA LIGHTING LUX LEVEL PLAN.
3. THE CONTROL PHILOSOPHY IS FOR THE LIGHTING TO BE ON DURING THE OPERATION OF THE RELEVANT AREAS, TO ENSURE SUITABLE ILLUMINATION OF WORK AREAS.
4. A MAINTENANCE FACTOR OF 0.85 HAS BEEN USED IN THE LIGHTING DESIGN SIMULATION, NOTING THAT THE ISOLUX CONTOURS INDICATED ON THIS LAYOUT ARE BASED UPON A MAINTENANCE FACTOR 1 TO INDICATE INITIAL MAXIMUM OUTPUT AT SWITCH ON.
5. THE ISOLUX CONTOURS INDICATED, REFLECT THE PROPOSED NEW LIGHTING SCHEME.
6. THE ISOLUX CONTOURS INDICATED ARE REFLECTIVE OF THE LIGHTING SPILL WITHOUT ANY BARRIERS (I.E. FENCES) OR MITIGATION MEASURES.
7. ADDITIONAL BUILDING MOUNTED LIGHTING SHALL BE PROVIDED TO THE PERIMETER OF BUILDING A (AND OTHER BUILDINGS AS REQUIRED) TO COMPENSATE FOR SHADOWS CAUSED BY BUILDINGS AND TO MITIGATE THE CORRESPONDING HAZARDS THAT MAY ARISE (NOTE THAT THIS SCHEME DOES NOT MODEL OBSTRUCTIONS).
8. WHERE MANUFACTURERS ARE INDICATED, THESE SHALL BE ABACUS OR AN APPROVED EQUIVALENT PRODUCT. WHERE EQUIVALENT PRODUCTS ARE PROPOSED, THESE SHALL BE VERIFIED BY THE CONTRACTORS APPOINTED LIGHTING DESIGNER.

**NOT FOR
CONSTRUCTION**

P03	05.01.22	LIGHTING NUMERICAL SEQUENCE UPDATED	JG	JN	CF
P02	07.12.21	AMENDED FOR STAGE APPROVAL	JG	JN	CF
P01	25.11.21	FOR INFORMATION	JG	JN	CF
REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT



PROJECT

**NEW PORT FACILITY AT THE
FALKLAND ISLANDS**

TITLE

**EXTERNAL ISOLINE
CONTOURS FOR ARTIFICIAL
LIGHTING**



DRAWN	JG	CHECKED	JN	APPROVED	CF
DATE	25.11.21	SCALE	1 : 1000	RHDHV DRAWING No.	PB7829-RHD-ME-ZZ-DR-E-5026
BAM DRAWING No.	BAS2051-RHD-ME-ZZ-DR-E-5026	SUITABILITY	REVISION	S4	P03

Illustrations of the proposed scheme at night can be seen in **Plate 15.1, 15.2** and **15.3**.



Plate 15.1 Illustration of the proposed port facility at night (view is looking north when standing at the landward end of the proposed new causeway)

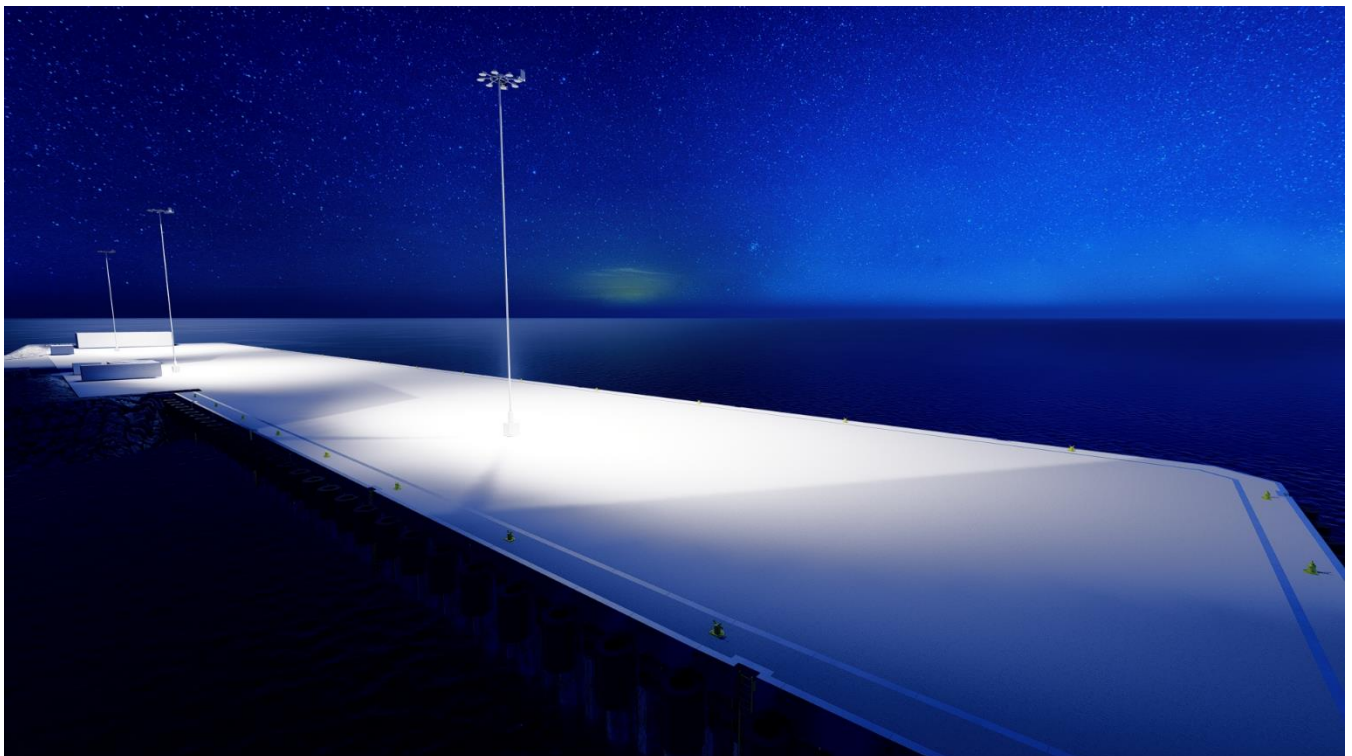


Plate 15.2 Illustration of the proposed quay at night (view is looking west when standing at the eastern end of the proposed new quay)

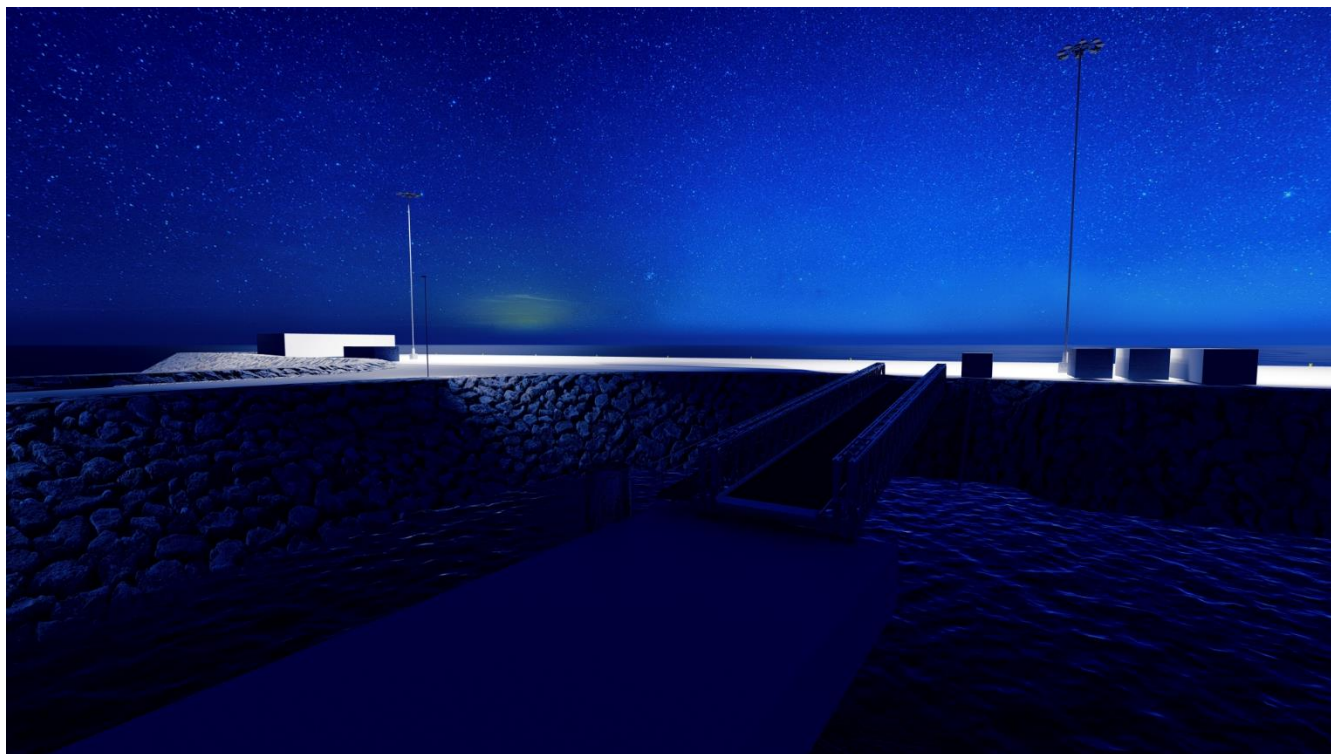


Plate 15.3 Illustration of the proposed quay at night (view is looking north towards the quay when stood on the proposed pontoon)

Based on the above, it is evident that the proposed scheme will provide greater levels of lighting on the quay compared to levels currently experienced at FIPASS (and therefore the proposed scheme is likely to be more noticeable at night to residents in Stanley compared to FIPASS). Such lighting is considered necessary to safely operate the quay during the hours of darkness. However, the design is predicted to remove the need for vessels to utilise their own navigation lights when berthed at night, which removes a significant source of lighting disturbance to Stanley. In addition, a number of mitigation measures have already been built into the scheme design to minimise the risk of lighting disturbance.

Based on the above, and on the assumption that the new facility avoids the need for ships to use their on-board lights when berthed at night, it is considered that the overall impact from operational phase lighting would be neutral, and consequently an impact of **negligible** significance is predicted.

A15.4.1.1 Mitigation and residual impact

No further mitigation measures are proposed beyond those which have already been incorporated into the proposed scheme design. The overall residual impact from operational phase lighting is **negligible**.

A15.4.2 Disturbance to views from the Seaman's Mission

The presence of the access road during the operational phase of the proposed scheme has potential to alter the views inland from the Seaman's Mission. Given the ground conditions and groundwater levels within the construction area, as well as the natural topography of the area, the new access road will appear to stand proud of the existing access track by approximately 1m (locally). People within the Mission will therefore notice the presence of an embankment on the northern side of the access road, which is a minor change from the existing view. The views out to sea from the Seaman's Mission will also change through the removal of the existing causeway and the degrading FIPASS structures during the construction phase; this is considered to be a beneficial impact during the operational phase due to the degrading condition of FIPASS. Overall, an impact of **negligible** significance is predicted.

A15.4.2.1 *Mitigation and residual impact*

No mitigation measures are required. The residual impact is of **negligible** significance.