## A11.0 Archaeology and cultural heritage

## A11.1 Methodology

#### A11.1.1 Data sources

The primary data sources used to inform the assessment of impacts to archaeology and cultural heritage have comprised:

- Geotechnical data from site-specific ground investigation.
- Information of wrecks, historic buildings and cultural heritage sites provided by the Falkland Islands Museum and National Trust.
- Relevant mapping including Admiralty charts and historic maps.
- Relevant documentary sources and grey literature. This includes relevant reports and websites relating to the history of the Falkland Islands, wrecks and historic structures within Stanley.

#### A11.1.2 Impact assessment methodology

Potential impacts to archaeology and cultural heritage can include:

- direct (physical) impacts which result in damage to, or destruction of, heritage assets and buried/submerged archaeological material or its physical setting (context) within the footprint of proposed scheme;
- indirect (physical) impacts to offshore and intertidal heritage assets from changes to hydrodynamic and sedimentary process which trigger degradation associated with changes in physical, biological or chemical processes (e.g. buried assets which become exposed to marine physical processes are subject to greater potential for degradation than those which remain buried); and
- non-physical impacts including changes to the historic character or setting of heritage assets within a defined study area.

In the absence of industry standards and guidance within the Falkland Islands for the assessment of impacts to archaeology and cultural heritage, the assessment presented below has been undertaken in accordance with industry standards and guidance used in the UK (summarised in **Table 5.2**).

The impact assessment defines heritage assets, and their settings, likely to be impacted by the proposed scheme and assesses the level of any resulting benefit, harm or loss to their significance. The assessment is not limited to direct (physical) impacts, but also assesses possible indirect (physical) impacts on heritage assets which may arise as a result of changes to hydrodynamic and sedimentary processes and indirect (non-physical) impacts upon the setting of heritage assets, whether visually, or in the form of noise, dust and vibration, spatial associations and a consideration of historic relationships between places.

The sensitivity of a receptor is a function of its capacity to accommodate change and reflects its ability to recover if it is affected. However, while impacts to a heritage asset's setting or character can be temporary, impacts which result in damage or destruction of the assets themselves, or their relationship with their wider environment and context, are permanent. Once destroyed an asset cannot recover. On this basis, the assessment of the significance of any identified impact is largely a product of the heritage significance (importance) of an asset (rather than its sensitivity) and the perceived magnitude of the effect on it, assessed and qualified by professional judgement.

More specifically the impact assessment presents:

- The heritage significance (importance) of any heritage assets identified being affected.
- The anticipated magnitude of effect (change) upon those assets and their settings.
- The significance of any identified impacts upon those assets and their settings.

• The level of any harm (or benefit) and loss of heritage significance (importance).

The criteria for determining the heritage significance of assets is defined in **Table 11.1**.

#### Table 11.1 Indicative (outline) criteria for determining heritage significance (importance)

Heritage significance	Definitions / example assets
Very high (perceived International Importance)	Assets of acknowledged international importance (e.g. World Heritage Sites) and undesignated assets of the quality and importance to be designated under international legislation). Assets that can contribute significantly to acknowledged international research objectives.
High (perceived International / National Importance)	Assets of acknowledged national importance (e.g. Protected Monuments, Listed Buildings, Designated Wrecks and undesignated assets of the quality and importance to be designated under national legislation). Assets that can contribute significantly to acknowledged national research objectives.
Medium (perceived Regional Importance)	Assets that contribute to regional research objectives. Assets with regional importance, educational interest or cultural appreciation
Low (perceived Local Importance)	Assets that contribute to local research objectives. Assets with local importance, educational interest or cultural appreciation. Assets that may be heavily compromised by poor preservation and/or poor contextual associations
Very low	Assets with no significant importance or archaeological / historical interest.
Unknown	The importance / existence / level of survival of the asset has not been ascertained (or fully ascertained/understood) from available evidence.

Consultation with the Falkland Islands Museum, National Trust and Falkland Islands Development Corporation has been undertaken to ensure that the most up to date information on heritage assets is obtained (in order to assist with determination of heritage significance). This has been supplemented by secondary sources and the results of ground investigations to further assess the potential for submerged and buried archaeology which could be impacted during construction.

Where uncertainty occurs, the precautionary approach is to assign high importance (and hence high sensitivity). This precautionary approach represents good practice in archaeological impact assessment and reduces the potential for impacts to be underestimated.

It is crucial that for each asset there is a narrative accompanying the assessment which clearly sets out the reasoning (in accordance with the above factors) and the measure of professional judgement employed in assessing the importance of that asset. This is presented in **Section A11.2**.

The classification of the magnitude of effect on heritage assets takes account of such factors as:

- the physical scale and nature of the anticipated disturbance; and,
- whether specific features or evidence would be lost that are fundamental to the historic character and integrity of a given asset, and its understanding and appreciation.

The finite nature of archaeological remains means that direct physical impacts (e.g. those arising as a result of intrusive groundworks) are almost always adverse, permanent and irreversible; the 'fabric' of the asset and, hence,

its potential to inform our historical understanding, will be removed. By contrast, indirect non-physical effects upon the setting of heritage assets will depend upon the scale and longevity of the potential effect. Similarly, indirect physical impacts (e.g. increased burial or exposure of heritage assets arising as a by-product of changes to hydrodynamic and sedimentary regimes resulting from a project) may also depend upon scale and longevity. The criteria used for assessing the magnitude of adverse and beneficial effect with regard to archaeology and cultural heritage are presented in **Table 11.2**.

Magnitude	Adverse / negative effects	Beneficial / positive effects
Very high	Loss of resource; severe damage to key characteristics, features or elements. Permanent / irreplaceable change, which is certain to occur.	Large scale improvement of resource or attribute quality; extensive restoration or enhancement.
High	Loss of resource; partial loss of or damage to key characteristics, features or elements. Permanent / irreplaceable change, which is likely to occur.	Improvement to, or addition of, key characteristics, features or elements of the resource; improvement of attribute quality.
Medium	Minor loss of, or alteration to, one (maybe more) key characteristics, features or elements; measurable change in attributes, quality or vulnerability. Long-term though reversible change, which is likely to occur.	Minor improvement to, or addition of, one (maybe more) key characteristics, features or elements of the resource; minor improvement to attribute quality.
Low	Very minor loss of, or alteration to, one (maybe more) key characteristics, features or elements; noticeable change in attributes, quality or vulnerability. Short- to medium-term though reversible change, which could possibly occur.	Very minor improvement to, or addition of, one (maybe more) key characteristic, feature or element; very minor improvement to attribute quality.
Very low	Temporary or intermittent very minor loss of, or alteration to, one (maybe more) characteristic, feature or element; possible change in attributes, quality or vulnerability. Short-term, intermittent and reversible change, which is unlikely to occur.	Possible very minor improvement to, or addition of, one (maybe more) characteristic, feature or element; possible improvement to attribute quality.

#### Table 11.2 Guidelines used in the determination of magnitude of effect

The significance of any identified impact expressed as a product of the heritage significance (importance) of an asset and the perceived magnitude of the effect on it will be determined in accordance with the significance matrix presented in **Table 11.3**. The impact significance categories are divided as shown in **Table 11.4**. The outcome will thereafter be assessed and qualified by expert judgement, expressed as a narrative description of the level of harm and/or benefit to heritage significance of identified assets.

#### Table 11.3 Definition of the significance of potential impacts

Horitago cignificance	Magnitude of effect					
nemage significance	Very high	High	Medium	Low	Very low	
Very high	Major	Major	Moderate	Moderate	Minor	
High	Major	Moderate	Moderate	Minor	Negligible	
Medium	Moderate	Moderate	Minor	Minor	Negligible	
Low	Minor	Minor	Minor	Negligible	Negligible	
Very low	Minor	Negligible	Negligible	Negligible	Negligible	

#### Table 11.4 Impact significance definitions

Impact significance (level)	Definition
Major	Very large or large change in receptor condition (adverse or beneficial), which are likely to be key factors in the decision-making process because they contribute to achieving international, national or regional objectives, or could result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate change in receptor condition (adverse or beneficial), which are likely to be important considerations in the decision-making process because they contribute to achieving local objectives or could result in exceedance of statutory objectives and / or breaches of legislation.
Minor	Small change in receptor condition (adverse or beneficial), which may be important but are unlikely to be important considerations in the decision-making process.
Negligible	Very small changes in receptor condition (adverse or beneficial), which may be raised as local issues but are unlikely to be important in the decision-making process.
No change	No or imperceptible effects, within normal variations or within the margins of forecasting error.

For the purposes of EIA, 'major' and 'moderate' impacts are generally deemed to be significant (in EIA terms). In addition, whilst minor impacts are not significant in their own right, it is important to distinguish these from other non-significant (negligible) impacts as they may contribute to significant impacts cumulatively or through interactions between heritage assets or elements of the historic environment (historic landscape / seascape).

Where uncertainty occurs, a precautionary approach has been taken to ensure that impacts are not under assessed. Where the extent of harm is uncertain, either because an asset is not fully understood (i.e. if further investigation is required to establish the significance of an asset) or the magnitude of the impact is unclear (i.e. because the design is not yet finalised), the precautionary approach is to assume the potential for major (substantial) harm.

#### A11.1.3 Approach to setting assessment

In order to undertake the setting assessment, standard industry guidance set out in Cadw (2017) and Historic England (2017) has been adopted. The guidance set out in these documents provides a staged process for assessing the impact of proposed schemes on the setting of heritage assets, which comprises:

- Step 1: Identifying which heritage assets and their settings are affected.
- Step 2: Assessing the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated.
- Step 3: Assessing the effects of the proposed scheme, whether beneficial or harmful, on that significance or on the ability to appreciate it.
- Step 4: Maximising enhancement and minimising harm.
- Step 5: Making and documenting decisions and monitoring outcomes.

The results of Steps 1 and 2 are set out as part of the baseline in **Section A11.2.5** with the assessment (Step 3) set out in **Section A11.3.4** for construction phase effects and **Section A11.4.2** for operational phase effects.

### A11.2 Existing environment

#### A11.2.1 Prehistory

During the last Ice Age, the Falkland Islands may have been connected to mainland South America. Although the Falkland Islands were not covered by ice during the last glaciation, they have been subject to a periglacial climate which has limited the potential for human settlement.

It is widely accepted that the Falkland Islands had no indigenous population prior to the 18th century, although some have suggested the potential for earlier habitation, with evidence of burning covering approximately 1,000 years from around 5,080 years before present (BP) at Sapper Hill (Buckland and Edwards, 1998) and more recent discoveries of arrowheads in Lafonia and a wooden canoe indicating that Yaghan people of Tierra del Fuego may have made the journey to the islands (Falkland Islands Company, 2017).

A programme of ground investigation has been undertaken both within Stanley Harbour and on the hinterland within the footprint of the proposed scheme (the detail of which can be found within **Section A8.1** and **A16.1**). The logs from boreholes and trial pits excavated as part of the ground investigation have been subject to archaeological review to determine the presence of any deposits of geoarchaeological and palaeoenvironmental potential.

The logs from a number of the boreholes drilled on the hinterland reported the presence of peat. Peat, and other sub-surface deposits with organic content, can be key palaeoenvironmental indicators, relevant to the assessment of prehistoric archaeological potential.

The peat in the boreholes on land was recorded near the top of the sequence, directly underneath the topsoil. The Falkland Islands have the highest proportion of land cover of peat in any of the UK overseas territories (IUCN, 2015), with peat being the primary fuel source used in the Islands for many years. During the late 1800s, two peat slips occurred within the Falklands causing destruction, cutting the settlement in two, with the peat ultimately spilling into the sea (Macro Press, 2021). As such, the peat observed in landside boreholes is not considered to represent an *in situ* indicator of prehistoric potential at this location.

In some of the hinterland boreholes the peat overlies marine clay which in turn overlies Solifluction or raised beach deposits with peat extending to below the high tide level in places. These Solifluction deposits are described as Pleistocene in date and as pale grey unsorted stony sandy silty clays (Diamictons) and stony sandy silts, often contain subangular quartzite boulders (**Ref. 12**). It is also noted that these deposits underlie the soil in most parts of the Stanley area and that the Solifluction deposits can extend below sea-level. The superficial deposits identified in the boreholes, therefore, indicate no evidence of *in situ* deposits of geoarchaeological or palaeoenvironmental interest.

Similarly, the marine boreholes contain largely marine clays overlying sand and gravels, very stiff clay or bedrock formations which are not of geoarchaeological interest. Although upper deposits of 'organic' silts and marine clays are reported in several of the borehole logs, these are considered to be of recent origin. The harbour receives raw sewage which provides a likely origin for this organic content. There is no evidence of preserved prehistoric organic remains in the borehole logs. One borehole, BHO16A, does report evidence of roots although this is reported within a stiff light grey sandy clay deposit, which in itself would not be considered of geoarchaeological interest,

Additionally, consultation with PWD identified that a possible tree fossil / preserved wood was found during excavation undertaken for the Tussac House development, located approximately 500m to the west of the proposed scheme. This was recovered from a peaty deposit at a depth of approximately 2m below ground level. As such, the remains could have been carried here from a different location during one of the peat slips during the late 1800s discussed above. However, it is also possible that the find originated from the Tussac House site. This does not necessarily signify archaeological potential but signifies a potential prehistoric landscape.

### A11.2.2 History of the Falkland Islands

The first documentary reference of the Falkland Islands is from 1552 when the English explorer John Davis reported being blown by a storm into 'certaine Isles never before discovered' (Falkland Islands Museum and National Trust, 2012). The first recorded landing on the Islands, however, was not until the English sea captain John Strong set ashore (1690) and named the passage between the two islands 'Falkland's Sound', after the English peer Lord Falkland, whose name later became attached to the island group.

The first settlements were established at Port Louis in East Falkland in 1764 following the British conquest of French Canada and the arrival of settlers from Nova Scotia and Port Egmont in 1766, after Commodore Byron Saunders landed at Saunders Island, north of West Falkland, in 1765 and claimed the isles for the crown of Great Britain (Falkland Islands Museum and National Trust, 2012). In 1767, the French sold Port Louis to Spain after which followed a period of relative instability, both Spain and Britain having claimed sovereignty over the Islands. Ultimately, however, economic and political concerns in Europe resulted in both the British and Spanish garrisons leaving the islands to the fishermen engaged in the lucrative whaling and sealing trade.

In 1820, a Buenos Aires privateering ship, captained by the American David Jewett, landed at Port Louis and Jewett claimed the islands for the United Provinces (of Buenos Aires) (Falkland Islands Museum and National Trust, 2012). In 1829, the French Huguenot Louis Vernet was appointed Commandant of the settlement by the Buenos Aires government, although following disputes with the Americans over sealing and whaling rights, the naval frigate USS Lexington was dispatched to St Louis in 1831 and Vernet's defences were dismantled, and most of the European settlers removed. In 1832, the Argentine government sent a garrison to Port Louis, but by 1833 Captain Onslow of HMS Clio was sent to reassert British authority in the islands and the Argentine naval schooner was instructed to leave, which they did peacefully, with the majority of Vernot's settlers choosing to remain under the British flag. However, the British troops left without leaving formal government and Vernet sent his agent to the Islands. His agent and his men were murdered by a group led by the Antoni Rivero, one of the gauchos brought from Argentina by Louis Vernet to work at Port Louis, and Britain once again sent a force to restore order and arrest the men.

The Islands were subsequently administered by a succession of navel lieutenants reporting to the Admiralty, until, in 1841, a formal government was established at Port Louis under Richard Moody (Falkland Islands Museum and National Trust, 2012). In 1843 work began on a settlement at Stanley, with the seat of government was moved to Port Stanley in 1845. In 1849, 30 married Chelsea Pensioners were moved there to help defend and establish the settlement. Many of the pack houses they were sent with still survive. A lighthouse at Port Stanley was erected in 1854, assembled from cast iron plates made in England, and Stanley grew steadily throughout the second half of the 19th century, primarily due to the Island's location on one of the world's main shipping routes from Australia and New Zealand or from the west coast of the Americas, around Cape Horn and on towards Europe and the American east coast. As a port of refuge, the ship repair trade flourished at Port Stanley and in 1866, the entire land area of West Falkland was opened up for farming.

In the early 20th century, with the advent of iron hulled ships and steam powered vessels, the requirement for ship repairs was reduced and in 1914, with the opening of the Panama Canal, much of the sea traffic also fell away. During the two World Wars, the Falkland Islands played a minor role as a military base aiding control of the South Atlantic. During the Battle of Falkland Islands in 1914, the German cruiser squadron of Admiral von Spee was destroyed by British battle cruisers under the command of Admiral Sturdee within sight of Stanley. During World War II, battered British ships from the Battle of the River Plate were repaired at Port Stanley.

Whalers and sealers continued to hunt in Falkland Islands water and ships of the Falkland Islands Company (FIC), sailing from Port Stanley to Montevideo, allowed for the continued export of wool and movement of passengers. At its peak in 1964, the FIC owned almost half of the Islands' farmland. Ultimately, however, the whaling industry became centred on South Georgia and attempts to introduce economic diversification mostly failed, with wool export effectively operating as a monoculture on the Islands.

The 1960s and 70s were years of deepening depression for Islanders, with little meaningful investment from the British government to make the Islands more self-sufficient. In 1982, the Argentinian government invaded the

Islands, which were occupied for 74 days before troops surrendered to British forces on 14 June 1982. At the site of the proposed remediation area (**Figure 4.1**), features have been identified which represent the remains of military bunkers / fox holes with possible short tunnels, although the full extent of these is unclear.

Today the Islands are economically self-sufficient and a self-governing British Overseas Territory.

## A11.2.3 Maritime heritage assets and aviation

There are a number of known shipwrecks in Falkland Island waters and three ships sunk in the Falklands War are designated as protected places under Section 4 of the Protection of Wrecks Ordinance 1977. These are *HMS Ardent, HMS Coventry,* and *HMS Antelope,* however, all of these are located over 30km from the proposed scheme footprint. Additionally, three wrecks are protected under the Protection of Military Remains Act 1986. These are *Atlantic Conveyor, HMS Sheffield* and *RFA Sir Galahad.* None of these are located within Stanley Harbour.

There are a total of 24 wrecks located throughout Stanley Harbour, some of which have surviving extant remains. These have been identified through the United Kingdom Hydrographic Office (UKHO) and a number of documentary sources. The wrecks are summarised in **Appendix 9** and are shown on **Figure 11.1**.

Of the 24 wrecks identified within Stanley Harbour, 14 are designated wrecks under the Stanley Town Plan 2015-2030. As shown on **Figure 11.1**, the closest of these wrecks to FIPASS is the *Afterglow*, located approximately 240m south-west of FIPASS. Of the remaining wrecks, the *Lady Elizabeth* represents the best preserved being largely intact; this is located approximately 1.5km north-east of FIPASS

As wrecks within Stanley Harbour are relatively well recorded, the potential for undiscovered wrecks to be present is considered to be low. However, given the long history of maritime activities in Stanley Harbour, there is also the potential for wreck-related material, and finds which may have been lost overboard, for example, within the soft silts and sediments of the seabed within the footprint of the proposed scheme.

Similarly, there may also be potential for aircraft-related archaeological material and ordnance, particularly associated with World War II and with the Falklands War. Due to the number of aircraft lost during the Falklands War, there is some potential for such remains to be present within Stanley Harbour, however, the potential for such remains to be present within the footprint of the proposed scheme is considered to be low as there are no recorded aviation crash sites in the area. Additionally, a UXO Desk Study and Risk Assessment was undertaken by ZeticaUXO in September 2020 (**Ref. 8**). This concluded that the proposed scheme has a low UXO risk as:

- no records of bombing or military activity relating to WWI, WWII or the Falkland's War were found;
- the proposed scheme boundary comprised open water during the Falklands War; and,
- no records of any military activity was identified within the proposed scheme boundary relating to post-Falklands conflict.

## A11.2.4 Terrestrial heritage assets and buried archaeology

### A11.2.4.1 Known terrestrial heritage assets

Key terrestrial heritage assets in the Falkland Islands include a number of buildings and structures designated as being of architectural or historic interest. Forty-three such buildings have been identified under the Stanley Town Plan 2015-2030 as listed buildings. The majority of these are located within the Stanley Conservation Area, located approximately 1.5km south-west of FIPASS, shown on the Policies and Proposals Plan of the Stanley Town Plan 2015-2030 and **Figure 11.1**. These are listed in **Appendix 9**.

As shown on **Figure 11.1**, the nearest of these listed buildings to the proposed scheme footprint is Cemetery Cottage, located approximately 1.5km to the south-west.



	Key		
		Proposed se footprint	cheme
		Construction site layout	n phase
	•	Listed build	ing
	⊾	Wreck	
	•	Non design heritage ass	ated set
		Conservatio	on area
Yorke			
Bay			
Ź _∠Plym			
Whalebone Cove SV Lady Elizabeth	-		
	P03 01.12.21		GC GSP SR
Golden Boxer Bridge Chance and	P02 03.06.21	FIRST ISSUE	FC GSP SR
Gentoo	CLIENT		BICHNAPP
			ham
			nuttall
Airport Road	PESIRE THE	RIGHT	
	PROJECT	New Port Facility	/ at
3		the Falkland Isla	nds
	TILE		
	A	rchaeology and He	eritage
Rookery	<u> </u>	Marlborough House, M Newcastle	Aarlborough Crescent upon Tyne, NE1 4EE
	Tel +44(0)191 2111300 Email: info.newcastle@rhdhv.com Website: www.royalhaskoningdhv.com HaskoningDHV		
	DRAWN	ancing Society Together	APPROVED
	FC DATE 01.12.21	GSP SCALE 1:20.000	SR REF.
lerived from Falklands Town Plan lap (and) contributors, CC-BY-SA	FIGURE No.	11.1	SUITABILITY REVISION S2 P03

In addition to the listed buildings reported above, there are a number of memorials within Stanley that are afforded protection. In addition to these, a number of assets are located throughout Stanley which are deemed to be of heritage importance by the Falkland Islands Museum and National Trust but are not afforded any statutory protection. These are summarised in **Appendix 9**.

#### A11.2.4.2 Buried archaeology

In terms of buried archaeology, little archaeological work has been undertaken in the Stanley area and there are no known archaeological sites within the vicinity of the proposed scheme.

As discussed above in **Section A11.2.1**, the archaeological review of boreholes and trial pit logs from investigation on the hinterland undertaken to the inform the design of the proposed scheme did not identify any sediments of archaeological interest.

Based on the above, the potential for buried archaeological remains to be present within the terrestrial areas of the proposed scheme footprint is considered to be low.

### A11.2.5 Setting assessment

#### Step 1: Identification of affected assets

As discussed in **Section A11.2.4**, there are a large number of buildings and structures within Stanley designated as being of architectural or historic interest. Forty-three such buildings have been identified under the Stanley Town Plan 2015-2030 as listed buildings. The majority of these are located within the Stanley Conservation Area. As such, these buildings and conservation area will be assessed, as their setting may be affected by the construction of the proposed scheme. The buildings and Conservation Area will be assessed together as a whole.

Additionally, of the 24 wrecks within Stanley (**Section A11.2.3**), only the *SV Lady Elizabeth* will be further assessed due to her state of preservation and location. Of the remaining 23 wrecks, these are either submerged, do not survive as extant structures or are screened from the proposed scheme.

## Step 2: Assessing the degree to which these settings and views make a contribution to the significance of the heritage asset(s)

Following Step 1, the following assets have been carried through to Step 2:

- The SV Lady Elizabeth, and
- Stanley Conservation Area including contained listed buildings.

#### SV Lady Elizabeth

The *SV Lady Elizabeth* is recognised as an important asset by its inclusion as a designated wreck in the Stanley Town Plan 2015-2030. It comprises the remains of a Norwegian barque.

The *SV Lady Elizabeth* was built in 1879 by Thompson Robert & Sons and was owned in 1913 by Lars Lydersen, Sundet. While on voyage from Vancouver B.C. to Delagoa with lumber, she encountered a heavy storm at Cape Horn and just made it to Port Stanley on March 3rd, 1913 after four of her crew were washed overboard. Unfortunately, while entering Port Stanley, *Lady Elizabeth* was badly holed on Uranie Rock in Berkley Sound and was declared a total loss. *Lady Elizabeth* was sold and subsequently served as a coal hulk and a floating watchhouse for the Falkland Islands, before being condemned and beached on February 17th, 1936 at Whalebone Cove.

The *SV Lady Elizabeth* is located in Whalebone Cove, a coastal inlet, approximately 1.5km north east of the proposed scheme footprint. Views from the vessel are dominated by views across Stanley Harbour towards Stanley itself. The vessel stands as a dominant landmark within Stanley Harbour.

The significance of the *SV Lady Elizabeth* is largely derived from its physical remains and the information these hold, regarding the social, economic and political organisation at the time, and also the information pertaining to ship construction of the time.

Furthermore, the vessel's position as a dominant landmark within Stanley Harbour is a key contributor to its understanding, appreciation and significance, as this represents its final resting place after being condemned. Another key contributor to its setting is the relationship between the vessel and Stanley itself, having served as a coal hulk and watch house for the town. As such, the setting of the *SV Lady Elizabeth* is considered to be a key contributor to the significance of the *SV Lady Elizabeth*.

#### Stanley Conservation Area

The Stanley Conservation Area, and the listed buildings within it, are recognised as important assets by their inclusion in the Stanley Town Plan 2015-2030. The Conservation Area contains traditional Falkland buildings which are unique and help form the distinctive character of the built environment of the Falkland Islands.

In 1843 work began on a settlement at Stanley, with the seat of government moved to Port Stanley in 1845. In 1849, 30 married Chelsea Pensioners were moved there to help defend and establish the settlement. Many of these buildings still survive.

The significance of these buildings, and therefore the Conservation Area is largely derived from the architectural and historical information they contain about the social, economic and political organisation of Stanley and the Falklands Islands between the 19th and 20th centuries. The setting of these buildings and the Conservation Area also contributes to their significance.

One of the key relationships that contributes to the setting of the Conservation Area and the listed buildings is between the listed buildings themselves as this provides information and appreciation of the historic development of Stanley as the economic and political centre of the Falklands. Additionally, the relationship between the listed buildings and the Conservation Area and Stanley Harbour are important to the appreciation of these assets as Stanley developed as a port town and continues to do so today. As such, the setting of these assets is considered to be a key contributor to their setting.

The proposed scheme is located within the setting of the Stanley Conservation Area and the listed buildings within it; however, the FIPASS facility is also currently located within their setting. Additionally, within The Stanley Town Plan, the proposed scheme is located within Zone 6. This 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.*" As the nearest residential area is approximately 500m west of the proposed scheme footprint, and the nearest listed building and Conservation Area are located approximately 1.5km west, it can be assumed that Zone 6, and therefore the proposed scheme is sufficiently far from the Stanley Town Conservation Area and listed buildings to not be detrimental. As the proposed scheme will generally be located within the same area as the FIPASS facility, the construction of the proposed scheme is considered to result in a very low magnitude of effect.

The assessment of effects upon the settings of these heritage assets (Stage 3) is set out in **Section 11.3.4** for construction phase effects and **Section 11.4.2** for operational phase effects.

#### A11.2.6 Future evolution of the baseline in the absence of the proposed scheme

In the absence of the proposed scheme, there is no reason to believe that the archaeological and cultural heritage value within and adjacent to Stanley Harbour is likely to materially change from the present-day conditions.

## A11.3 Potential impacts during construction

### A11.3.1 Direct (physical) impacts to known heritage assets

As discussed in **Section A11.2**, there are no known prehistoric, maritime, aviation or buried terrestrial heritage assets within the footprint of the proposed scheme. As such, **no impacts** will occur.

#### A11.3.1.1 Mitigation and residual impact

No mitigation measures are required. There would be **no residual impact**.

### A11.3.2 Direct (physical) impacts to potential heritage assets

Based on the information in **Section A11.2**, the potential for previously undiscovered heritage assets to be present within the proposed scheme footprint is considered to be low.

In terms of prehistory, the archaeology of any indigenous population prior to the 18th century is poorly understood. No sediments indicative of Prehistoric archaeological potential were identified during the acquisition of boreholes and no archaeological remains from any period have been identified within the proposed scheme footprint or the surrounding vicinity.

Wrecks are well recorded throughout Stanley, with a total of 24 recorded, and based on this high level of recording, previously unknown, intact *in situ* wrecks are not anticipated to be present within the footprint of the proposed scheme. No aviation remains have been recorded within the footprint of the proposed scheme or the surrounding vicinity, and the UXO assessment determined there are no records of military activity within the proposed scheme footprint.

Should *in situ* buried or submerged archaeological sites be present within the footprint then, although the specific heritage significance is currently unknown, a precautionary approach would be to assume that such sites would potentially be of national importance and high heritage significance. However, the potential for the presence of *in situ* archaeological sites is anticipated to be low. Furthermore, the potential for direct impacts to any buried or submerged archaeological material which may be present within the footprint is further limited by the construction of the proposed scheme partly within the footprint of the existing FIPASS and the limited nature of landside ground works. It is therefore considered most likely that any archaeological material encountered during works would be limited to isolated finds. Although removed from their original contexts, such finds still have archaeological value, with potential to contribute to regional importance, educational interest or cultural appreciation. As such, isolated finds are considered to be of medium heritage significance.

If present, direct physical impacts to archaeological remains may occur during excavations required to construct the access road (and drainage system), slipway and access track, as well as construction of the causeway and the quay. Any excavations required to establish the site offices, accommodation facilities, stockpiling areas and concrete batching plant, as well as the removal of surficial silt on the bed of the harbour could also result in direct physical impacts.

The removal of up to 2m of surficial silt on the bed of the harbour within the footprint of the proposed quay could result in the removal of any undiscovered remains which lie within this deposit, anticipated to be limited to isolated finds rather than *in situ* archaeological sites. This removal of isolated finds from the seabed would represent only a minor loss in terms of removal from context and is therefore assessed to of medium magnitude of effect. Therefore, this is predicted to result in a **minor adverse** impact.

The construction of the access road and drainage swales (and pipes) will involve localised excavation and the building up of material to create a level road. In the areas where material will be removed, excavation will be limited in depth and extent which, considered against the low potential for *in situ* buried archaeological remains, is unlikely to result

in a significant effect. As a worst case the magnitude of effect is assessed as being of potentially medium magnitude, and a **minor adverse** impact. In areas where material will be built up, there will be no change and **no impact**.

In terms of the military bunkers / fox holes with short tunnels, these will be avoided by the geotubes and areas that require hardstanding. The pipework required on the surface immediately north of the geotubes will be carefully cited to minimise damage / disruption to the bunkers / fox holes. As such, there will be no impact to these.

In terms of the establishment of site offices, accommodation and laydown areas, these will be located in areas where hardstanding is already present (and therefore there would be no pathway for direct physical impact to potential archaeological remains). However, vegetation will need to be locally removed from some areas in order to create hardstanding. Where only vegetation is to be removed, there will be **no impact** as any archaeological remains (if present) would be further below the ground level. However, if excavations into the underlying deposits are required, this could impact buried archaeological remains (if present), which could, as a worst case, be a medium magnitude of effect and a **minor adverse** impact.

The construction of the causeway will involve the tipping and building up of quarried material at pre-defined locations. As no below ground impacts will occur and no material will be removed as part of this process, potential archaeological remains will remain *in situ*. As such, there will be **no impact**.

The construction of the quay will involve the installation of a combi-wall to support the mass fill structure. A sheet piled anchor wall will also be required, as well as rock infill. Although the installation of the piles will have a direct impact upon any archaeological remains present, the low potential for such remains, anticipated to be limited to isolated finds, is unlikely to result in a significant effect. As a worst case the magnitude of effect is assessed as being of potentially medium magnitude, and a **minor adverse** impact. In the areas where mass fill will occur, no material will be removed, so potential archaeological remains will remain *in situ*, therefore there will be **no impact**.

### A11.3.2.1 Mitigation and residual impact

In order to account for any unexpected discoveries which may occur during construction, it is recommended that an archaeological reporting protocol be adopted to ensure that any new discoveries are quickly and efficiently reported and addressed. Should unexpected discoveries of *in situ* buried/submerged archaeological material be encountered and reported through the protocol, additional mitigation to record the remains would be developed on a case by case basis. With the adoption of this mitigation, the residual impact is predicted to be **negligible**.

# A11.3.3 Indirect (physical) impacts associated with changes to hydrodynamic process and sedimentation

The potential effects associated with changes to coastal processes during construction are assessed in **Section A7.3**. It is concluded that, since the baseline currents in the harbour are so low and the footprint of the structure will be so localised, there will be only a negligible effect upon hydrodynamics, sediment transport and morphology. Similarly, sediment disturbance and dispersion associated with the placement of fill material and positioning of rock armour, and increased turbidity during the removal of surficial silts from the harbour bed or sludge from the FIPASS barges, is expected to be minimal. As a result, **no indirect (physical) impact** to heritage assets is predicted.

#### A11.3.3.1 Mitigation and residual impact

No mitigation measures are required. There would be **no residual impact**.

# A11.3.4 Indirect (non-physical) impacts to the historic character and setting of heritage assets

The settings assessment presented below has been undertaken in accordance with the approach set out in **Section A11.1.3**. Steps 1 and 2 of the setting assessment are presented in **Section A11.2.5**.

#### Step 3: Assessing the effects of the proposed scheme

As discussed above, the setting of the Stanley Conservation Area, listed buildings and *SV Lady Elizabeth* is considered to be key a contributor to their significance. Impacts during the construction phase will arise from construction related activities outlined in **Section A4.1**.

In terms of the *SV Lady Elizabeth*, its significance has been assessed as high due to its inclusion as a designated wreck in the Stanley Town Plan 2015-2030, as it comprises the well preserved remains of a 19<sup>th</sup> century Norwegian barque. While the setting of the vessel has been determined to be a key contributor to its significance and the proposed scheme is considered to lie within its setting, construction related activities which could affect its setting will only be temporary and, therefore, reversible. This corresponds to a low magnitude of effect as outlined in **Table 11.2**. Ultimately, a **minor adverse** impact is predicted.

In terms of the Stanley Conservation Area and listed buildings, their significance has been assessed as high due their inclusion as listed buildings in the Stanley Town Plan 2015-2030 for their historic and architectural importance. While the setting of these assets has been determined to be a key contributor to their significance, and the proposed scheme lies within the setting, construction related activities will likely be imperceivable due to the distance between the assets and the proposed scheme. Similarly, construction activities will be temporary and therefore reversible. This corresponds to a low magnitude of effects and overall a **minor adverse** impact.

## A11.3.4.1 Mitigation and residual impact (Steps 4 and 5: maximise enhancement and minimise harm and make and document decisions and monitor outcomes)

#### Step 4: Maximising enhancement and minimising harm

No mitigation measures are required. In order to minimise the impact as far as practicable, 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. The residual impact will be of **minor adverse** significance.

Step 5 (making and documenting decisions and monitoring outcomes) is represented by this EIS.

### A11.4 Potential impacts during operation

# A11.4.1 Indirect (physical) impacts associated with changes to hydrodynamic process and sedimentation

A change in the hydrodynamic and sedimentary regime during the operational phase of the proposed scheme has potential to indirectly impact heritage assets.

As reported in **Section A7.4**, the proposed scheme is predicted to result in a (intended) reduction in waves and tidal currents in the lee of the proposed quay and causeway. The effects are predicted to be highly localised to the footprint of the proposed scheme footprint, with no effect further afield within Stanley Harbour. In addition, as the baseline wave climate is modest and the baseline tidal currents are so low, there are unlikely to be considerable quantities of suspended sediment available for deposition, and therefore a significant change in deposition rates as a result of the proposed scheme is not predicted. Based on the above, an impact of **negligible** significance is predicted.

#### A11.4.1.1 Mitigation and residual impact

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

# A11.4.2 Indirect (non-physical) impacts to the historic character and setting of heritage assets

The settings assessment presented below has been undertaken in accordance with the approach set out in **Section A11.1.3**. Steps 1 and 2 of the setting assessment are presented in **Section A11.2.5**.

#### Step 3: Assessing the effects of the proposed scheme

Whilst the proposed scheme is considered to lie within the setting of the *SV Lady Elizabeth* and the Stanley Conservation Area, the magnitude of effect has been assessed as very low as the proposed scheme will replace FIPASS, and will be partly located in the footprint of FIPASS. As such, there will be no material change to the setting of either asset from the presence of the new quay and causeway. The overall impact to the setting of these heritage assets is therefore predicted to be **negligible**.

The new quay will have a higher average lux level compared to what is on FIPASS so is likely to be more noticeable from Stanley compared to FIPASS. However, this is not anticipated to result in a noticeable change to the setting of the listed buildings or the Conservation Area. As stated in the Town Plan, 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." As a result, the impact is predicted to be **negligible**.

# A11.4.2.1 Mitigation and residual impact (Steps 4 & 5: maximise enhancement and minimise harm and make and document decisions and monitor outcomes)

#### Step 4: Maximising enhancement and minimising harm.

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

Step 5 (making and documenting decisions and monitoring outcomes) is represented by this EIS.