

ST HELENA AIRPORT PROJECT

Planning Statement: Request for Amendment to Development Permission for Airport Project Works in Rupert's

Permanent Wharf
Sea Rescue Facility
Rupert's Fuel Pipeline

14 October 2013



Aerial view of Rupert's courtesy of HMS Richmond, August 2013

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Acronyms & Abbreviations

ADAO	Airport Development Area Order
BFI	Bulk Fuel Installation
DBO	Design, Build and Operate
DFID	Department for International Development
EIA	Environmental Impact Assessment
ES	Environmental Statement
LDCP	Land Development Control Plan
PMU	Project Management Unit
SHG	St Helena Government
SMMEs	Small, Micro, and Medium-sized Enterprises

1. Introduction

Background

- 1.1 Consent was granted for development of a wharf in Rupert's in September 2008 as part of the development application for the Airport Project. Rupert's Wharf was then included as a provisional component under the Airport Project, pending further design and costing work. The Wharf therefore forms part of the existing contract with Basil Read.
- 1.2 Detailed design work has now been undertaken. This shows that a location to the south-west of Rupert's Bay offers a number of advantages to the location originally considered. Consent is therefore sought from Governor-in-Council to amend the original development consent granted for the Airport Project to reflect the alternative design.

Purpose of the Planning Statement

- 1.3 This Planning Statement provides background information to aid Governor-in-Council's consideration of a request to amend the development consent granted for the Airport Project in September 2008. Amendment is requested in respect of the following components:
 - The Permanent Wharf in Rupert's
 - The Sea Rescue Facility
 - The fuel pipeline from the Permanent Wharf to the Permanent Bulk Fuel Installation (BFI), hereafter termed 'Rupert's Fuel Pipeline'.
- 1.4 Each of these components and associated works form part of the Airport Project. Basil Read, Contractor for the Airport Project, has put forward alternative designs as per the terms of the Design, Build and Operate (DBO) Contract for the Airport Project (see below).
- 1.5 The alternative designs have been reviewed by the Project Management Unit (PMU) and further discussions have taken place between the Airport Project Teams in Basil Read, the PMU, the St Helena Government (SHG) and the Department for International Development (DFID). The Airport Project Teams from each of these organisations recommend approval of the alternative designs and have endorsed submission of the Planning Statement and accompanying documentation.
- 1.6 The Planning Statement represents summary information. The full technical proposal has not been presented here. The Access Office would be happy to provide the full detail, should this be required.

The Design, Build and Operate Contract

- 1.7 The original consent granted for the Airport Project in September 2008 was based on Reference Designs prepared in 2007/8. The Contract signed with

Basil Read in November 2011 is a DBO Contract. This permits Basil Read to develop and submit alternative designs that meet the contract specifications.

- 1.8 The designs presented in the Planning Statement are preliminary. These designs are based on technical, environmental and social appraisal as per the conditions of the DBO Contract. Basil Read is currently at final design stage, with final designs expected to be completed in December 2013. These designs will also be subject to review as per the terms of the DBO Contract.
- 1.9 The Planning Statement brings together the different appraisals carried out for Rupert's Wharf. Where further detail has become available through the preparation of the final designs, this is presented in the Planning Statement.

Legislative Context & Planning Process

- 1.10 The Airport Development Ordinance (2006) makes provisions to facilitate the design, construction and operation of an airport on St Helena. In particular, it provides that anything done in a designated 'Airport Development Area' with the consent of the Governor in Council is to be treated as done with development permission under the Land Planning and Development Control Ordinance. In effect, this means that the Governor-in-Council grants 'consent' (rather than the Land Development Control Authority granting 'Development Permission') for anything to do with the Airport Project¹.
- 1.11 The Governor in Council granted consent for the Airport Project in September 2008. The Development Consent states "*if the Contractor's Designs vary significantly from the Reference Designs separate Development Permission must be obtained*" (extract from memo from Clerk of Councils, 17 September 2008). The reference to 'separate Development Permission' must, read in the context of the Airport Development Ordinance, mean a separate consent by the Governor-in-Council.
- 1.12 The Land Development Control Plan (LDCP) states "*development permission will be granted for all elements of infrastructure required in connection with construction and operation of the St Helena Airport including variations or additions to any element covered under the Airport Development Ordinance 2006 and lying outside the Airport Development Area*" (LDCP, Policy AP1, pg. 17). [This proposal does not in fact extend outside the Airport Development Area.]

Request to amend the Development Consent for the Airport Project

- 1.13 Consent is sought from Governor-in-Council to amend the original development consent granted for the Airport Project to reflect the alternative designs for Rupert's Wharf, the Sea Rescue Facility and Rupert's Fuel

¹ The approval granted by Governor-in-Council in September 2008 has nevertheless been informally termed the 'Airport Project Development Permission'. In light of this informal title, it should be noted that some of the documents referred to in the Planning Statement use the terms 'development permission' and 'development consent' interchangeably.

Pipeline.

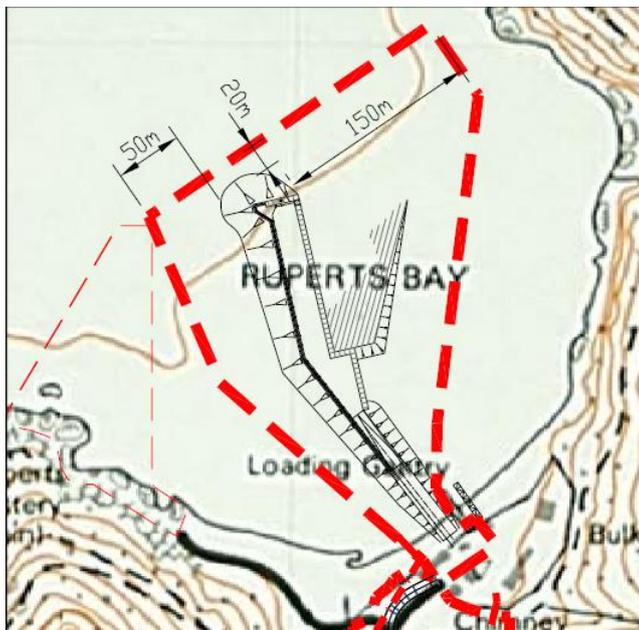
- 1.14 This request is made under the provisions of Section 8 of the Airport Development Ordinance and is consistent with the Airport DBO Contract and the LDCP.

2. Technical Considerations

The Reference Designs

- 2.1 The development consent granted in September 2008 was based on reference designs, which were drawn up in 2007/8. The earlier drawings are available at <http://www.sainthelenaaccess.com/application/documents/Application-Drawings/>. The Access Office would be happy to make available hard copies, if so required.
- 2.2 The original Reference Design for the Permanent Wharf (2007) located the wharf in the centre of Rupert's Bay, starting near the existing fuel gantry. This is shown in the drawing below. However, the original Reference Design was only a concept that was included at tender stage to enable a provisional sum to be included in the DBO Contract, pending detailed designs and costings.

Figure 1: Reference Design for Rupert's Wharf²



- 2.3 The original Development Application in 2008 refers to a sea rescue lifeboat based at Jamestown or another agreed location³. At the time, Rupert's Wharf was included under the Airport Project as a provisional component, pending final design and costing and it was not yet confirmed if construction would take place. It was therefore proposed that the Sea Rescue Facility would be located in Jamestown so that the cranes located on the Jamestown Wharf could be used as an alternative means of launching the rescue boats. However, no designs were fixed at that time, pending further discussion around Rupert's Wharf.

² Source: Drawing no. 5098141 - CI - 01 - 1161 rev. A

³ Airport Project Planning Statement (2008), Atkins, pg. 4-7

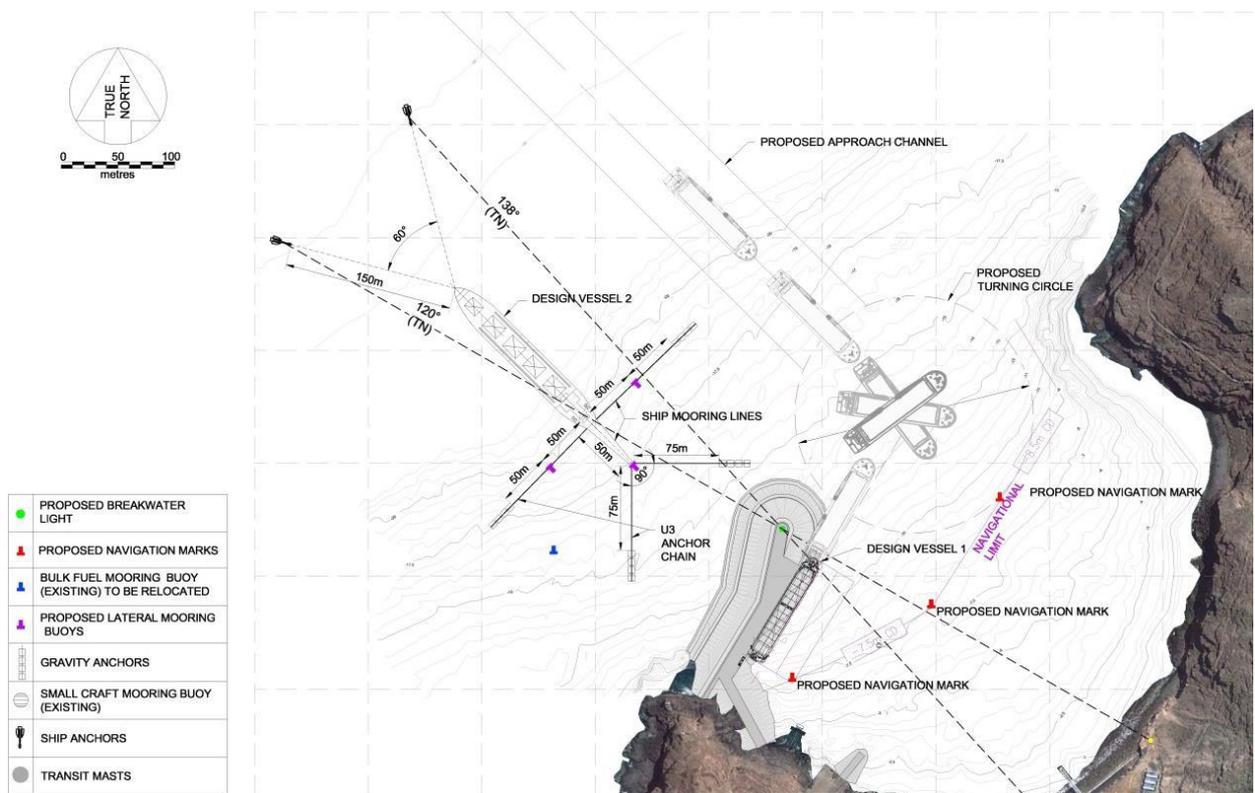
2.4 Originally, the arrangements for the transfer of fuel from ship to shore and from the shore to the Permanent BFI in Upper Rupert's were planned around the location of the Permanent Wharf shown in the Reference Design.

The Revised Designs

Overview

2.5 Following various design exercises, including computer modelling, Basil Read's design engineers have determined that in order to optimise the wharf design, the wharf should be located at the south-west point of Rupert's Bay. This is shown below:

Figure 2: Revised Design for Rupert's Wharf⁴



2.6 The alternative design represents an optimised design solution for provision of sheltered berthing in Rupert's Bay as required within the Contract specifications.

2.7 With the proposal to construct the Permanent Wharf in Rupert's, cargo handling facilities (including the cranes) will be transferred to Rupert's, freeing up the wharf in Jamestown for passenger handling and tourism related development. It is therefore logical for the Sea Rescue Facility to be located

⁴ Source: Rupert's Bay Permanent Wharf – Phase 2 Preliminary Design Report, Basil Read, August 2013

in Rupert's to take advantage of the sheltered water, slipway and cranes for launching. This has necessitated an alternative location for the Sea Rescue Facility to that proposed in the original Development Application for the Airport Project.

- 2.8 Similarly, the arrangements for landing fuel at Rupert's are based around the Wharf. The proposed change in location of the Wharf therefore also necessitates an alternative design for the Rupert's Fuel Pipeline.

Rupert's Wharf

- 2.9 The Permanent Wharf will be constructed from the south-west corner of Rupert's Bay. The Wharf will be in a north-easterly direction across the Bay to provide sheltered water on its inside face. Basil Read's design engineers have undertaken computer modelling to assess the effects of the wind, current and waves. A vessel manoeuvring study will also be undertaken to ensure that the largest vessel will be able to arrive and leave.

- 2.10 The Wharf structure will comprise a rock breakwater protected with concrete armour units with precast concrete box units on its inside face to provide the flat quay for berthing vessels. 2D physical model testing of a section of the breakwater trunk has been undertaken and 3D physical model testing of the entire breakwater will also be undertaken.

- 2.11 The quay will be able to accommodate vessels up to the following size:

Table 1: Design Parameters for Rupert's Wharf

Parameter	Value
Deadweight	6,400 tonnes
Displacement	7,500 tonnes
Length overall	105 metres
Length between perpendiculars	100 metres
Beam	17 metres
Laden draft	5.5 metres

- 2.12 The Rupert's Bay Shipping Review Report (October 2012) reviewed available shipping operating in the South Atlantic off the coast of South and West Africa. This included examples of current operations, vessels used and a list of companies which have fleets meeting the design requirements which could service St Helena Island. The Report concluded that there are vessels available that could be accommodated at the Wharf and which could meet the requirements forecast for container transport to the island. This is discussed further in Section 4.2.3 of the Environmental Statement (see Appendix 3). A significant advantage of Rupert's Wharf is that it reduces the reliance on geared vessels: in future, it will be possible for the island to discharge cargo from gearless vessels within the design parameters in Figure 3 above, using the onshore cranes.

- 2.13 The quay will be provided with the following:
- passenger landing facility similar to Jamestown
 - fenders
 - bollards
 - ladders and mooring rings
 - ducts for power, lighting and communications
 - water pipe and Rupert's Fuel Pipeline
- 2.14 A boat ramp is required for launching of the sea rescue boats (see below). It is proposed that this be constructed as an extension to the existing partial ramp on the Shears jetty. This would then provide a facility that is available for public use. Fishermen will be able to come alongside the main wharf structure to land their catches.
- 2.15 To remain within the available funding, the roll on-roll off (ro-ro) ramp at the landward end of the Wharf has been deleted. Instead, Basil Read's temporary jetty will be retained for use by ro-ro vessels and this will form part of the overall Rupert's Wharf infrastructure.
- 2.16 The revised design for the Permanent Wharf represents the optimum design solution within the funding available. Overall, the average downtime is 17% for a typical year. If vessels stand off for up to 3 hours, the average downtime reduces from 17% to 13% and after 6 hours, the downtime reduces to 10%.

The Sea Rescue Facility

- 2.17 It is proposed that the Sea Rescue Facility is located within the perimeter of the Wharf, near to the existing BFI beach site. This will enable ease of access to the ramp and also to the cranes situated on the Wharf. Having alternative means of launching the rescue boats is one of the key benefits from relocating the Sea Rescue Facility from Jamestown (as proposed in 2008) to Rupert's.
- 2.18 The proposed location for the Sea Rescue Facility is shown on the drawing at Appendix 2.

Rupert's Fuel Pipeline

- 2.19 The fuel tankers will anchor offshore and discharge using a floating pipeline as at present. The Rupert's Fuel Pipeline will run along the sea wall at the back of the quay. The exact route of the Fuel Pipeline will be finalised during the detailed design, but is likely to follow the access road along the shore and pass behind Basil Read's temporary jetty and the Shears. The Pipeline would then follow the alignment of the road, passing through the lines and over the bridge. It is envisaged that it would continue to follow the alignment of the road up the valley before crossing the road and passing through the gap between Adrian Duncan's workshop and the Benjamin's walled piece of land. The Pipeline would then run along the side of the valley behind the properties

as at present. It would pass through a specially constructed service culvert under the airport access road and continue up the valley to the BFI.

- 2.20 Rupert's Fuel Pipeline is likely to be underground as it travels through lower Rupert's Valley from the Wharf to Haytown. The rest of the Fuel Pipeline will be above ground as at present. Further details on fuel offloading arrangements and the position of the pipeline along the Wharf itself are available within the Preliminary Design Report at Appendix 4. The arrangements will be confirmed at final design stage.
- 2.21 It is important to note that there will only be fuel in the pipelines during fuel pumping operations. In the short-medium term, it is expected that the fuel pipeline will be in use for a maximum of 6 days per annum (or during 2 calls of the fuel tanker per annum). Maintenance programmes will be put in place to ensure that the condition of the pipeline is maintained.
- 2.22 The pumping of aviation fuel will not pose any additional risk in comparison to the pumping of diesel or petrol. The flash point of aviation fuel is typically 40°C compared to 55-60°C for diesel and -40°C for petrol.

Additional Considerations

Construction

- 2.23 If consent is granted by Governor-in-Council to amend the development consent for the Airport Project to reflect the revised designs, work would start on the Permanent Wharf in early 2014.
- 2.24 Work must be carried out in a single season (between April and December) to avoid washout during the period of heavy seas. Work must also be closely aligned with the programme for wider Airport Project works.
- 2.25 In light of the timing constraints for construction, Basil Read has requested permission to work extended hours in Rupert's. Contract provisions have been made whereby the Resident Engineer may grant such permission on a case by case basis. Rupert's residents and businesses will be consulted prior to a decision being taken by the Resident Engineer. This is discussed further in Section 3 below.

Quarry Locations

- 2.26 The material for the Wharf construction will be sourced from the existing quarry within Rupert's and from excavation for the airport road. The existing quarry is shown as the lower quarry in the figure below. An additional quarry site has also been identified in Upper Rupert's (shown as the mid-Valley quarry in the ES Addendum). Both quarry sites and the airport road are within the ADA and have been subject to environmental assessment.

Figure 3: Project Area Showing Quarry Sites⁵



Roadworks

- 2.27 The road within the perimeter of the Permanent Wharf will be designed to withstand heavy traffic movements.
- 2.28 The road will obviously need to cross the bridge near the Argos premises in Rupert's. Structural assessments have confirmed that the bridge will be capable of supporting the increased volumes and weights of traffic forecast. However, given the potential increased use by heavy goods vehicles, it is proposed to widen the bridge. Rupert's Lines will not be affected by these works (see the ES Addendum at Appendix 3).

Rockfall

- 2.29 The ES Addendum includes a preliminary cliff stability assessment (see Appendix 3). This highlights potential risk of rockfall and proposes mitigation measures.
- 2.30 The report notes that this is a preliminary assessment carried out by visual means only and that the results are subjective. Therefore, specialist geotechnical input is currently being sourced to carry out a detailed assessment and advise on appropriate mitigation.
- 2.31 The Access Road to Rupert's Wharf will be constructed away from the base of the cliffs and then the Wharf itself will be constructed into the Bay. The population using Rupert's Wharf will be temporary (i.e. the Wharf will not

⁵ Source: Addendum to the Environmental Statement Relating to the Permanent Wharf in Rupert's Bay, St Helena Island, Basil Read, September 2013 (see Appendix 3)

result in personnel being permanently located there) and will transit through the area under the cliffs to reach the main structure of the Wharf. Therefore all cargo handling operations will not be underneath the cliffs as is the case in Jamestown.

Summary of the Advantages of the Revised Designs

2.32 The advantages and disadvantages of the Permanent Wharf Proposal in comparison to the Reference Design (2007) are listed below (not in any order of priority):

Table 2: Advantages and Disadvantages of the Permanent Wharf in Comparison to the Reference Design

Advantages of optimised layout and design	Disadvantages compared to the Reference Design
No need for dredging and disposal of dredge spoil because located in deeper water	Further from proposed Port Control area and bonded warehouses
Away from recreational area and beach and will only impact on access during ship calls	Construction will interfere with fishing spots on south side of bay and fishing operations
Will not affect the Boer Desalination Chimney	
Will not affect Rupert's Lines to the same extent as the Reference Design	The presence of Rupert's Lines will still pose a minor constraint to access but this can be readily mitigated
Refuelling operations will be further out to sea	May need cliff stabilisation measures
Lower operational costs (no maintenance dredging equipment required)	Increase in construction/capital costs due to depth of wharf
Affords greater protection from rollers and swells	
Increases availability and usage of quayside (days/annum)	
Allows more space for ship manoeuvring	
Allows more space for other sea users in the bay	

2.33 The advantages and disadvantages of the alternative design for the Sea Rescue Facility in comparison to the Reference Design (2007) are listed below (not in any order of priority):

Table 3: Advantages and Disadvantages of the Sea Rescue Facility in Comparison to the Reference Design

Advantages of optimised layout and design	Disadvantages compared to the Reference Design
All 3 rescue boats can be located together	Construction of the sea rescue facility will need to be carefully planned around the decommissioning of the existing BFI beach site: there are timing implications arising from this.
Two options for launch of the rescue boat – either via the ramp or through using the crane	
Not as constrained in terms of spacing as in Jamestown wharf	

- 2.34 The alternative design for the Rupert’s Fuel Pipeline is believed to be neutral: the revised location of the pipeline is as a result of the changed location of the Permanent Wharf. The new location is still within the ADAO and no additional impacts have been identified.

3. Environmental Considerations

Background

- 3.1 In considering the environmental implications of the Permanent Wharf Proposal, it must be recognised that the proposal is a design alternative to the Reference Design. The plans for Rupert's Wharf have been the subject of considerable environmental assessment and much of this earlier work remains relevant.
- 3.2 As the Sea Rescue Facility falls within the boundary of the Permanent Wharf, the environmental assessments carried out for the Permanent Wharf are relevant: no additional environmental considerations were identified in respect of the Sea Rescue Facility.
- 3.3 The ship to shore section of the Rupert's Fuel Pipeline also falls within the boundary of the Permanent Wharf. Again, the environmental assessments carried out for the Permanent Wharf are relevant: no additional environmental considerations were identified in respect of the fuel pipeline that would warrant additional investigation.
- 3.4 Overall, much of the earlier environmental assessment for Rupert's remains relevant. Reference should therefore be made to the Environmental Statement (ES) that formed part of the original Development Application for the Airport Project. The ES assessed the planned development in Rupert's Bay and put in place appropriate mitigation. In particular, reference should be made to:
- Appendix 7: Air Quality and Dust
 - Appendix 9: Terrestrial Ecology
 - Appendix 10: Landscape, Visual and Ecological Mitigation Plan
 - Appendix 11: Cultural Heritage
 - Appendix 12: Traffic and Footpaths
 - Appendix 13: Geology, Contaminated Land and Hydrogeology; and
 - Appendix 15: Surface Water Detailed Assessment

Addendum to the Environmental Statement

- 3.5 Basil Read has prepared an Environmental Impact Assessment (EIA) for the revised design for the Permanent Wharf. This forms an addendum to the St Helena Airport Project ES⁶ and is attached at Appendix 3.
- 3.6 As noted above, the Permanent Wharf needs to be considered in the context that it is a design alternative. The ES Addendum therefore compares the environmental impacts of the Reference Design (2007) and the Preliminary Design (2013).

⁶ See Addendum to the 2007 Environmental Statement: Rupert's Bay Permanent Wharf, September 2013

3.7 The key topics covered in the ES Addendum are:

- Planning context
- Land use
- Noise and vibration
- Air quality, dust and carbon emissions
- Terrestrial ecology and nature conservation
- Landscape and visual amenity
- Cultural heritage and archaeology
- Roads, traffic and footpaths
- Geology, contaminated land and hydrogeology
- Marine environment
- Surface water
- Waste management

3.8 The full assessment can be found at Chapter 6 of the ES Addendum (see Appendix 3); the methodology for the assessment is set out in Section 6.1. The key findings for construction phase and operations phase are summarised in the tables overleaf.

3.9 The ES Addendum needs to be considered in the context of the overall appraisal for the Permanent Wharf. The impact assessments are extracted directly from the ES Addendum and additional comments on technical and other aspects have been included alongside these assessments for ease of reference.

Additional Considerations

Marine Archaeology

3.10 The Environmental Statement for the Airport Project covers some marine archaeology aspects. Volume 4, Appendix 11.1 states:

Rupert's Bay has been the focus of maritime activity for several centuries, probably second only to Jamestown in its importance as a landing place. No wreck sites are recorded within the bay, but the potential for maritime archaeology has to be considered.

The only information on this subject comes from a marine survey of the bay that was undertaken in 2006, applying a combination of bathymetry, side-scan sonar and subbottom profiling (Tritan Surveys 2006). This survey identified various ropes or chains scattered on the seafloor within the bay, as well as showing scouring features and anchor drag marks that have left linear scars along the seafloor (Figure 14.1, Volume 3).

The same survey also identified a clump of low-relief, moderate reflectivity features, which could either be archaeological or a natural component of the sea-floor. In either case, these features occur in water depth greater than or

equal to 15m, and thus well outside the area which the proposed wharf will impact upon.

- 3.11 Basil Read explored this issue further in the context of the recent EIA for Rupert's Wharf. Although the new wharf position falls within the -15m contour, it was decided to verify the initial findings. This was done through the Marine Darwin project survey. In addition to marine life, observations of all man-made objects have to be recorded on the survey sheets used by the Darwin team. The Darwin team conducted three survey transects – two along the length of the wharf and one perpendicular to the wharf alignment. No man-made objects of significance were observed.
- 3.12 This finding was also confirmed by Basil Read divers who collected sediment samples from within the footprint of the wharf. This verifies the earlier conclusions from the ES.
- 3.13 It is believed that the work done to date is adequate and that the conclusions reached are sound. However, it is acknowledged that there are differing opinions on the most appropriate methods that should be used to identify marine archaeology. For this reason, SHG is also seeking expert advice as to international best practice. This will determine whether further work is needed to inform the final design stage, although at this point in time we do not believe this to be the case.

Convention on Marine Pollution (MARPOL)

- 3.14 The ES Addendum makes reference to requirements under the MARPOL Convention. There has been much discussion locally on whether or not St Helena is required to comply with MARPOL as the Convention has not been extended to St Helena.
- 3.15 Advice from the UK Departments for Environment, Food and Rural Affairs (DEFRA) and Transport (DfT) is as follows:

Membership of the Red Ensign Group cannot impose obligations where the Treaty in question has not been extended to St Helena.

"In terms of obligations under the Red Ensign Group (REG), the REG is comprised of the international shipping registries operated by the UK, the three Crown Dependencies (CD) and eight of the UK Overseas Territories (OT); and any vessel registered in the UK, a CD or a OT is a "British Ships" and is entitled to fly the British Merchant Shipping flag the 'Red Ensign'.

St Helena currently operates as Category 2 register under the Merchant Shipping (Categorisation of Registries of Relevant British Possessions) Order, and is limited to the registration of ships up to 150 gross tonnes.

- 3.16 In light of the above, it is still to be determined what parts of MARPOL St Helena would wish to comply with on a voluntary basis in line with

international best practice.

Sewerage

- 3.17 The ES Addendum notes that there may be a possible improvement to the water quality (in terms of coliform content) in the area of the swimming beach, as a result of the changes in current circulation from the proposed wharf construction.
- 3.18 However, it is also noted that the discharge of sewage within 50m of a public beach is not acceptable. This is an issue outwith the Rupert's Wharf development that will need to be considered in the context of wider development in Rupert's.

Heritage Features

- 3.19 As noted in Section 2 above, an advantage of the alternative design for Rupert's Wharf is in relation to heritage features in Rupert's. In comparison to the reference design, the alternative design will not impact on the desalination chimney and impacts on Rupert's Lines will be minimal and readily mitigated against (see the ES Addendum at Appendix 3).

Table 4: Summary of Impacts and Recommended Mitigation – Construction Period

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Large falling rocks may injure or kill people and damage equipment	Low Major adverse	<ul style="list-style-type: none"> • All measures assume that the hill and cliff faces are made safer by first loosening and removing potential dangerous rocks, boulders etc. Possible mitigation options include: <ul style="list-style-type: none"> ○ Cover lower slope with netting and provide catch fences above; ○ Cover hill and lower slope with netting or provide catch fences; ○ Selective use of ‘Gunnite’ on certain faces on all other areas over and above netting and catch fences – apply colouring to such surfaces to blend in. ○ Install ‘New Jersey’ barriers spaced slightly away from the rock face and fill with sand to absorb the impact of falling rocks. 	Low Minor adverse	<p>The sections on cliff stabilisation and rockfall protection within the ES Addendum are noted within the Addendum itself as ‘subjective’. A qualified opinion is being sought and surveys of the cliff will be undertaken in order to determine potential risk and the need for mitigation measures.</p> <p>It should be noted that unlike the Wharf in Jamestown, the bulk of the activity on Rupert’s Wharf will be on the breakwater, away from the cliff face. Whilst personnel will still have to transit the area under the cliff, the risk is much reduced as opposed to have personnel permanently in a potential rockfall area.</p> <p>This is discussed further in Section 2 above.</p>
Loose small rocks and stones may injure people and cause minor damage	Possible Moderate adverse	<ul style="list-style-type: none"> • As above. 	Low Minor adverse	See comments above.
Cliff stabilisation netting may affect terrestrial ecology	Possible Negligible adverse	<ul style="list-style-type: none"> • Commission an investigation into the existence of the psocid in the lava tube. If it is still present, avoid working in the immediate vicinity. 	Possible Negligible adverse	See comments above.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Cliff stabilisation netting may affect heritage resources	Possible Minor adverse	<ul style="list-style-type: none"> Avoid damage to all heritage features by placing catch fences away from old fortification walls and applying netting only to the lower slopes (below Munden's Path). 	Low Negligible adverse	See comments above.
There could be reduced accessibility to footpaths e.g. Munden's during cliff stability works	Possible Minor adverse	<ul style="list-style-type: none"> Place warning signs and barricades at both ends Munden's Path to prevent public access during stabilisation works. Advertise path closure in media. 	Possible Minor adverse	No further comments.
Suction and discharge of sediment along the wharf footprint may affect marine biodiversity	Probable Minor adverse	<ul style="list-style-type: none"> Make sure no turtles or cetaceans are in the bay prior to work commencing. Limit area of disturbance to wharf footprint. Discharge sediment in an area determined in consultation with ENRD and Darwin project scientists. 	Probable Minor adverse	No further comments.
The mobilisation of sediment laden runoff in Rupert's Valley which could enter local streams, drains and the marine environment.	Low Negligible adverse	<ul style="list-style-type: none"> <i>Measures to prevent sediment laden runoff being discharged to local watercourses untreated will be put in place (as per CEMP 1-6).</i> Install a litter and sediment trap at the end of Rupert's Run and clear out regularly. 	Low Negligible adverse	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Sediment could enter the marine environment during wharf construction.	Probable Minor adverse	<ul style="list-style-type: none"> • <i>Subject to the source and nature of material, quarried rock shall be washed prior to transport should it be deemed necessary by the Engineer.</i> • <i>Sediment traps and/or silt curtains shall be incorporated into the construction process of the jetty to prevent silt escaping from the working area (however, from experience with the temporary wharf, silt curtains are unlikely to be effective in the marine conditions prevailing at Rupert's Bay (see s. 6.2.3)).</i> • A detailed marine water quality monitoring protocol will be developed. If high levels of sediment are measured, the following mitigation measures will be considered: <ul style="list-style-type: none"> ○ Passing the material through a screen to remove the soil and fine material; ○ Washing the rock prior to transportation to the wharf. • Regular audits of the work area. 	Probable Minor adverse	<p>Basil Read has conducted an initial trial to place material in Rupert's Bay (near to the temporary landing facility) in order to assess sediment dispersion. This will inform how mitigation is to be tailored to the site conditions.</p> <p>At this point in time, it is not envisaged that it will be necessary to wash material prior to transporting it to the wharf for use in construction.</p>
The potential risk of chemical and fuel (oil) spillages entering the marine environment	Probable Minor adverse	<ul style="list-style-type: none"> • <i>Measures to protect local watercourses and the marine environment from the potential risk of chemical/fuel spillages will be put</i> 	Possible Minor adverse	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
		<p><i>in place, these shall include an emergency procedure to be followed in the event of a spillage or other pollution incident.</i></p> <ul style="list-style-type: none"> • The standard procedures to prevent oil spills set out in the EMP 2011 will be followed. • The CEMP will be updated to include a protocol to prevent and/or control spillages in the marine environment. 		
The risk of damage to Rupert's Lines during widening of the bridge over Rupert's Run	Possible Major adverse	<ul style="list-style-type: none"> • Erect protective hoarding or barricades to prevent damage to the historical wall during bridge widening work. • Impose 15mph speed limit. • Erect warning signs. • Re-face the landward wall with stone and re-point the arch over Rupert's Run. • Hold toolbox talks with drivers to raise awareness of the historical importance of the wall. 	Low Minor adverse	<p>All but the fourth mitigation measure has been successfully undertaken as part of the current working arrangements in Rupert's when dealing with bulky cargo discharged from the NP Glory 4.</p> <p>Widening the bridge will be essential to prepare for increased volumes and weights of traffic from the wharf (see Section 2 above).</p>
Opportunity to repair the rough end of the stone-packed wall	Neutral	<ul style="list-style-type: none"> • Repair the rough end of the old historical retaining wall (part of Rupert's Lines) using sympathetic construction materials and techniques, in consultation with a heritage specialist. 	Possible Minor beneficial	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Noise from dump trucks delivering fill and rock armour.	Probable Major adverse	<ul style="list-style-type: none"> • Seal the road surface to remove corrugations and repair potholes. • No truck idling in residential area. • Ensure trucks are regularly maintained. • Impose speed limit of 15 mph. • Adhere to working hours stipulated in the EMP and CEMP. • Do not allow drivers to use engine retarders as brakes. • Ongoing monitoring of noise levels in Rupert's Valley, Deadwood and Bottom Woods. 	Probable Moderate adverse	<p>In light of the timing constraints for construction, Basil Read has requested permission to work extended hours in Rupert's. Contract provisions have been made whereby the Resident Engineer may grant such permission on a case by case basis. Rupert's residents and businesses will be consulted prior to a decision being taken by the Resident Engineer. All other identified mitigation measures against noise impacts will have to be in place before permission is granted for extended working hours.</p> <p>A speed limit of 10mph will be maintained.</p> <p>All other recommended mitigation measures will be implemented.</p>
Noise from loading/unloading operations	Possible Minor adverse	<ul style="list-style-type: none"> • Adhere to working hours stipulated in the EMP and CEMP. • Ensure trucks and equipment are regularly maintained. • Ongoing monitoring of noise levels in Rupert's Valley and at Deadwood, if necessary. • If noise monitoring shows excessive noise, consider lining the truck load beds. 	Possible Minor adverse	See comment above.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Noise from concrete batch plant and pre-cast yard	Low Minor adverse	<ul style="list-style-type: none"> Ongoing monitoring of noise levels in Rupert's Valley and at Deadwood if necessary. 	Low Minor adverse	See comment above.
Vibration from dump trucks delivering fill and rock armour.	Probable Moderate adverse	<ul style="list-style-type: none"> Adhere to working hours stipulated in the EMP and CEMP. Seal the road surface to remove corrugations and repair potholes. 	Probable Moderate adverse	See comment above.
Noise and vibration from blasting at the quarry	Probable Major adverse	<ul style="list-style-type: none"> Conduct building condition surveys before and after the blasting period. Provide residents of Rupert's Valley and Deadwood with 24 hours advance notice of blasts (as per current practice). Adhere to noise limit of 125dB(A) at residential receptors. Ongoing monitoring of noise and vibration. 	Probable Moderate adverse	No further comments.
Dust impacts possible at the fish processing plant during wharf construction.	Probable Moderate adverse	<ul style="list-style-type: none"> Discuss issue with Argos management e.g. routine closure of doors and windows. Seal access road past Argos. Impose the speed limit of 15mph. Dust suppression on unsealed work areas next to Argos or cover with a layer of crusher run. Ongoing monitoring of dust in Rupert's Valley. 	Low Minor adverse	<p>A speed limit of 10mph will be maintained.</p> <p>All other recommended mitigation measures will be implemented.</p>

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Dust from haul trucks and increased traffic	Probable Moderate adverse	<ul style="list-style-type: none"> • Apply standard mitigation measures as set out in s. 2.6.3 of the EMP. • Impose the speed limit of 15 mph. • Seal the road surface to remove corrugations and repair potholes. • Regular road sweeping. • Dust suppression on haul roads. • Install dust minimisation equipment at batch plant. • Ongoing monitoring of dust in Rupert's Valley. <p>If monitoring shows that excessive dust is being generated, then:</p> <ul style="list-style-type: none"> • Damp down the rockfill on the truck prior to transportation. <p>If all the above measures still do not reduce dust levels to acceptable limits, then:</p> <ul style="list-style-type: none"> • Use tarpaulin covers on the trucks. This will increase the turnaround time for each truck and will place additional burden on the time table for construction and should only be considered as a last resort. 	Possible Minor adverse	<p>A speed limit of 10mph will be maintained.</p> <p>All other recommended mitigation measures will be implemented.</p>
Dust impacts from concrete batch plant and pre-cast yard	Low Minor adverse	<ul style="list-style-type: none"> • Apply standard mitigation measures for concrete batch plant as specified in CEMP. • Conduct ongoing monitoring. 	Low Negligible adverse	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
There will be an increase in construction traffic especially in Rupert's Valley, on Field Road and through Deadwood and Bottom Woods.	Probable Major adverse	<ul style="list-style-type: none"> • <i>Impose 15mph speed limit.</i> • <i>Provide footways for pedestrians in residential areas (if necessary).</i> • Try and limit non-essential trips. • May have to employ a stop-go system if necessary. 	Probable Major adverse	A speed limit of 10mph will be maintained.
Temporary diversions and possible temporary closures of roads	Probable Moderate adverse	<ul style="list-style-type: none"> • If access across Rupert's Run is not kept open during widening of the bridge, provide a temporary road access for Argos. • Try and keep one lane open during resurfacing of the road through Rupert's and employ a stop-go system. • Make sure that the community is aware of the system in place. 	Possible Minor adverse	No further comments.
Influx of daily workers to Rupert's Valley could result in an increase in crime	Low Minor adverse	<ul style="list-style-type: none"> • Promote community awareness programmes. • Reinforcement of codes of behaviour and respect of privacy through tool box talks. 	Low Minor adverse	No further comments.
Influx of daily workers to Rupert's Valley could result in increased economic activity for SMMEs	Probable Moderate beneficial	<ul style="list-style-type: none"> • Promote trading with local SMMEs. 	Probable Moderate beneficial	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Wharf construction will create some job opportunities and skills development	Probable Minor beneficial	<ul style="list-style-type: none"> • Employ local Saints. • Provide skills training e.g. in underwater construction. 	Probable Moderate beneficial	No further comments.
The beach including the amenity area at Rupert's Bay will not be available at times for recreational use during the construction of the permanent wharf.	Probable Moderate adverse	<ul style="list-style-type: none"> • <i>Avoid land take and adverse impacts on Rupert's beach and amenity area as far as possible.</i> • <i>Implement measures to minimise the disturbance to businesses and users of the amenity area and beach at Rupert's Bay.</i> • <i>Temporary closures of the beach shall be kept to an absolute minimum.</i> • Advertise dates of closure well in advance. • Consider opening on Sundays, if no work being done and public safety will not be compromised. • Provide a parking area next to the public ablution block and erect signage to direct beach goers to the pedestrian access through the wall. 	Probable Moderate adverse	No further comments.
Access to recreational fishing spots on the south side of Rupert's Bay will be restricted	Probable Minor adverse	<ul style="list-style-type: none"> • Advertise dates of closure well in advance. 	Probable Minor adverse	This will be unavoidable during construction period but as much advance notice as possible will be communicated.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Possible shortages in water supply to Rupert's Valley due to increased construction water demand	Probable Moderate adverse	<ul style="list-style-type: none"> Contractor must only use own borehole water for concrete mixing, dust suppression and other uses and not island supplies. 	Low Negligible adverse	No further comments.
Pressure on sanitation facilities	Probable Moderate adverse	<ul style="list-style-type: none"> Provide portable toilets at the wharf. Prohibit use of public conveniences at the picnic area by workers. 	Low Minor adverse	No further comments.
There could be disturbance and / or reduced accessibility to Shears jetty at Rupert's Bay for commercial fish unloading	Probable Major adverse	<ul style="list-style-type: none"> <i>When it is not possible to keep the Shears open, an alternative arrangement will be agreed with the Engineer and relevant Departments of SHG.</i> Options could include: <ul style="list-style-type: none"> Provide a temporary access track to the Shears; Provide an alternative temporary jetty; Pay compensation for costs incurred in having to transport fish landed in Jamestown to Argos. 	Probable Moderate adverse	Should it not be possible to use the Shears, transport of catches to Jamestown Wharf, a designated fish landing site, appears to be the most logical option.
Disruption to navigation, commercial use, tourism and recreation in Rupert's Bay	Probable Moderate adverse	<ul style="list-style-type: none"> Place notices in the media about the construction work, its duration and what restrictions will be imposed on access to the land or sea around the construction site. 	Possible Minor adverse	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
There will be temporary land take in the upper sections of Rupert's Valley associated with the opening of a temporary quarry and the pre-cast yard	Probable Minor adverse	<ul style="list-style-type: none"> None possible 	Probable Minor adverse	This land is within the ADAO.

Table 5: Summary of Impacts and Recommended Mitigation – Operations Period

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Large falling rocks may injure or kill people and damage equipment	Low Major adverse	<ul style="list-style-type: none"> See Table 4 above. 	Low Minor adverse	See Table 4 above.
Loose small rocks and stones may injure people and cause minor damage	Possible Moderate adverse	<ul style="list-style-type: none"> See Table 4 above. 	Low Minor adverse	See Table 4 above.
Impact of wharf on sediment movement in Rupert's Bay	Probable Minor adverse	<ul style="list-style-type: none"> None required. 	Probable Minor adverse	No further comments.
Risk of oil spills during product transfers	Possible Minor adverse	<ul style="list-style-type: none"> Ongoing personnel training. Develop and regularly update an oil spill control and pollution response plan. 	Low Minor adverse	This will also be considered as part of the island's National Disaster Management Plan.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
		<ul style="list-style-type: none"> • Adherence to port and safety regulations/procedures. • Restrict tanker manoeuvring and product transfers to daylight hours • Provide marine breakaway couplings and emergency shut-down systems. • Ensure ready availability of oil spill equipment during each fuel transfer. 		
Risk of oil spills due to vessel grounding	Low Major adverse	<ul style="list-style-type: none"> • Ongoing personnel training. • Develop and regularly update an oil spill and pollution response plan. • Ship vetting systems in place. • Provide advisories to ships' captains. • Update all relevant marine charts. • Aids to navigation marks demarcating navigation limit (these have been included in the wharf designs in accordance with the most recent guidelines of the International Association of Marine Aids to Navigation and Lighthouse Authorities). • Adherence to operational limiting conditions and port safety regulations. 	Negligible Major adverse	See above.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Risk of oil spills due to vessel contact with wharf	Low Major adverse	<ul style="list-style-type: none"> • Ongoing personnel training. • Develop and regularly update an oil spill and pollution response plan. • Aids to navigation demarcating reference marks • Adherence to operational limiting conditions and port and safety regulations. 	Low Minor adverse	See above.
Increased risk of ship collisions with other sea craft	Low Moderate adverse	<ul style="list-style-type: none"> • Ongoing personnel training • Adopt a single shipping practice in the bay i.e. only allow one vessel to be manoeuvring at one time. • Pollution response plan • Impose a 250m wide exclusion zone around bulk fuel moorings. • Adherence to port and safety regulations. 	Low Minor adverse	See above.
Potential for pollution from ships and wharf area (litter, waste water, spills, leaks, food waste)	Probable Minor adverse	<ul style="list-style-type: none"> • Provide litter bins on the wharf and empty on a scheduled (at least weekly) basis. • Erect appropriate signage. • Enforce the MARPOL regulations regarding the disposal of waste within 25 nautical miles of the coast. • Penalise offenders for littering and waste dumping. 	Possible Minor adverse	<p>Enforcing MARPOL regulations would be considered international best practice, but it should be noted that St Helena is not required to comply with MARPOL – see earlier comment.</p> <p>All other recommended mitigation measures will be implemented.</p>

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
Impacts on human health due to decreased water circulation in the bay causing an increase in pollution concentrations from sewer and stormwater outfalls	Possible Minor beneficial	<ul style="list-style-type: none"> • Install a soakaway at Argos and remove effluent discharge pipe. • Install a litter trap at the seaward end of Rupert's Run and clean out on a regular basis (at least every 3 months). • Provide larger litter bins at the picnic area and empty on a weekly basis (preferably immediately after a weekend). • Erect appropriate signage. • Erect information boards detailing the negative impacts of litter on marine ecology (it could form part of the island-wide waste management strategy). 	Probable Moderate beneficial	It would appear that there may be a possible improvement to the water quality in terms of a reduced coliform content in the swimming beach area due to the changes in current circulation from the proposed wharf construction.
Increased risk of ship collisions with cetaceans	Low Minor adverse	<ul style="list-style-type: none"> • Impose a 14 knot speed limit within the shelf area of the island for ships. • All ships to report any collisions. 	Low Minor adverse	No further comments.
Possible increase in habitat for benthic fauna around breakwater	Probable Minor beneficial	<ul style="list-style-type: none"> • None required. 	Probable Minor beneficial	No further comments.
Impacts on biodiversity due to decreased water circulation in the bay causing an increase in pollution concentrations from	Possible Minor adverse	<ul style="list-style-type: none"> • Install a soakaway at Argos and remove effluent discharge pipe. • Install a litter trap at the seaward end of Rupert's Run and clean out on a regular basis (at least every 3 months). 	Low Negligible adverse	See comments above.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
sewer and stormwater outfalls		<ul style="list-style-type: none"> • Provide larger litter bins at the picnic area and empty on a weekly basis (preferably immediately after a weekend). • Erect appropriate signage. • Erect information boards detailing the negative impacts of litter on marine ecology (it could form part of the island-wide waste management strategy). 		
Risk of introduction of invasive marine species through discharge of ballast water	Low Major adverse	<ul style="list-style-type: none"> • Ships not allowed to discharge ballast water within shelf area of the island. 	Low Major adverse	No further comments.
Impact of wharf lighting at night on seabirds and marine life	Possible Minor adverse	<ul style="list-style-type: none"> • There are several different lighting products on the market which limit the impact of lights at night on birds and marine fauna. These will be considered during the final design of the wharf. 	Low Minor adverse	No further comments.
Increased noise levels from ship offloading/loading activities	Low Minor adverse	<ul style="list-style-type: none"> • Ongoing training of wharf operations staff. • Regular maintenance of equipment. • Minimise use of reverse beepers. 	Low Minor adverse	No further comments.
Increased concentrations of greenhouse gas (GHG) emissions from	Possible Minor adverse	<ul style="list-style-type: none"> • Vet shipping charter companies to ensure that they have new generation ships (which comply with MARPOL regulations) or 	Low Negligible adverse	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
ships in port		systems in place to minimise GHGs.		
Direct ship offloading avoiding need for lighterage	Probable Moderate beneficial	<ul style="list-style-type: none"> None required. 	Probable Moderate beneficial	No further comments.
Job losses due to termination of lighterage	Probable Moderate adverse	<ul style="list-style-type: none"> Employ staff from lighterage companies as wharf operational staff (stevedores). 	Probable Minor adverse	No further comments.
Employment at new port	Probable Moderate beneficial	<ul style="list-style-type: none"> Employ local Saints as far as possible. Provide relevant training. 	Probable Moderate beneficial	No further comments.
Economic activity in Rupert's Valley will increase	Probable Moderate beneficial	<ul style="list-style-type: none"> None required. 	Probable Moderate beneficial	No further comments.
Economic development of island	Probable Moderate beneficial	<ul style="list-style-type: none"> None required. 	Probable Moderate beneficial	No further comments.
Potential alternative landing place for cruise ship passengers	Probable Minor beneficial	<ul style="list-style-type: none"> Ensure that steps or other passenger landing facilities are provided at the wharf. Notify cruise ship companies. 	Probable Moderate beneficial	The Wharf design includes provision for passenger landing and will provide a sheltered landing site for lighters from cruise vessels to come alongside.
Larger fishing vessels can be accommodated	Probable Moderate beneficial	<ul style="list-style-type: none"> None required. 	Probable Moderate beneficial	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
More/safer services for visiting yachts	Probable Minor beneficial	<ul style="list-style-type: none"> Advertise new facilities in yachting magazines and websites. 	Probable Minor beneficial	Arrangements in Rupert's are to be determined at final design stage. Cargo operations will take place in Rupert's but this will free up space for leisure/tourism activities at Jamestown Wharf.
Increased potential for fishing from new wharf	Possible Minor beneficial	<ul style="list-style-type: none"> None required. 	Possible Minor beneficial	No further comments.
Temporary closure of Rupert's beach during ship calls	Probable Minor adverse	<ul style="list-style-type: none"> Minimise duration of temporary closures. Notify public of beach closures one week in advance of a ship call. 	Probable Minor adverse	This is not new to the island, being standard practice for the Wharf in Jamestown and for the beach area in Rupert's during calls of the fuel tanker or the NP Glory 4
Impact of visiting mariners on community health (risk of STDs, teenage pregnancy, communicable diseases etc)	Probable Major adverse	<ul style="list-style-type: none"> Provide suitable accommodation for visiting seamen. Promote sex education in schools particularly regarding HIV, STDs and teenage pregnancy. Make free condoms available at bars and other social venues. Ensure adequate facilities and staff available to conduct health screening. Strict controls on the importation of drugs. 	Probable Moderate adverse	This is not new to St Helena as the island has a long history as a port of call.
The scale, design and characteristics of the proposals within the context of the local	Probable Moderate adverse	<ul style="list-style-type: none"> None possible. 	Probable Moderate adverse	No further comments.

Impact	Probability of occurrence and severity of consequences (before mitigation)	Recommended mitigation measures	Probability of occurrence and severity of consequences (after mitigation)	Comments
character area and adjoining seascape.				
Views from residential properties in Rupert's Valley.	Possible Minor adverse	<ul style="list-style-type: none"> Plant indigenous trees along road. 	Possible Minor adverse	No further comments.
Views from various footpaths, including post box walks, fisherman's routes with immediate views of the wharf.	Probable Major adverse	<ul style="list-style-type: none"> None possible. 	Probable Major adverse	No further comments.

4. Financial & Economic Considerations

- 4.1 Reference is made to “*Project Appraisal Jamestown and Rupert’s Bay Port Development Options*”, December 2012.
- 4.2 The appraisal notes that improved sea access must be a priority for St Helena. This is needed to complement and support the development taking place under the Airport Project and also to facilitate wider economic development initiatives on St Helena.
- 4.3 The three major benefits which are addressed are:
- a) those from the increased cruise ship passengers,
 - b) the savings realised from the provision of a docking facility for freight at Rupert’s Bay, and
 - c) the economic benefits resulting from the improvement in land usage, freeing land for redevelopment in support of what is expected to be a rapidly growing tourist industry.
- 4.4 The benefits from increased cruise ship visitors are assessed to be relatively modest, both because the numbers of passengers involved will be relatively small and the economic benefit they bring to the island would be a relatively small share of their spend (circa 11% plus a landing charge). The docking facility proposed for Rupert’ Bay would realise a major saving from:
- the expected elimination of the need for lighterage (over £30 million)
 - the savings in visiting vessels’ costs through faster turnaround and the avoidance of delays resulting from bad weather,
 - the reduction in the costs associated with the offloading of fuel, and
 - the utilisation of cheaper gearless rather than geared vessels (i.e. with their own cranes) required when lighters have to be employed.
- 4.5 The economic appraisal of Rupert’s Wharf generated a significant positive Net Present Value (NPV), indicating a positive return on the investment. Sensitivity analysis was undertaken on the risk that charter costs of appropriate ungeared freight vessels will significantly exceed the estimates, the number of cruise ship passengers will significantly over/undershoot the estimates, and capital costs will sharply exceed estimates. This analysis concluded that even a sharp increase in the numbers of cruise passengers over the estimates made will not result in enough benefit to justify current investment in the Jamestown Breakwater.
- 4.6 The appraisal demonstrated that the Rupert’s Bay Wharf retains a positive NPV even if its costs sharply increase over the estimates employed and the traffic forecasts and expected savings are significantly downgraded. It would require a sharp reduction in the benefits resulting from the elimination of lightering before the positive NPV was erased and this does not appear credible.
- 4.7 Further discussion on the economic impacts of Rupert’s Wharf can be found

at Section 6.3.7 of the Addendum to the ES (see Appendix 3). Whilst there are some differences of opinion in terms of quantifying costs/benefits arising from the project, the overall conclusion is that Rupert's Wharf will have positive economic impacts. A summary of the economic impacts is shown in Table 6 below.

Table 6: Summary of Economic Impacts⁷

Impact	Rating in the 2008 ES	Extent	Duration	Reversibility	Probability of occurrence and severity of consequences (before mitigation)	Effectiveness of mitigation	Probability of occurrence and severity of consequences (after mitigation)
Direct ship offloading avoiding need for lightering	Not assessed	National	Long-term constant	-	Probable Moderate beneficial	-	Probable Moderate beneficial
Job losses due to termination of lightering	Not assessed	National	Permanent	No	Probable Moderate adverse	High	Probable Minor adverse
Employment at new port	Not assessed	National	Long-term constant	-	Probable Moderate beneficial	-	Probable Moderate beneficial
Economic activity in Rupert's Valley will increase	Not assessed	Rupert's Valley	Long-term constant	-	Probable Moderate beneficial	-	Probable Moderate beneficial
Economic development of island	Not assessed	National	Long-term constant	-	Probable Moderate beneficial	-	Probable Moderate beneficial
Potential alternative landing place for cruise ship passengers	Not assessed	National/ International	Long-term constant	-	Probable Minor beneficial	Moderate	Probable Moderate beneficial
Larger fishing vessels can be accommodated	Not assessed	National/ International	Long-term constant	-	Probable Moderate beneficial	-	Probable Moderate beneficial
More/safer services for visiting yachts	Not assessed	National/ International	Long-term constant	-	Probable Minor beneficial	-	Probable Minor beneficial

⁷ Source: Table 6.22 of the Addendum to the ES (see Appendix 3)

5. Social Considerations

Background

- 5.1 Reference should be made to the Socioeconomic Impact Assessment (Volume 6 of the Environmental Statement). The Socioeconomic Impact Assessment examined the potential impacts of the Airport Project under seven key headings and assessed these impacts for both the construction and operations periods of the project.
- 5.2 Particular reference should be made to Table 5.2 of the Socioeconomic Impact Assessment. This assessed construction period effects. The findings in Table 5.2 remain applicable.

Key Findings

- 5.3 Further discussion on the social impacts of Rupert's Wharf can be found at Section 6.3.8 of the Addendum to the ES (see Appendix 3). A summary of the identified social impacts is shown in Table 7 below.

Stakeholder Engagement

- 5.4 The primary stakeholders are the residents and businesses in Rupert's. A well attended focus group discussion, led by Bryony Walmsley, took place during the development of the revised designs in April 2013.
- 5.5 Additionally, however, the works in Rupert's are of national importance to St Helena. In recognition of this, it is recommended to engage in further public consultation at this time. The original Development Application for the Airport Project was extensively consulted upon. The ADAO and the provisions of the LDCP in respect of the Airport were also extensively consulted upon. The consultation period will build on these earlier rounds of consultation.
- 5.6 The Planning Statement and accompanying documentation will be released for public consultation during the period Friday, 18th October 2013 to Friday, 15th November 2013. Any representations received will be considered by the Planning Authority and by Governor-in-Council.
- 5.7 Information has already been released into the public domain via the Airport Update (Airport Update No. 36, 12 September 2013) and further consultation materials will follow.

Table 7: Summary of Social Impacts⁸

Impact	Rating in the 2008 ES	Extent	Duration	Reversibility	Probability of occurrence and severity of consequences (before mitigation)	Effectiveness of mitigation	Probability of occurrence and severity of consequences (after mitigation)	Comments
Increased potential for fishing from new wharf	Not assessed	National	Permanent	-	Possible Minor beneficial	-	Possible Minor beneficial	
Temporary closure of Rupert's beach during ship calls	Moderate adverse Temporary Long-term	National	Short-term constant	Yes	Probable Minor adverse	None possible	Probable Minor adverse	This is not new to the island, being standard practice for the Wharf in Jamestown and for the beach area in Rupert's during calls of the fuel tanker or the NP Glory 4
Impact of visiting mariners on community health (risk of STDs, teenage pregnancy, communicable diseases etc)	Minor adverse	National	Long-term constant	Yes/No	Probable Major adverse	Moderate	Probable Moderate adverse	This is not new to St Helena as the island has a long history as a port of call.

⁸ Source: Table 6.23 of the Addendum to the ES (see Appendix 3)

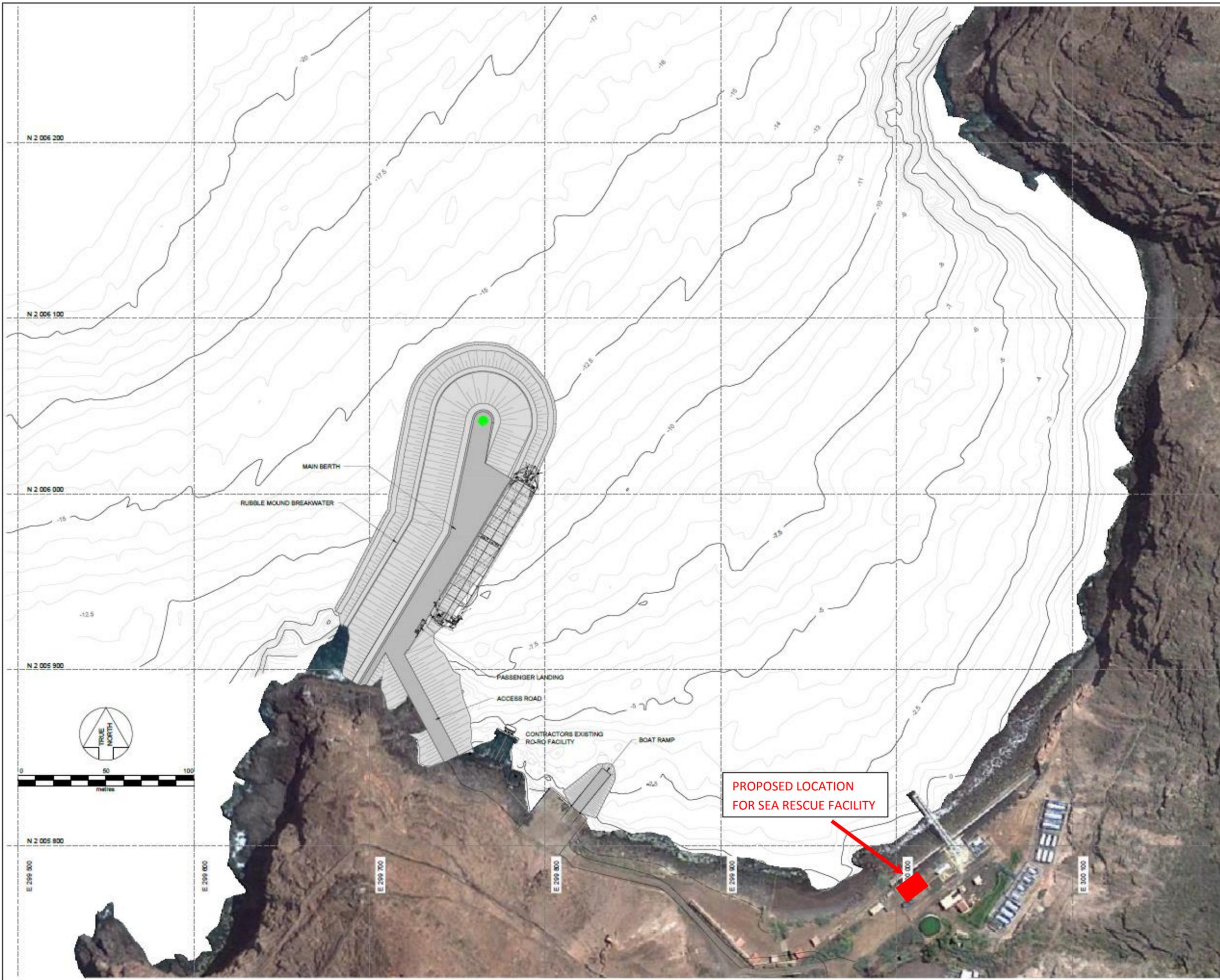
6. Conclusion & Recommendations

- 6.1 The alternative design for the Permanent Wharf represents a significant deviation to the Reference Design in terms of the location and orientation of the wharf. However, there is no change to the method of construction in the Reference Design. Construction will take place in the original area identified for wharf development within the Airport Development Area Order (ADAO).
- 6.2 Similarly for the Sea Rescue Facility and Rupert's Fuel Pipeline, the alternative designs represent a significant deviation to the Reference Design in terms of the location. However, there is no change to the method of construction in the Reference Design and the construction will still take place within the ADAO.
- 6.3 The alternative designs are in keeping with the original development consent granted for the above works. The alternative designs are also entirely consistent with the provisions of the LDCP.
- 6.4 The alternative designs for the Permanent Wharf, the Sea Rescue Facility and the Rupert's Fuel Pipeline meet the required output specifications under the Airport Project. The designs have been appraised on technical, environmental, financial and economic grounds. The parties under the Airport Project have concluded that the alternative designs are preferable to the Reference Designs.
- 6.5 Governor-in-Council is therefore requested to approve an amendment to the original development consent for the Airport Project to enable Rupert's Wharf, the Sea Rescue Facility and Rupert's Fuel Pipeline to proceed.

Appendix 1: References

- Airport Development Ordinance (2006)
- Land Development Control Plan 2012-2022, Adopted Revised Plan, SHG, April 2012
- St Helena Airport and Supporting Infrastructure: Planning Statement, Atkins, March 2008
- Development Permission for the Airport Project, September 2008
- Environmental Statement for the Airport Project, 2008
- Addendum to the Environmental Statement, September 2013
- St Helena Access Feasibility Study, Atkins, 2005
- Airport Update No. 36, 12 September 2013
- Rupert's Bay Permanent Wharf – Phase 1: Shipping Review Report, Basil Read, October 2012
- Rupert's Bay Permanent Wharf – Phase 2 Preliminary Design Report, Basil Read, August 2013

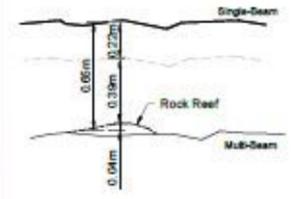
Appendix 2: Revised Design Drawing - Rupert's Wharf



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GEODETTIC PARAMETERS:
HORIZONTAL COORDINATE SYSTEM
 GEODETTIC DATUM : World Geodetic System 1984 (WGS 84)
 ELLIPSOID : World Geodetic System 1984 (WGS 84)
 Semi major axis : 6378137.000 m
 Inverse flattening : 298.257223603
 PROJECTION : Transverse Mercator (ST HELENA LOCAL)
 Central Meridian : 05°43' 00" W
 Latitude of Origin : 15°58' 00" S
 False Easting : 200000.00 m
 False Northing : 200000.00 m
 Scale factor at CM : 1.0000
VERTICAL DATUM : MSL (0.50m to MSL)

Bathy merged by reducing single beam by 0.05m as derived by Titan 0.22m (Base Control Error)
 Titan 0.39m (Ave Diff Excluding rock reef area)
 Titan 0.04 (half of 0.08m Rock Reef Diff)



PRELIMINARY NOT FOR CONSTRUCTION

FOR USE AUGUST 2013

AMENDMENT				
REV	DATE	CHECKED BY	BY	DESCRIPTION
AA	10/08/13	W.S.D.	S.J.S.	FOR BATHYMETRY APPROVAL

CONTRACTOR

Sea Reef Design
 7 New Road, Highgate, St. Helena
 Phone: +290 277 2400
 Fax: +290 277 2401

DESIGNER

Prestedge Retief Dresner Wijnberg
 Consulting, Civil and Coastal Engineers
 100 Water Street, St. Helena
 Phone: +290 277 2400

DESIGNED	DRAWN	CHECKED
W.S.D.	D.A.K.	S.J.P.

CLIENT

GOVERNMENT OF ST HELENA
 St. Helena Government
 The Castle
 Jamestown
 St. Helena Island
 ST. HELENA

PROJECT
ST HELENA AIRPORT PROJECT

DRAWING DESCRIPTION
GENERAL ARRANGEMENT - RUPERT'S BAY WHARF LAYOUT

SCALE ON A1	DATE CREATED
1:1000	13/08/13
DRAWING NUMBER	REVISION
PRDW-900-MN-0003-01	B

