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Isles of Scilly Sea Defences Environmental Statement

Volume II: Appendices

Final Report

November 2022

www.jbaconsulting.com



Council of the
ISLES OF SCILLY



JBA Project Manager

Harriet Thomlinson
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 Shipley
 BD18 3LF

Revision History

Revision Ref/Date	Amendments	Issued to
V1	Final Report	CIoS

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

Prepared by Harriet Thomlinson BA MSc MIEMA CEnv
 (Senior Environmental Consultant)

Reviewed by Tim Carter BSc MSc CMLI MIEMA CEnv
 (Technical Director)

Purpose

This document has been prepared as a Final Report for The Council of the Isles of Scilly. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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EIA Quality Mark

This Environmental Statement, and the Environmental Impact Assessment (EIA) carried out to identify the significant environmental effects of the proposed development, was undertaken in line with the EIA Quality Mark Commitments.

The EIA Quality Mark is a voluntary scheme, operated by IEMA, through which EIA activity is independently reviewed, on an annual basis, to ensure it delivers excellence in the following areas:

- *EIA Management*
- *EIA Team Capabilities*
- *EIA Regulatory Compliance*
- *EIA Context & Influence*
- *EIA Content*
- *EIA Presentation*
- *Improving EIA practice*

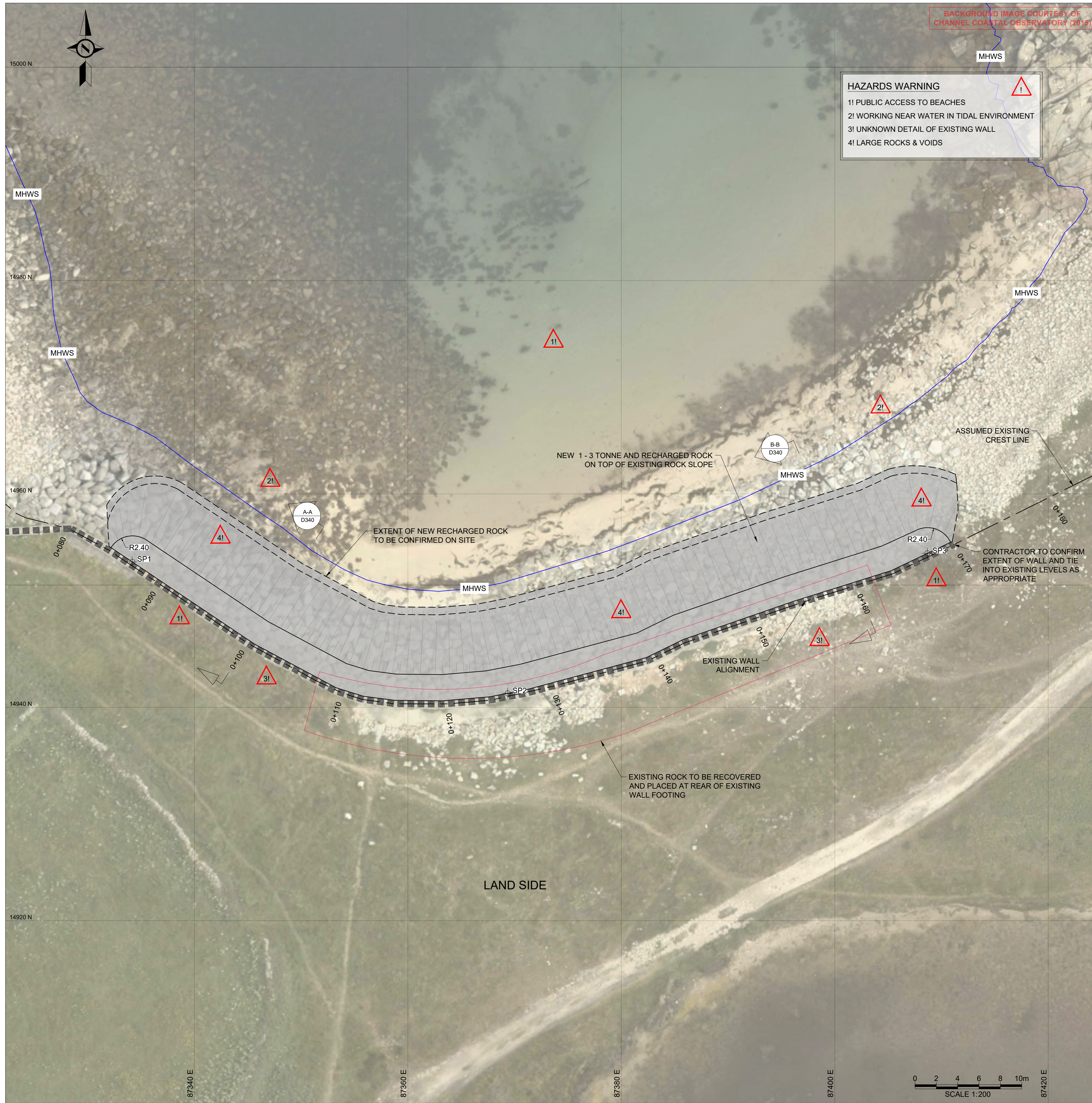
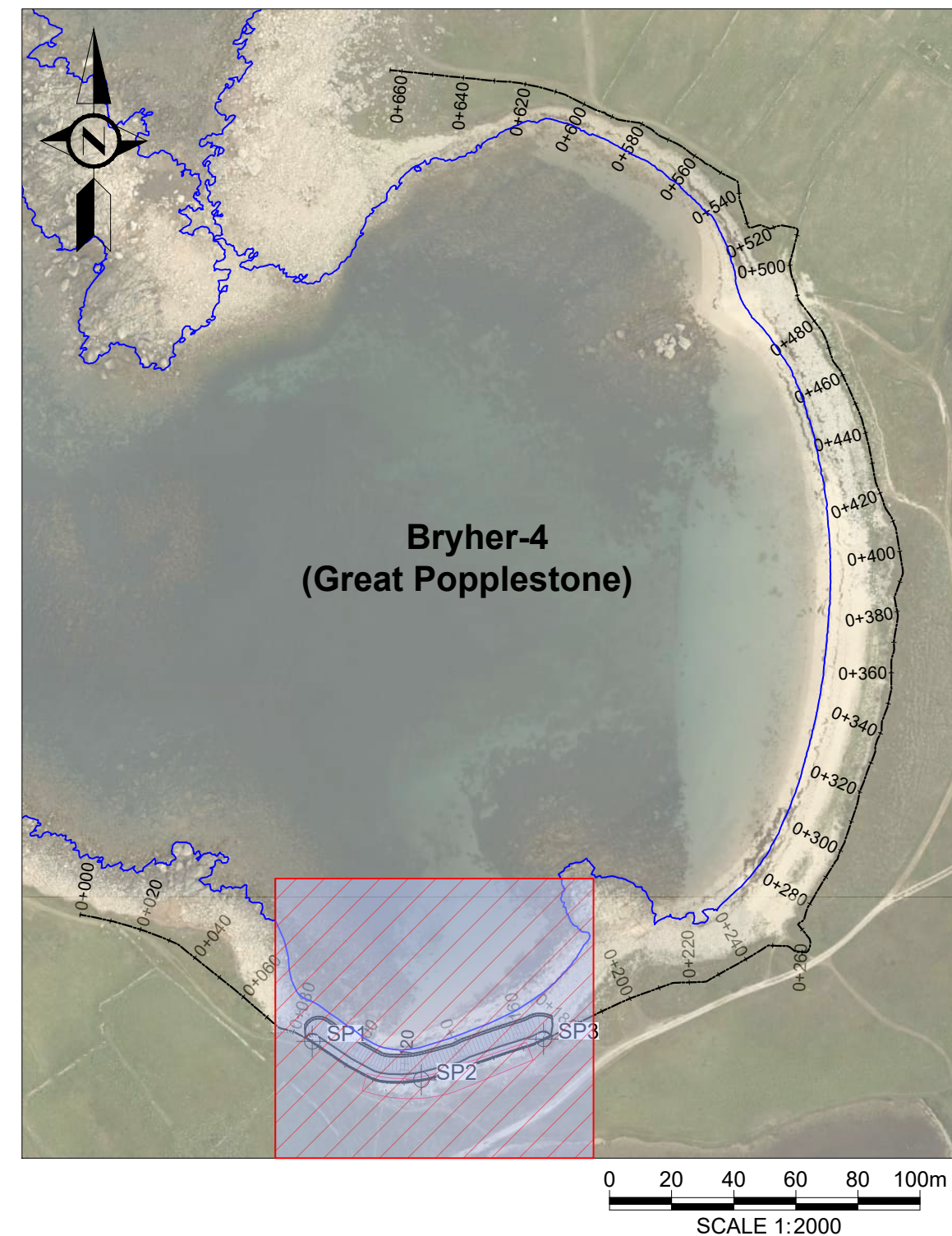


To find out more about the EIA Quality Mark please visit: <http://www.iema.net/eia-quality-mark/>

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LOCATION PLAN:



HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! UNKNOWN DETAIL OF EXISTING WALL
- 4! LARGE ROCKS & VOIDS

KEY PLAN:



NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
2. HORIZONTAL DATUM IS REFERENCED TO OSGB 1936 BRITISH NATIONAL GRID.
3. VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
4. SETTING OUT POINTS ARE SEAWARD SIDE OF EXISTING WALL. TO BE AGREED FOLLOWING DETAILED TOPOGRAPHIC SURVEYS.
5. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
6. CONTRACTOR TO CONFIRM DETAILS OF THE INS TO EXISTING GROUND.
7. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
8. FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-210-D340.
9. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.
10. RADII AND ADDITIONAL SETTING OUT POINTS ARE NOT INCLUDED DUE TO UNCERTAINTY ON LEVELS.

LEGEND:

— MHWS= 2.77 mOD

SP	Easting	Northing	Elevation
SP1	87.3342	14.9536	6.100
SP2	87.3694	14.9413	6.100
SP3	87.4087	14.9544	6.100

01	ISSUED FOR REVIEW	PGU	AGC	AUO	11 JUL 22
REV	DRAWING STATUS	DRN	APPR	AUTH.	DATE

CLIENT:
THE COUNCIL OF THE ISLES OF SCILLY

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Oxfordshire OX10 8BA
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Tel: +44(0)1491 835381
Fax: +44(0)1491 832233

PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**BRYHER-4 GREAT POPPLESTONE
GENERAL ARRANGEMENT LAYOUT**

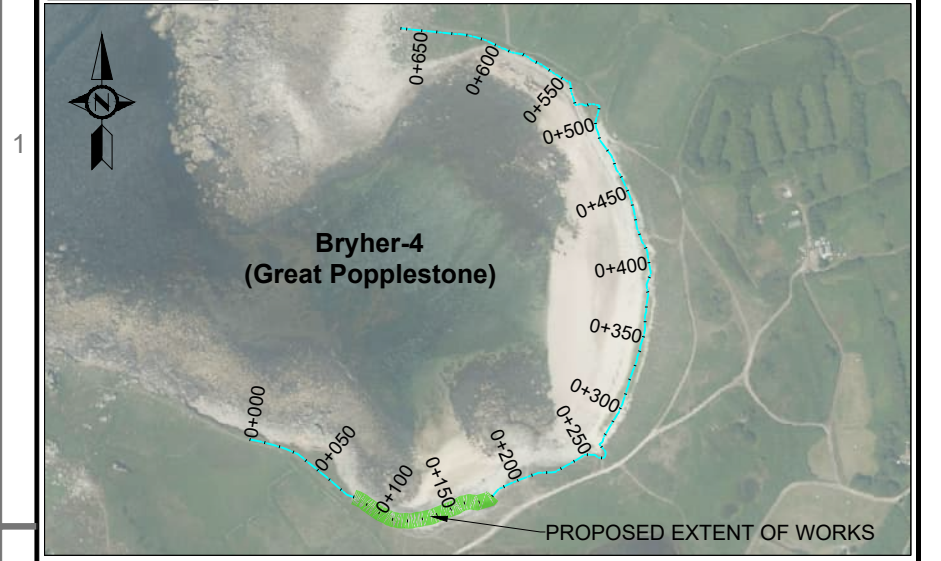
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11/07/22 PGU 4-Great Popplestone_02.dwg

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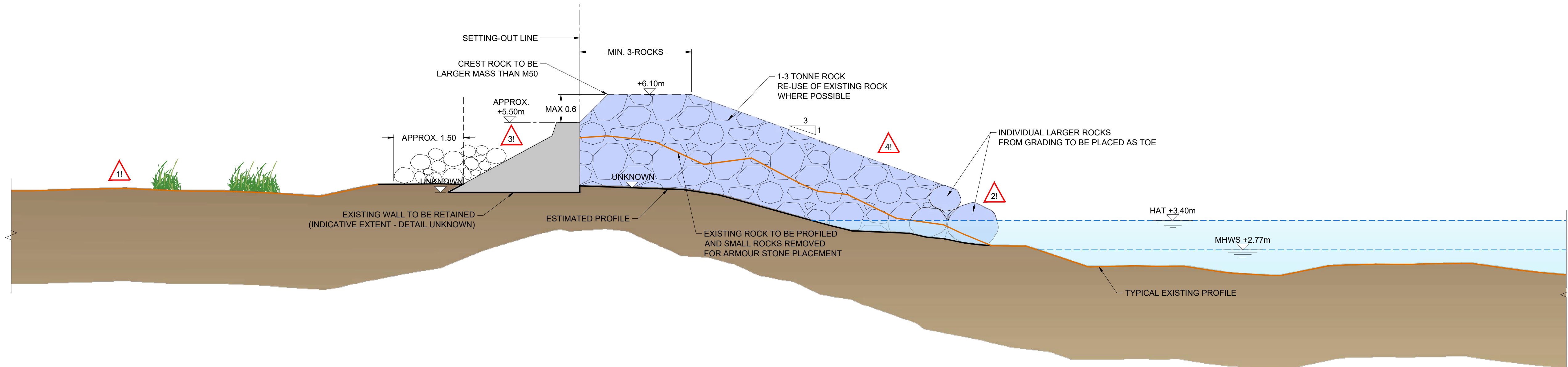


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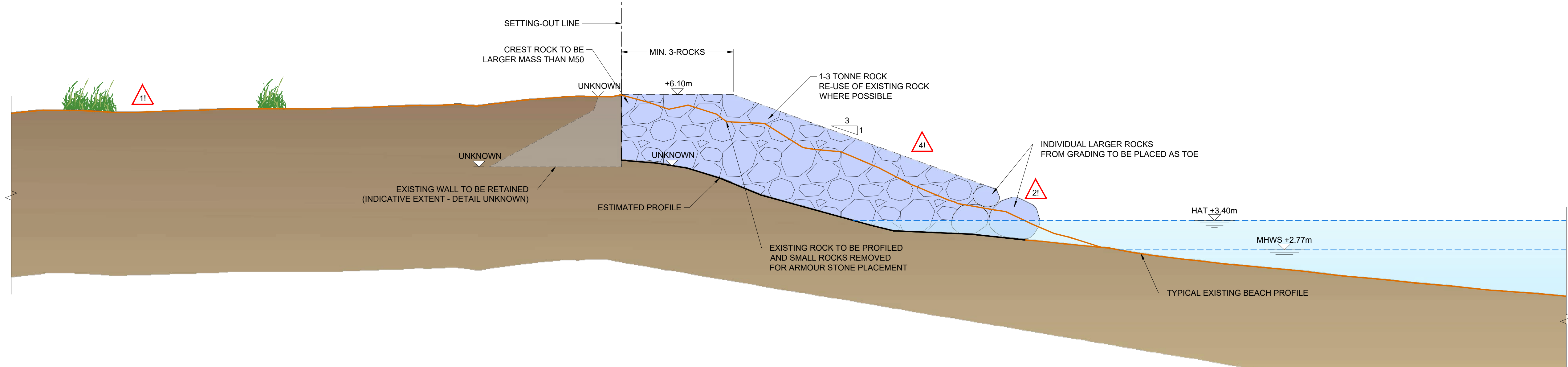
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7. EXISTING WALL SECTIONS SHOWN IS ILLUSTRATIVE OF A FIXED STRUCTURE ONLY.
9. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
10. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-210-D113.
11. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.
12. TYPICAL EXISTING PROFILES SHOWN IN SECTION A-A IS AT CHAINAGE 100 AND SECTION B-B IS AT CHAINAGE 160.

HAZARDS WARNING

1! PUBLIC ACCESS TO BEACHES
 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
 3! UNKNOWN DETAIL OF EXISTING WALL
 4! LARGE ROCKS & VOIDS

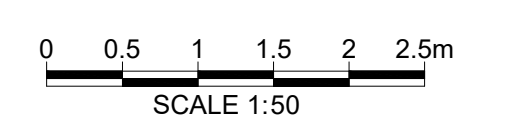


SECTION A-A
Ch.0+100



SECTION B-B
Ch.0+160

TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



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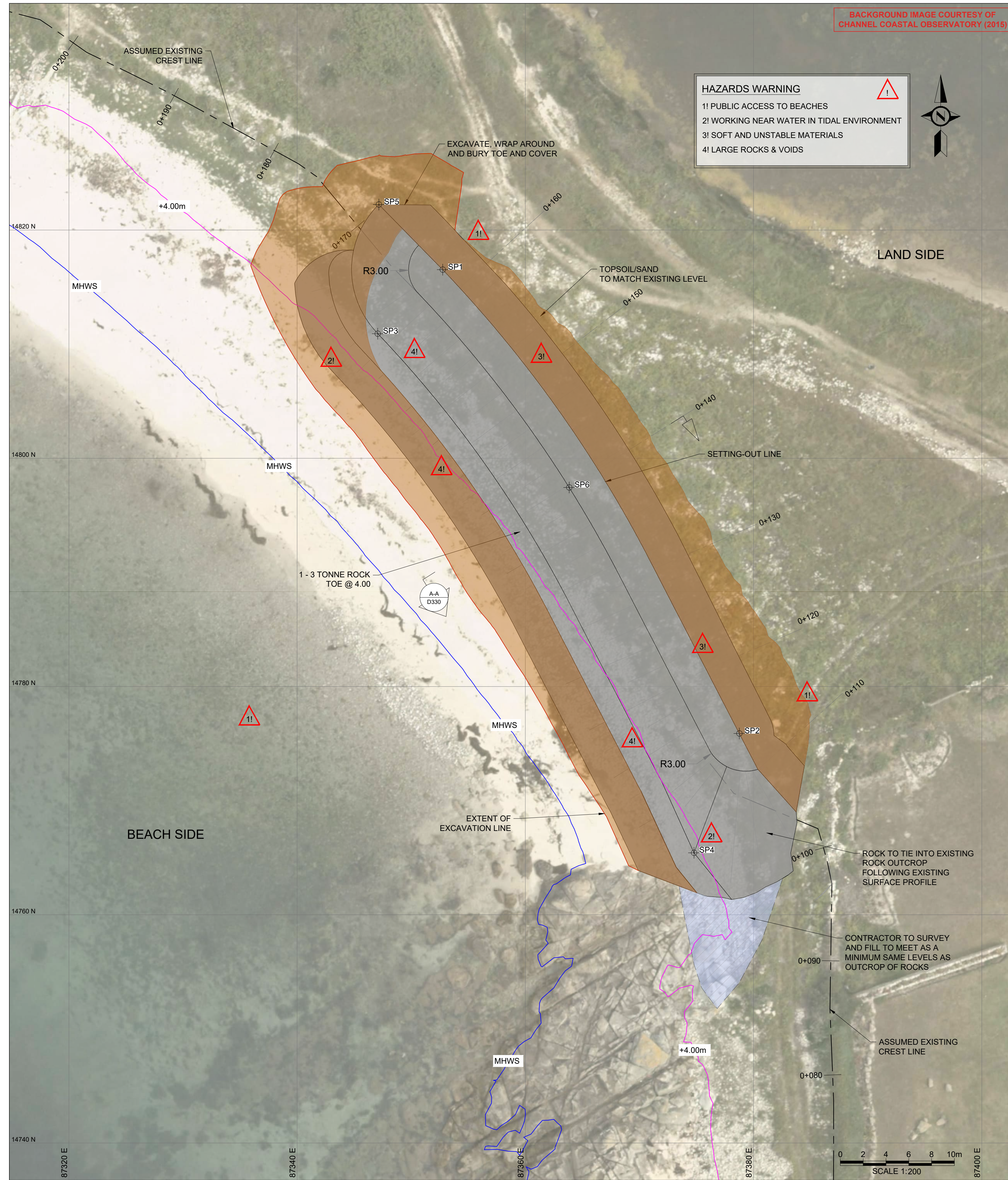
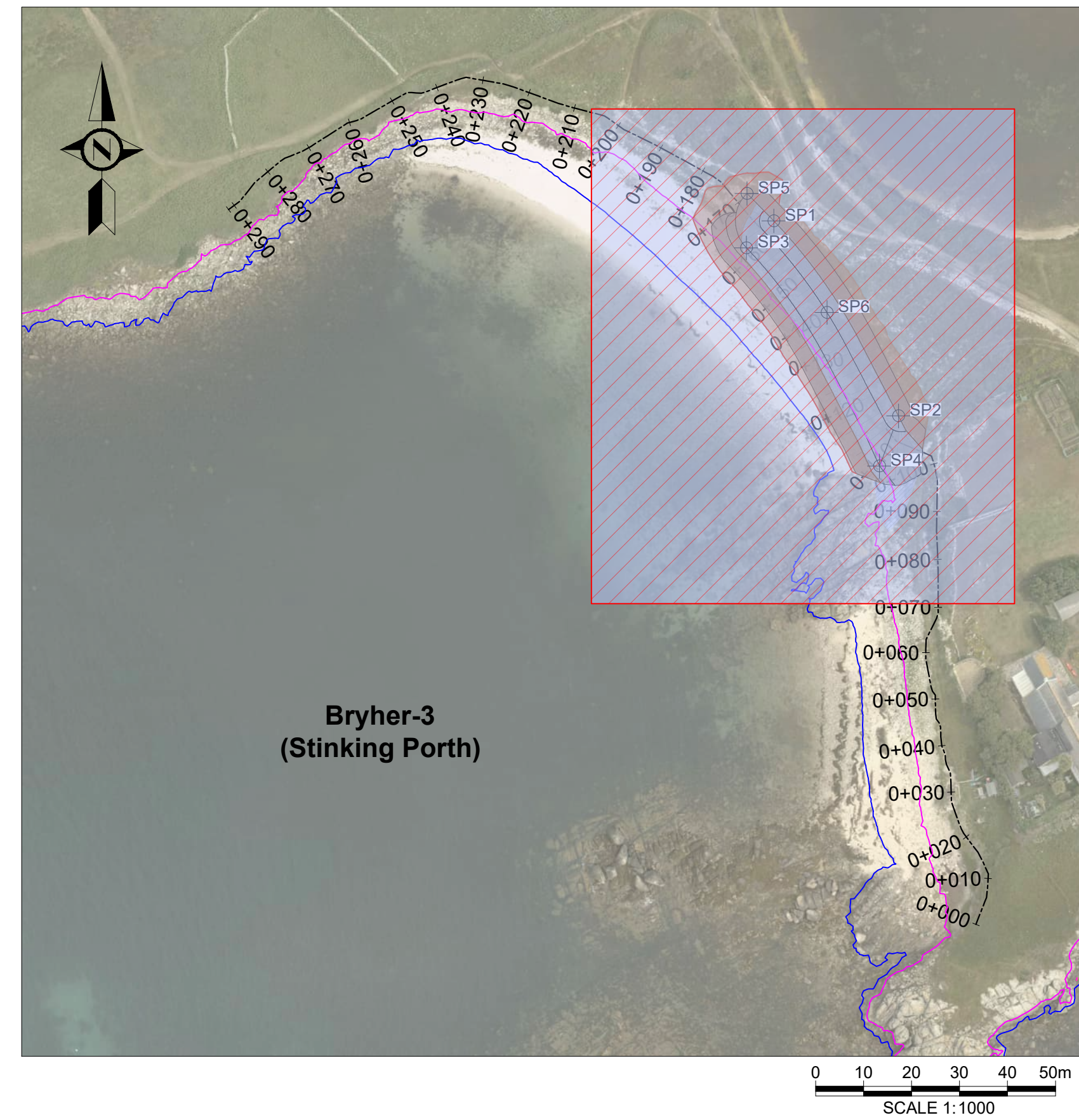
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**BRYHER 4 - GREAT POPPLESTONE
TYPICAL SECTIONS**

SCALE: 1:50 SHEET SIZE: A1

DRAWING No: DKR6499-210-D340 REV: 01

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 PGU
 08/07/22

LOCATION PLAN:

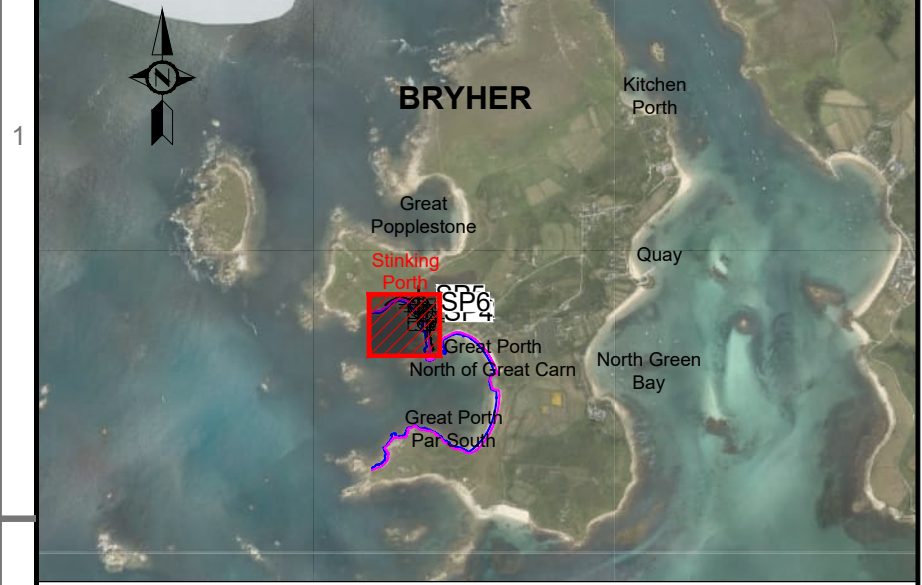


BACKGROUND IMAGE COURTESY OF CHANNEL COASTAL OBSERVATORY (2015)

HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! SOFT AND UNSTABLE MATERIALS
- 4! LARGE ROCKS & VOIDS

KEY PLAN:



NOTES:

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6. CONTRACTOR TO CONFIRM DETAILS OF TIE INS TO EXISTING GROUND.
7. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
8. FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-210-D330.
9. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.
10. RADII AND ADDITIONAL SETTING OUT POINTS ARE NOT INCLUDED DUE TO UNCERTAINTY ON LEVELS.

LEGEND:

- FILL
- 1 - 3 TONNE ROCK
- MHWS=2.77 mOD
- 4.00 mOD

SP	Easting	Northing	Elevation
SP1	87.3528	14.8165	6.500
SP2	87.3788	14.7759	6.500
SP3	87.3471	14.8109	4.000
SP4	87.3748	14.7654	4.000
SP5	87.3472	14.8222	4.000
SP6	87.3638	14.7974	6.500

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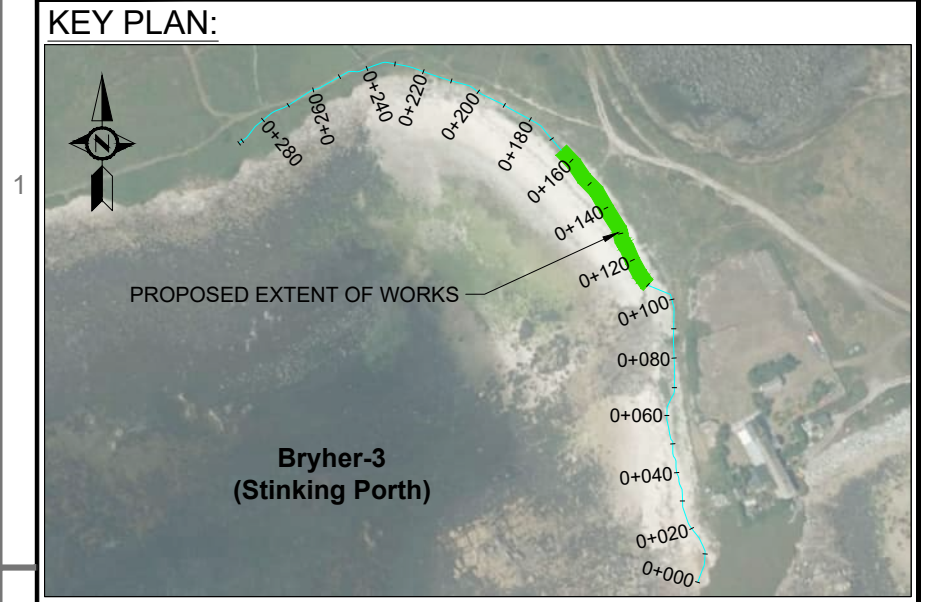
PROJECT:
**ISLES OF SCILLY
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COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**BRYHER-3 STINKING PORTH
GENERAL ARRANGEMENT LAYOUT**

SCALE: AS SHOWN SHEET SIZE: A1
DRAWING No: DKR6499-210-D112 REV: 01

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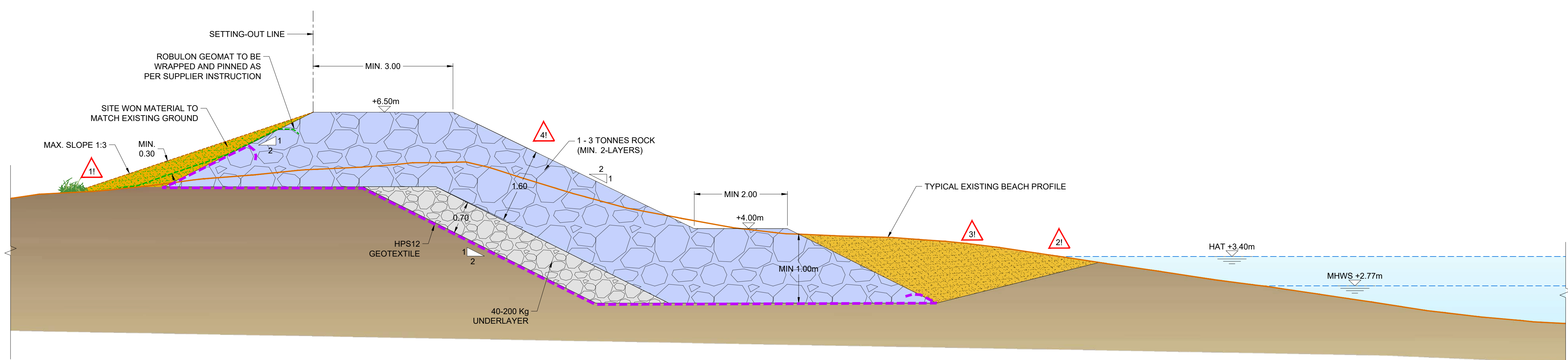
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- NOTES:**
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 5. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
 6. CONTRACTOR TO CONFIRM DETAILS OF TIE INS TO EXISTING GROUND.
 7. BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.
 8. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 9. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-210-D112.
 10. TYPICAL EXISTING BEACH PROFILE SHOWN IS AT CHAINAGE 140.
 11. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.

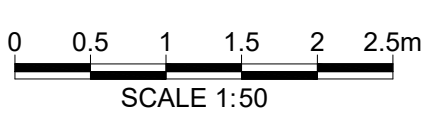
HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! SOFT AND UNSTABLE MATERIALS
- 4! LARGE ROCKS & VOIDS



SECTION A-A
Ch.0+140

TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



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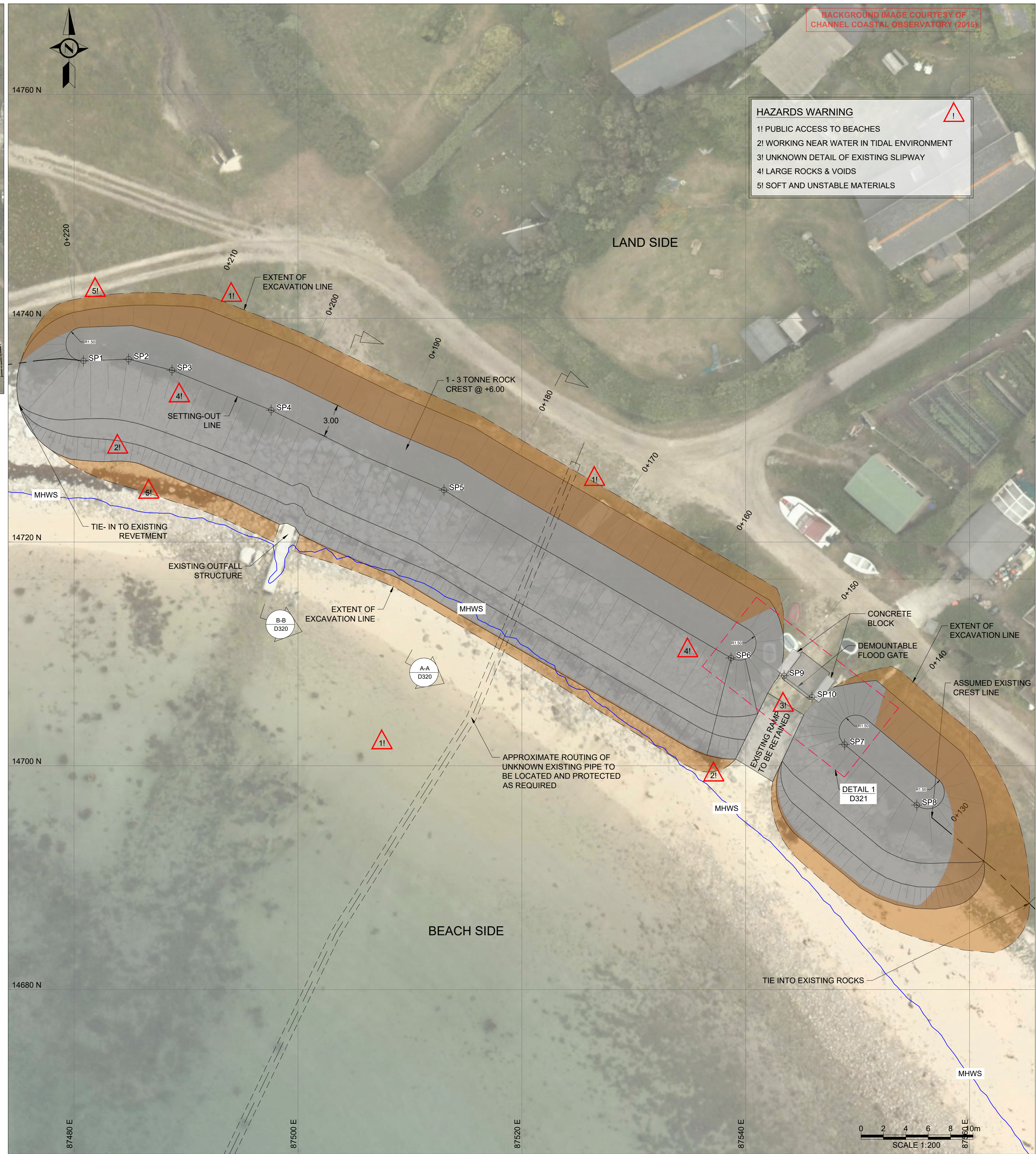
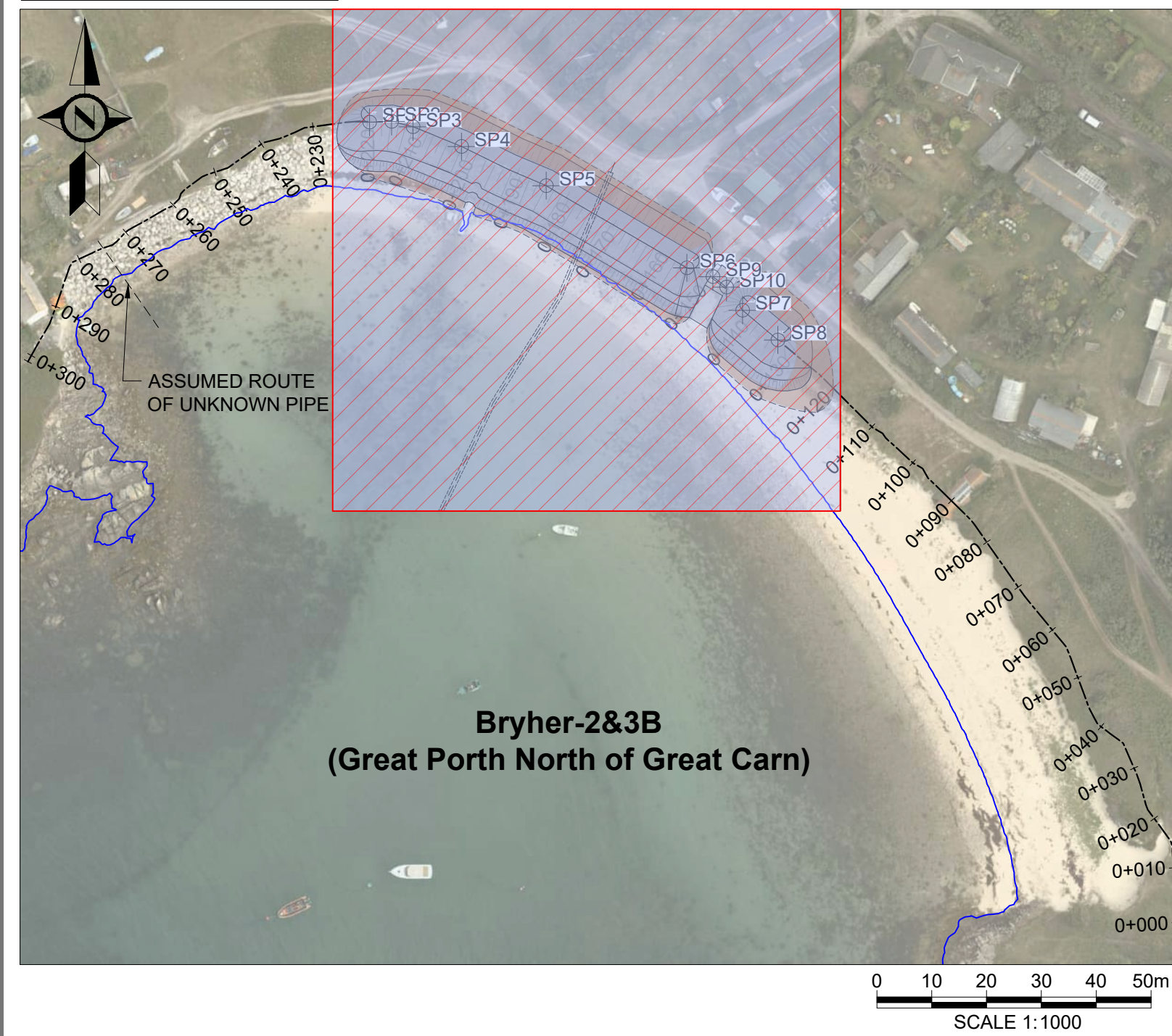
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DRAWING TITLE:
**BRYHER 3 - STINKING PORTH
TYPICAL SECTION**

SCALE: 1:50	SHEET SIZE: A1
DRAWING No: DKR6499-210-D330	REV: 01

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 WST
 27/06/22

LOCATION PLAN:



HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! UNKNOWN DETAIL OF EXISTING SLIPWAY
- 4! LARGE ROCKS & VOIDS
- 5! SOFT AND UNSTABLE MATERIALS

KEY PLAN:



NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
2. HORIZONTAL DATUM IS REFERENCED TO OSGB 1936 BRITISH NATIONAL GRID.
3. VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
4. SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED SURVEYS.
5. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
6. EXISTING RAMP SHOWN IS ILLUSTRATIVE OF A FIXED STRUCTURE ONLY. EXTENT TO BE CONFIRMED.
7. RAMP CREST TO BE REINSTATE WITH C20 CONCRETE.
8. FOR DETAILS ON FLOOD GATE REFER TO DRAWING No. DKR6499-210-321 AND DKR6499-210-322.
9. FOR CONCRETE DETAILS REFER TO DRAWINGS DKR6499/210/D323 AND DKR6499/210/D324.
10. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
11. FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-210-D320.
12. APPROXIMATE EXISTING PIPELINE ROUTING TAKEN FROM DESIGN DRAWING B2984-04.

LEGEND:

- FILL
- 1 - 3 TONNE ROCK
- MHW=2.77 mOD

SP	Easting	Northing	Elevation
SP1	87.4808	14.7362	6.000
SP2	87.4849	14.7363	6.000
SP3	87.4887	14.7354	6.000
SP4	87.4976	14.7318	6.000
SP5	87.5130	14.7246	6.000
SP6	87.5387	14.7096	6.000
SP7	87.5488	14.7019	6.000
SP8	87.5553	14.6965	6.000
SP9	87.5434	14.7080	4.750
SP10	87.5459	14.7061	4.750

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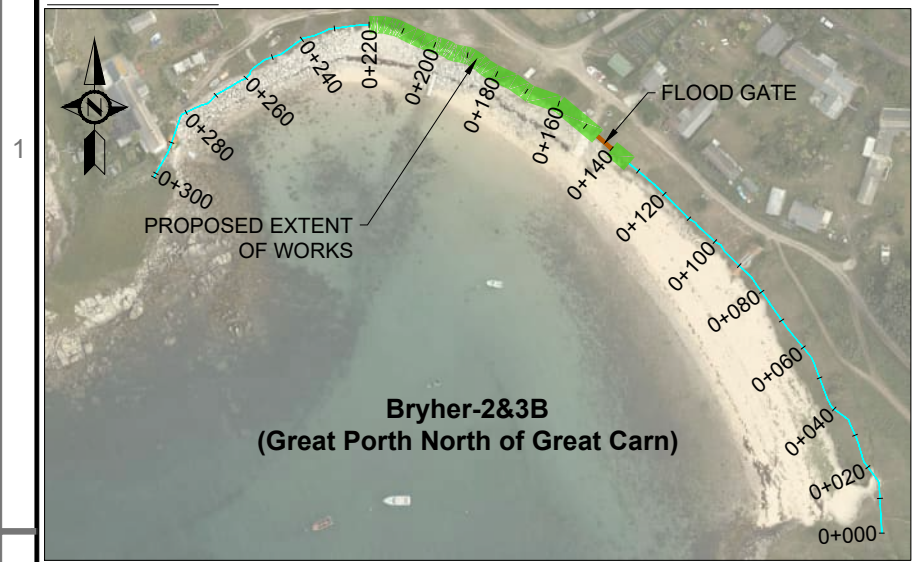
DRAWING TITLE:
**BRYHER-2&3B
GREAT PORTH NORTH OF GREAT CARN
GENERAL ARRANGEMENT LAYOUT**

SCALE: AS SHOWN SHEET SIZE: A1
DRAWING No: DKR6499-210-D111 REV: 01

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 04/08/22

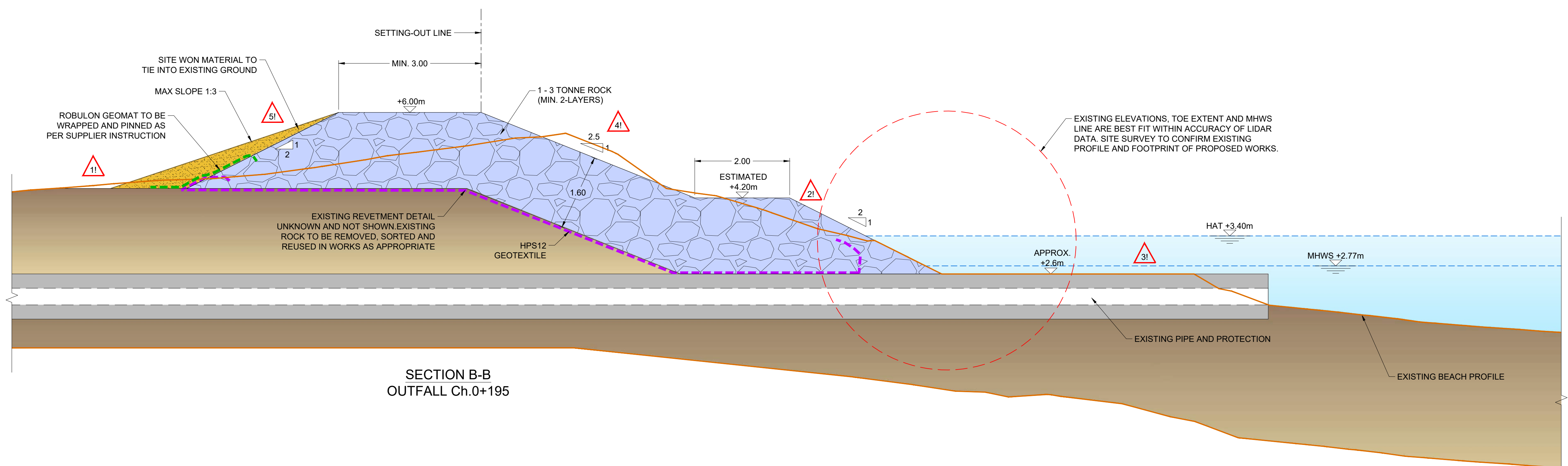
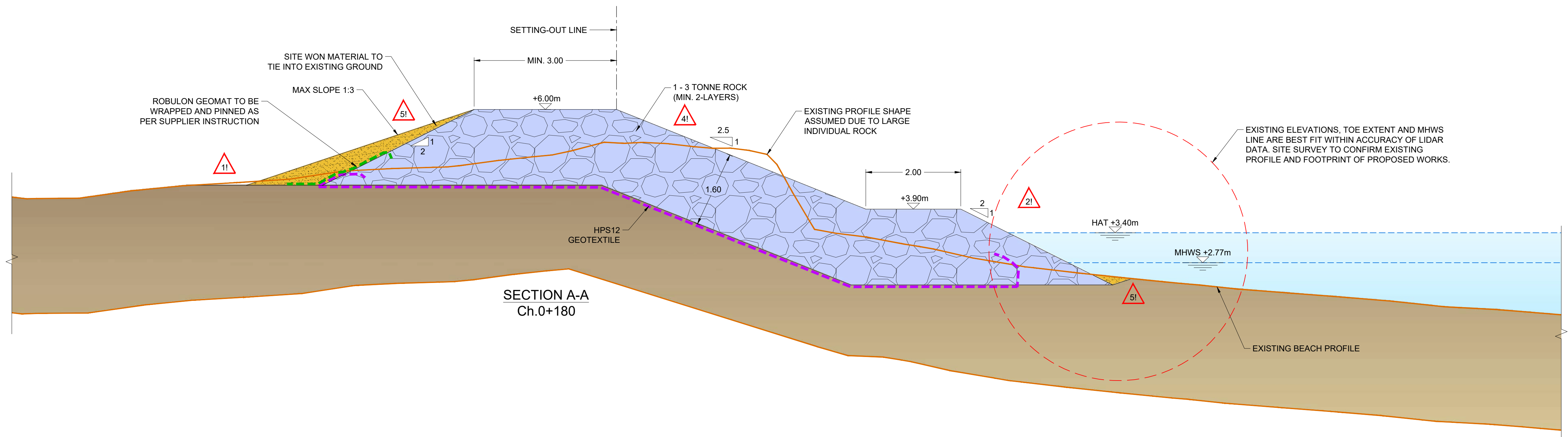
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KEY PLAN:



HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! EXISTING OUTFALL
- 4! LARGE ROCKS & VOIDS
- 5! SOFT AND UNSTABLE MATERIALS



NOTES:

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6. BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.
7. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
8. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-210-D111.
9. DETAIL OF EXISTING AS BUILT REVETMENT AND OUTFALL PIPE UNKNOWN. SECTION B-B DESIGN ON DRAWING B2989/04.
10. DURING CONSTRUCTION CONTRACTOR TO SURVEY OUTFALL AND CONFIRM INTERFACE WITH REVETMENT EXISTING.
11. PIPE AND CONCRETE SURROUND TO BE RETAINED. CONTRACTOR TO PROTECT THE WORKS AS APPROPRIATE.
12. LARGE EXISTING ROCKS IN EXCESS OF 1 - 3T GRADE TO BE PLACED AS TOE.

TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m

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**BRYHER 2&3B
GREAT PORTH NORTH OF GREAT CARN
TYPICAL SECTION**

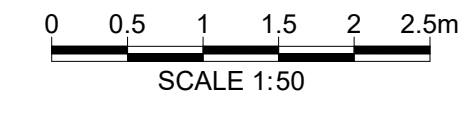
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AS SHOWN

SHEET SIZE:
A1

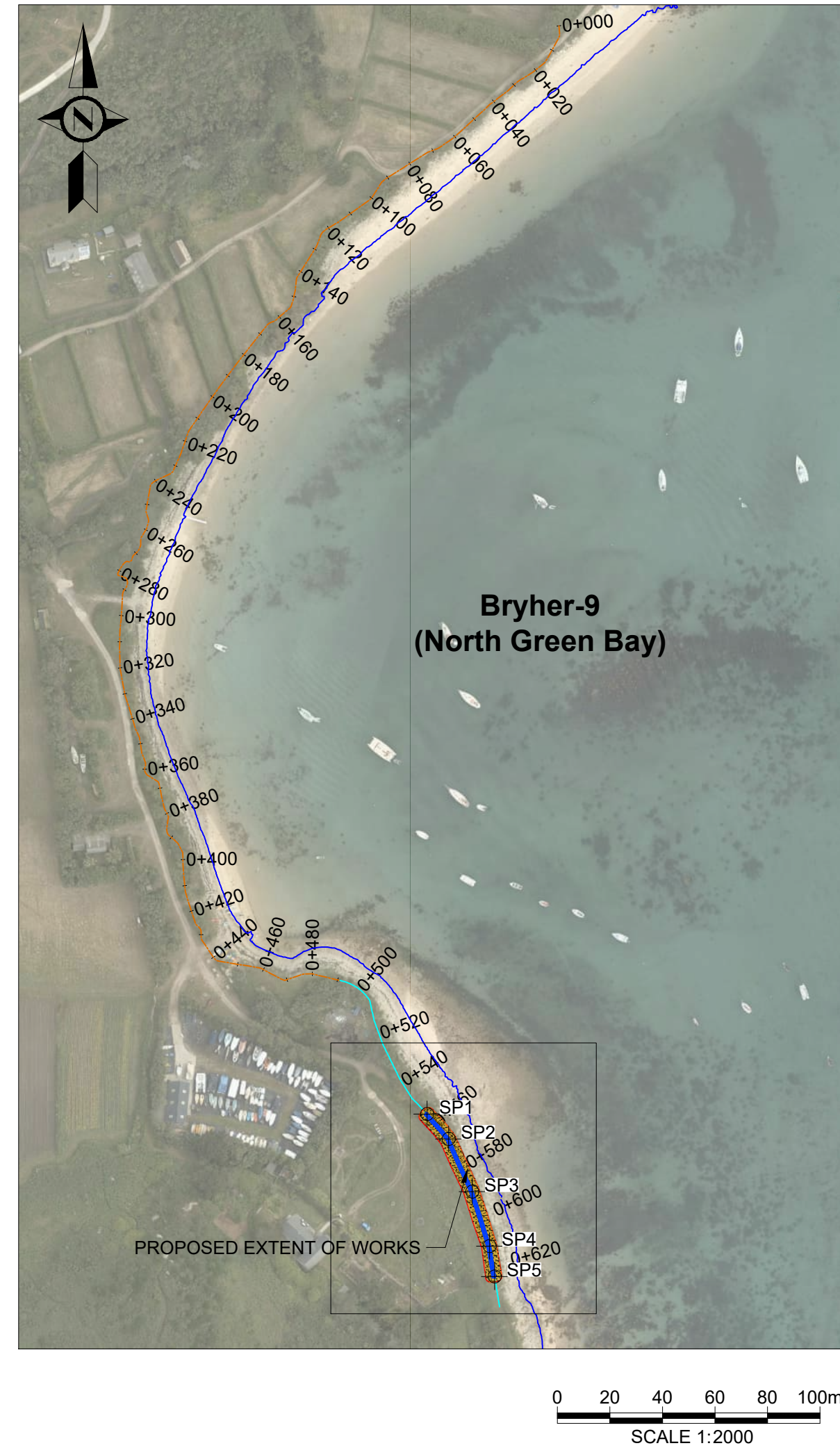
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DKR6499-210-D320

REV:
01

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 PGU
 20/07/22



LOCATION PLAN:



HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! SOFT AND UNSTABLE MATERIALS

KEY PLAN:



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6. CONTRACTOR TO CONFIRM DETAILS OF TIE INS TO EXISTING GROUND.
7. GEOBAG LINE TO BE CONFIRMED FOLLOWING SITE TOPOGRAPHIC SURVEY.
8. EXISTING TREES AND SHRUBS TO BE RETAINED WHERE POSSIBLE.
9. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
10. FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-210-D370.
11. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.
12. RADII AND ADDITIONAL SETTING OUT POINTS ARE NOT INCLUDED DUE TO UNCERTAINTY ON LEVELS.

LEGEND:

- GEOBAG
- BACKFILL
- MHWS= 2.77 mOD

SP1	Easting	Northing	Elevation
SP1	88.0065	14.4491	5.050
SP2	88.0147	14.4397	5.050
SP3	88.0237	14.4195	5.050
SP4	88.0303	14.3989	5.050
SP5	88.0323	14.3873	5.050

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www.hrwallingford.com

PROJECT:

**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:

**BRYHER-9 NORTH GREEN BAY
GENERAL ARRANGEMENT LAYOUT**

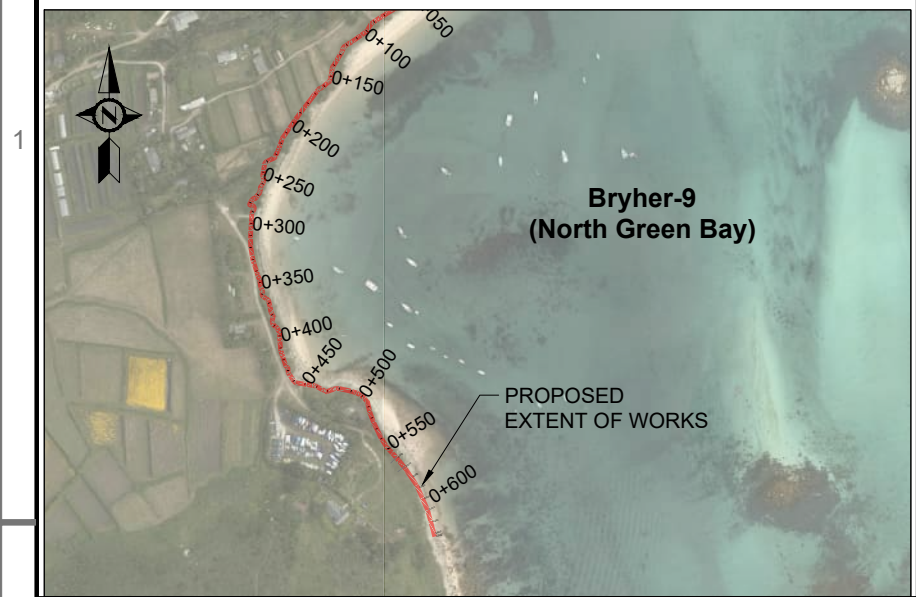
SCALE: AS SHOWN SHEET SIZE: A1

DRAWING No: DKR6499-210-D116 REV: 01

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KEY PLAN:

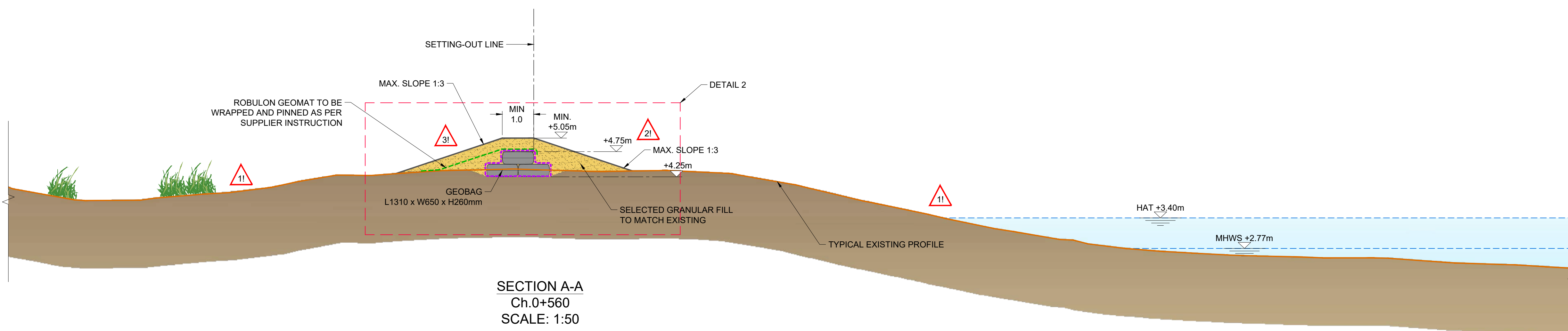


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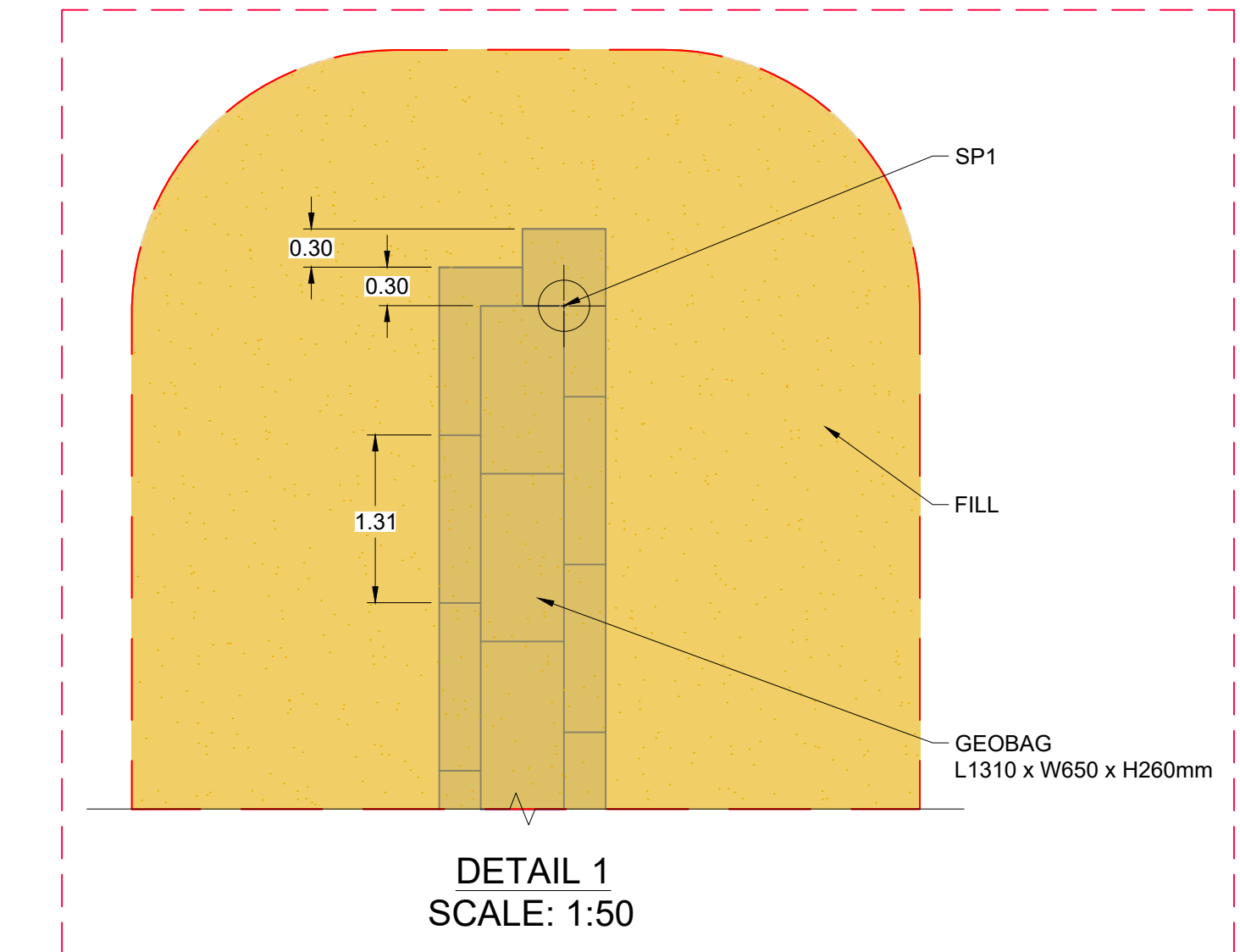
1. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
2. HORIZONTAL DATUM IS REFERENCED TO OSGB 1936 BRITISH NATIONAL GRID.
3. VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
4. SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED TOPOGRAPHIC SURVEYS SURVEYS.
5. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
6. CONTRACTOR TO CONFIRM DETAILS OF THE INS TO EXISTING GROUND.
7. BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.
8. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
9. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-210-D116.
10. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.
11. TYPICAL EXISTING PROFILES SHOWN IN SECTION A-A IS AT CHAINAGE 560 AND SECTION B-B IS AT CHAINAGE 600.
12. STATED GEOBAG DIMENSIONS ARE MINIMUM DIMENSIONS.

HAZARDS WARNING

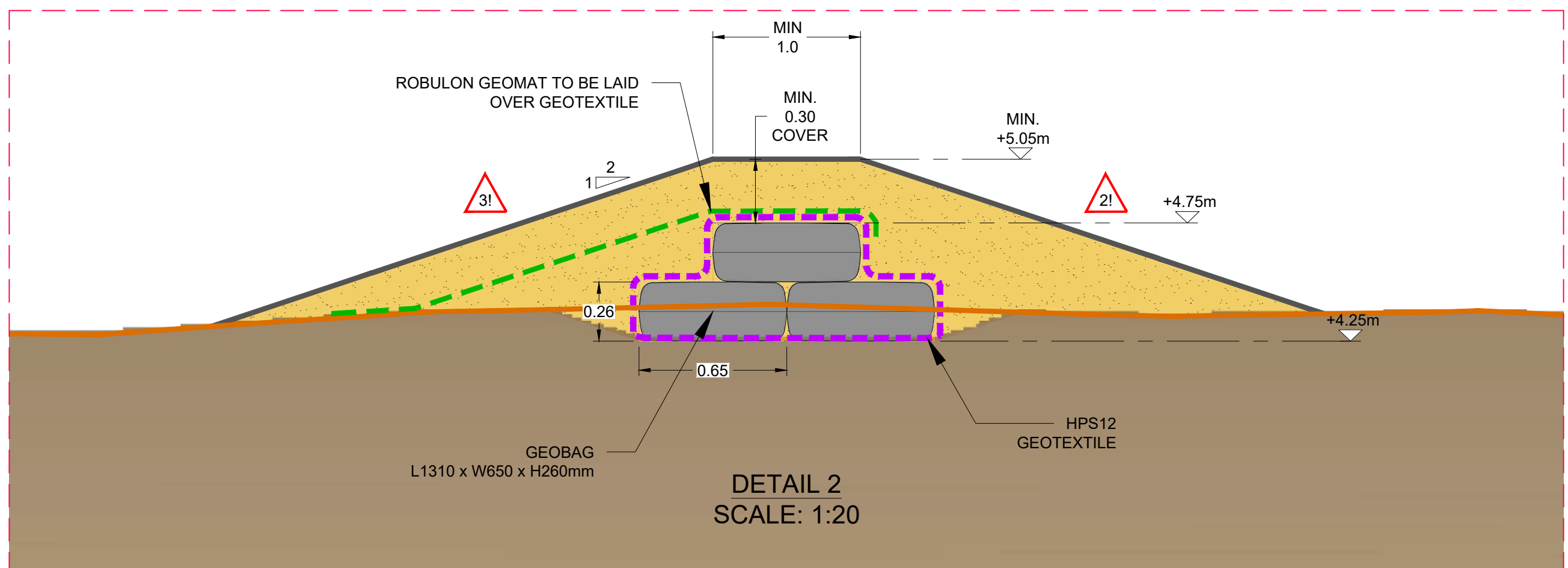
1! PUBLIC ACCESS TO BEACHES
 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
 3! SOFT AND UNSTABLE MATERIALS



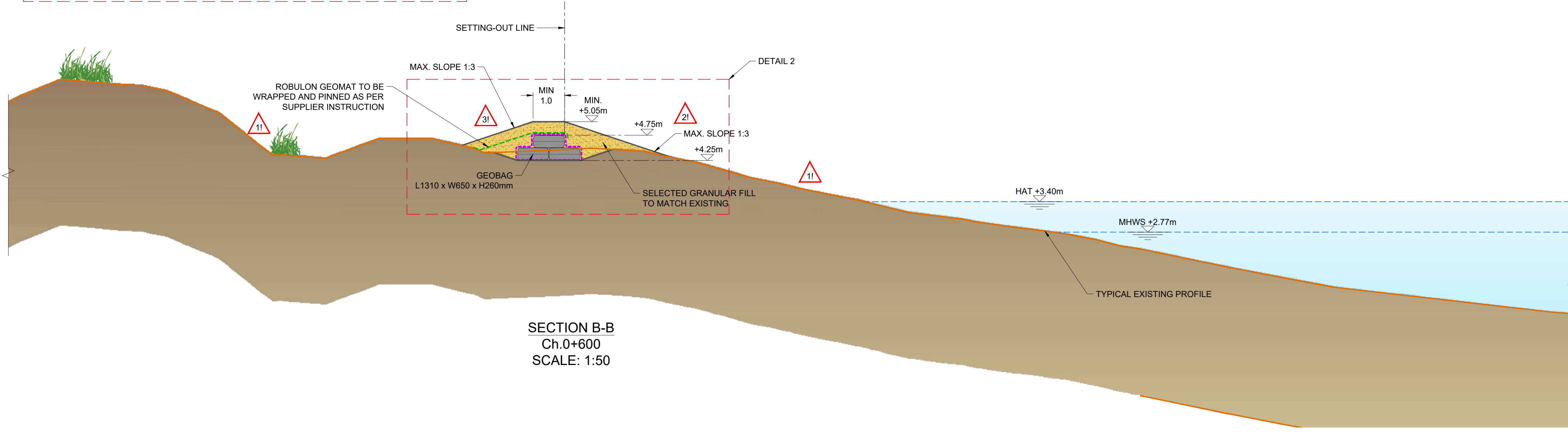
SECTION A-A
 Ch.0+560
 SCALE: 1:50



DETAIL 1
 SCALE: 1:50

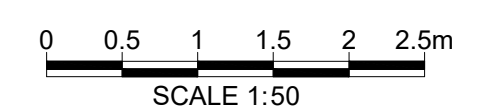


DETAIL 2
 SCALE: 1:20



SECTION B-B
 Ch.0+600
 SCALE: 1:50

TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



01	ISSUED FOR REVIEW	PGU	AGC	AUO	11 JUL 22
REV	DRAWING STATUS	DRN	APPR	AUTH.	DATE

CLIENT:

THE COUNCIL OF THE ISLES OF SCILLY

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PROJECT:

**ISLES OF SCILLY
 DESIGN SERVICES FOR OFF ISLANDS
 COASTAL EROSION DEFENCE AND
 DUNE MANAGEMENT**

DRAWING TITLE:

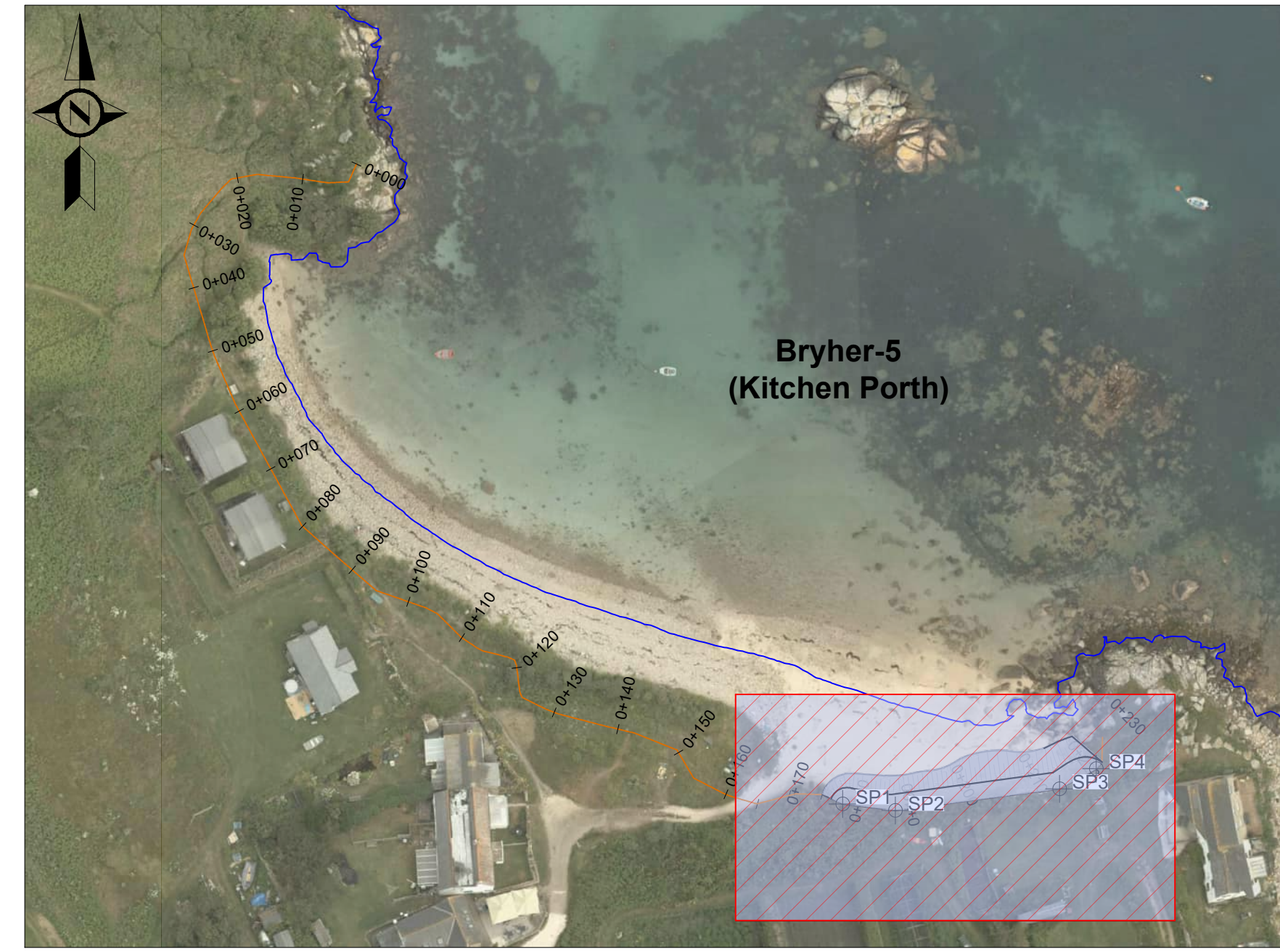
**BRYHER 9 - NORTH GREEN BAY
 DETAILS AND TYPICAL SECTIONS**

SCALE: JUST AS SHOWN SHEET SIZE: A1

DRAWING No: DKR6499-210-D370 REV: 01

I:\mva\local\projects\wdr\dkr6499-210-D370 [02.2]_Bryher 9-North Green Bay-Typical Section_01.dwg
 PGU
 12/07/22

KEY PLAN:



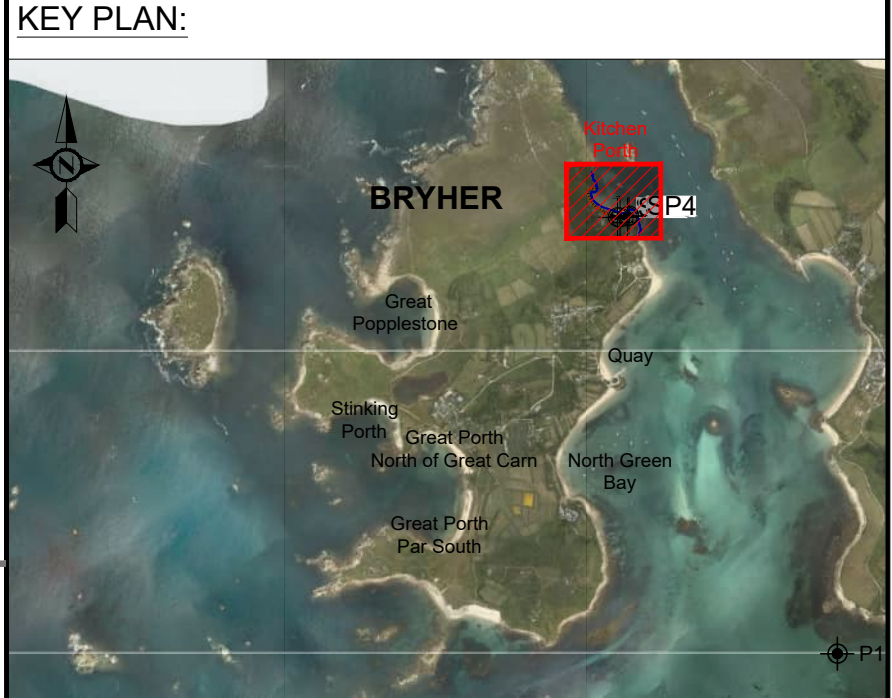
SCALE 1:1000

HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 4! LARGE ROCKS & VOIDS



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 3. VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
 4. SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED TOPOGRAPHIC SURVEYS.
 5. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
 6. CONTRACTOR TO CONFIRM DETAILS OF THE INS TO EXISTING GROUND.
 7. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 8. FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-210-D350.
 9. SIGNAGE WARNING OF DANGER ON CLIMBING ON ROCK TO BE PROVIDED AS PER EMPLOYERS REQUIREMENTS.
 10. RADII AND ADDITIONAL SETTING OUT POINTS ARE NOT INCLUDED DUE TO UNCERTAINTY ON LEVELS.

LEGEND:

- 1-3 TONNE ROCK
- MHWS=2.77 mOD

SP	Easting	Northing	Elevation
SP1	88.1035	15.4431	VARIABLES
SP2	88.1115	15.4422	VARIABLES
SP3	88.1364	15.4454	VARIABLES
SP4	88.1420	15.4485	VARIABLES

01	ISSUED FOR APPROVAL	WST	AGC	AUO	27 JUN 22
REV	DRAWING STATUS	DRN	APPR	AUTH.	DATE

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PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**BRYHER-5 KITCHEN PORTH
GENERAL ARRANGEMENT LAYOUT**

SCALE:
AS SHOWN

SHEET SIZE:
A1

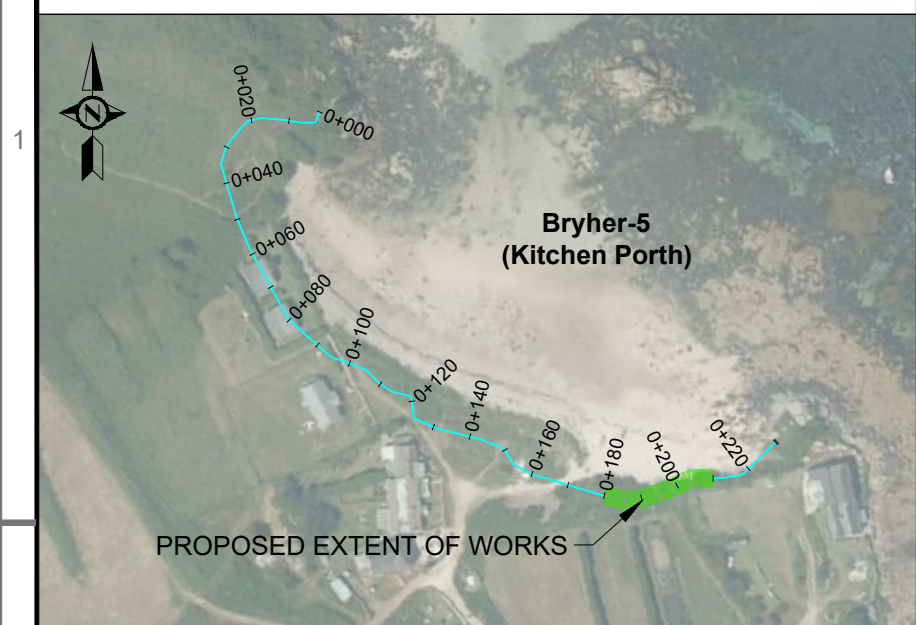
DRAWING No:
DKR6499-210-D114

REV:
01

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KEY PLAN:

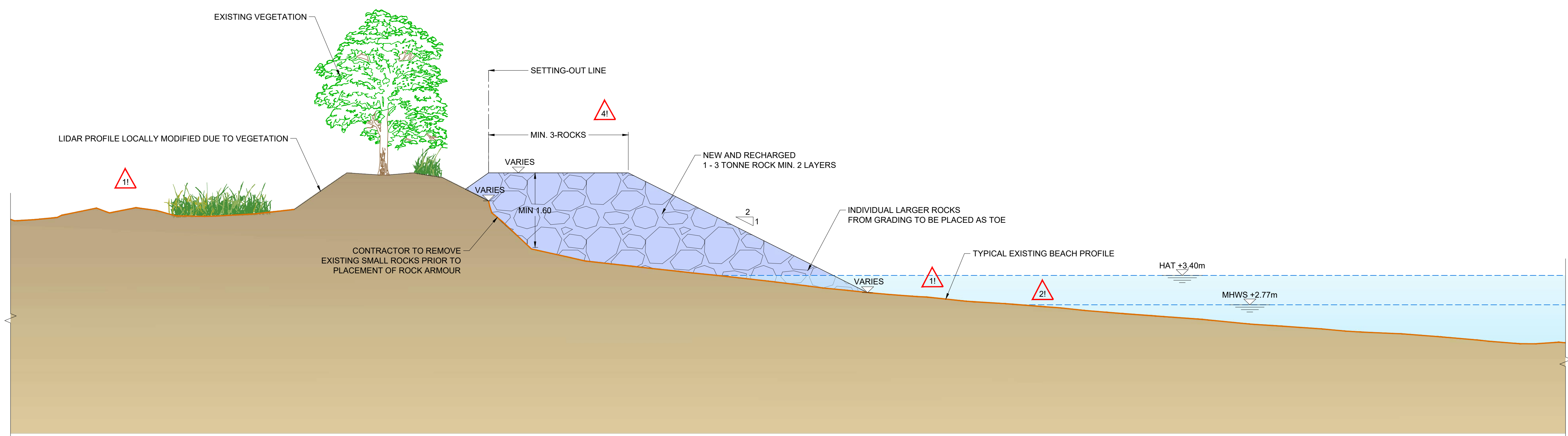


NOTES:

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3. VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
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5. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
6. BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.
7. EXISTING MASONRY WALL SECTION SHOWN IS ILLUSTRATIVE OF A FIXED STRUCTURE ONLY.
8. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
9. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-210-D114.
10. TYPICAL EXISTING BEACH PROFILE SHOWN IS AT CHAINAGE 180.

HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 4! LARGE ROCKS & VOIDS



SECTION A-A
Ch.0+200

TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



01	ISSUED FOR APPROVAL	WST	AGC	AJO	27 JUN 22
REV	DRAWING STATUS	DRN	APPR	AUTH	DATE

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PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**BRYHER 5 - KITCHEN PORTH
TYPICAL SECTION**

SCALE:
1:50

SHEET SIZE:
A1

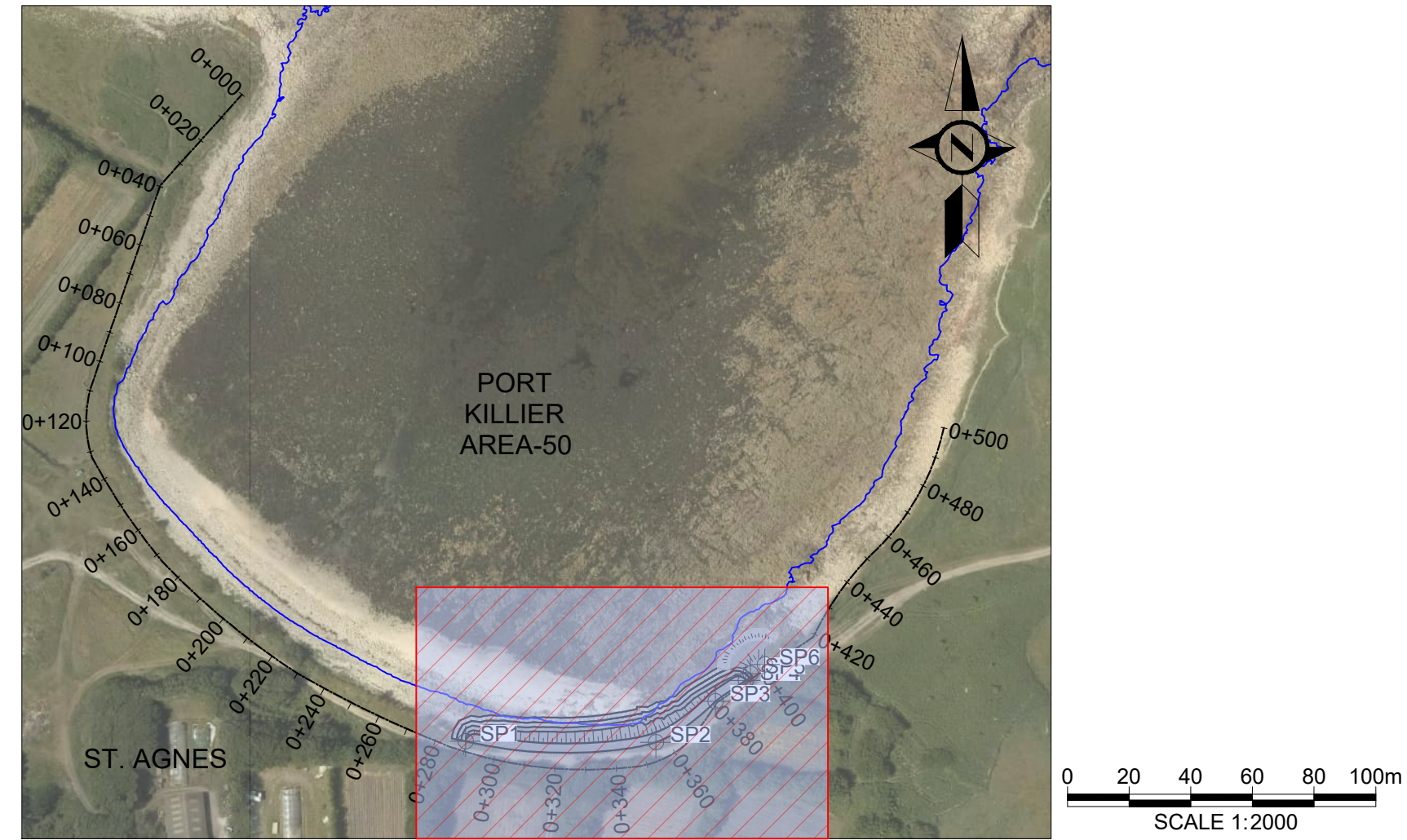
DRAWING No:
DKR6499-210-D350

REV:
01

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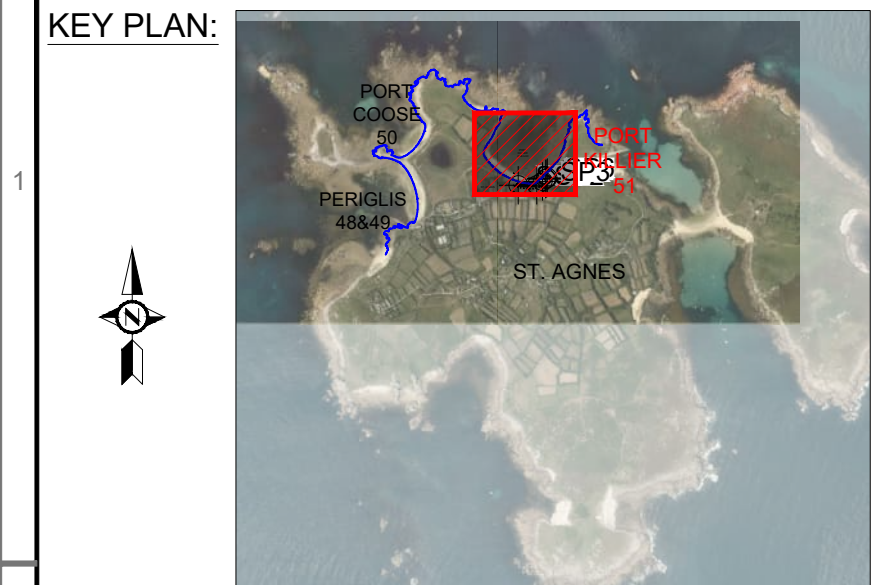
WST
27/06/22

LOCATION PLAN:



HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! UNKNOWN DETAIL OF EXISTING WALL
- 4! LARGE ROCKS & VOIDS



- NOTES:
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 - SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED SURVEYS.
 - FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 - FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-110-D330.
 - BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.

LEGEND:

- COBBLE/SAND
- 1 - 3 TONNE ROCK
- ASSUMED WALL LINE
- MHWS = 2.77 mOD

SP	Easting	Northing	Elevation
SP1	88.0756	8.4606	5.000
SP2	88.1373	8.4604	5.000
SP3	88.1566	8.4736	5.000
SP4	88.1664	8.4804	5.000
SP5	88.1679	8.4826	5.700
SP6	88.1726	8.4856	5.700



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REV	DRAWING STATUS	DRN.	APPR	AUTH.	DATE

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PROJECT:

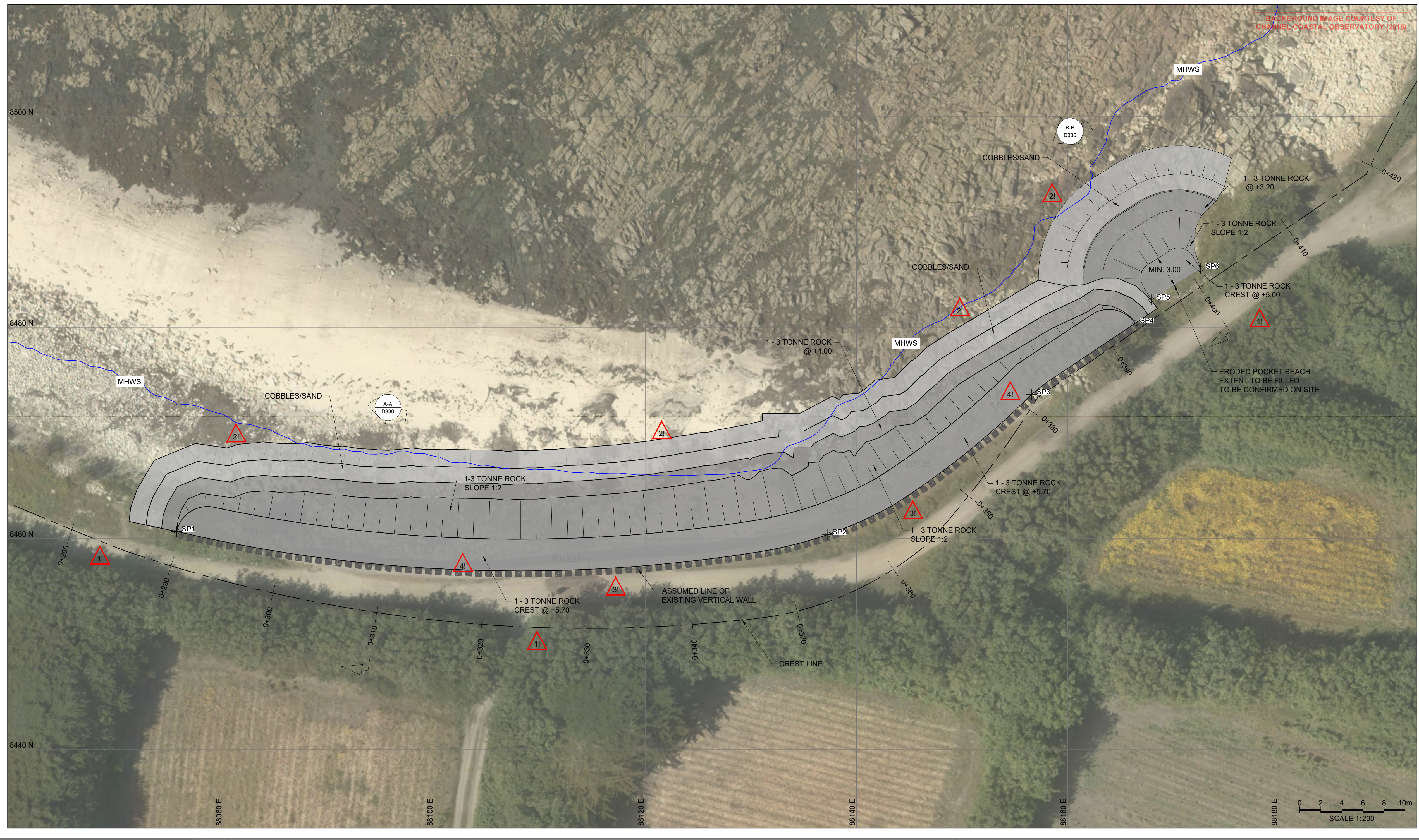
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:

**ST. AGNES 51 - PORT KILLIER
GENERAL ARRANGEMENT LAYOUT**

SCALE: AS SHOWN SHEET SIZE: A1

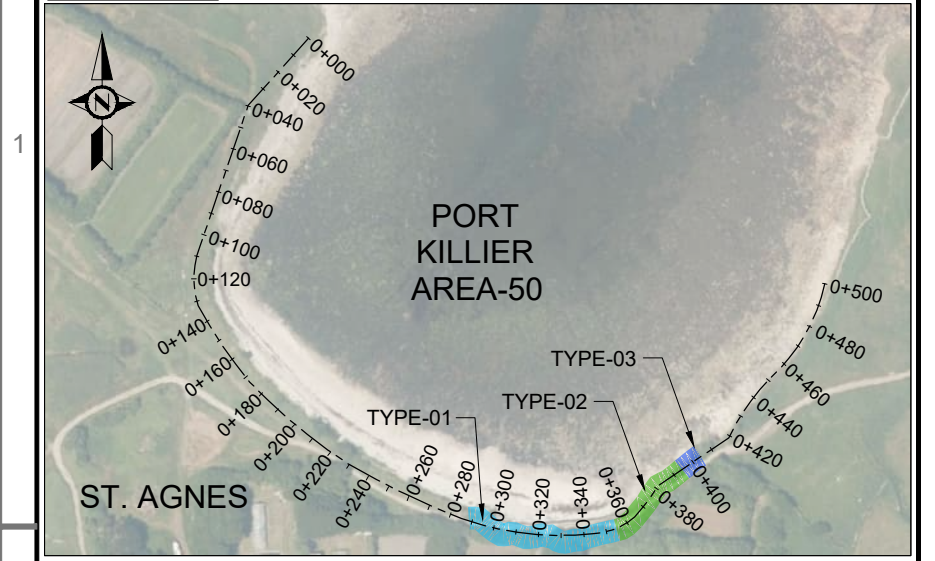
DRAWING No: DKR6499-110-D112 REV: 01



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 PGU
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KEY PLAN:

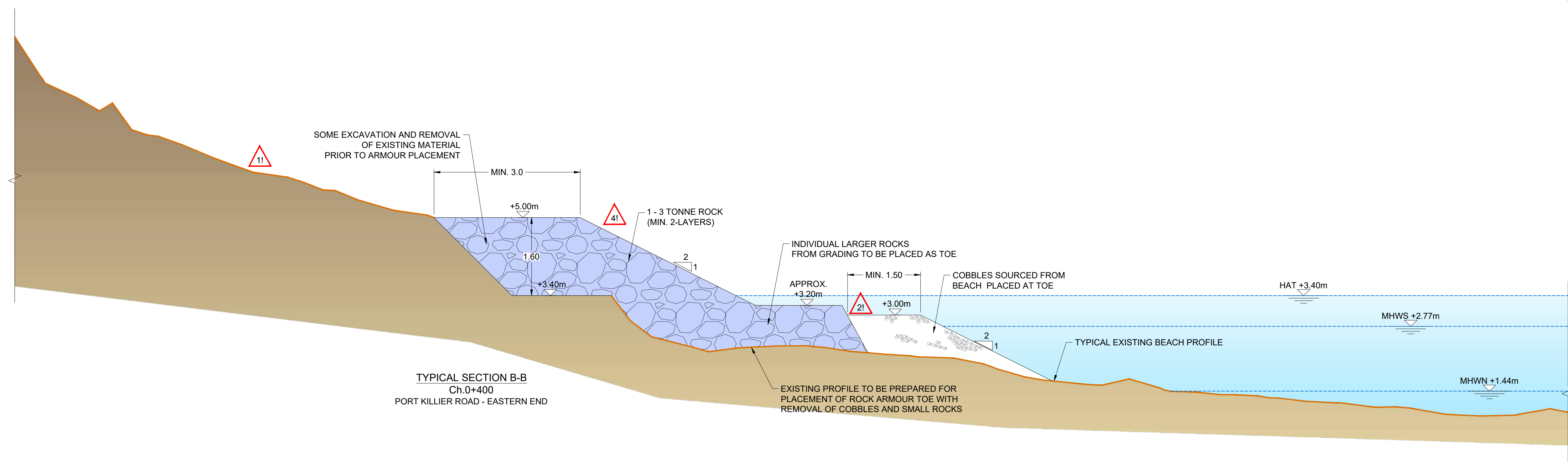
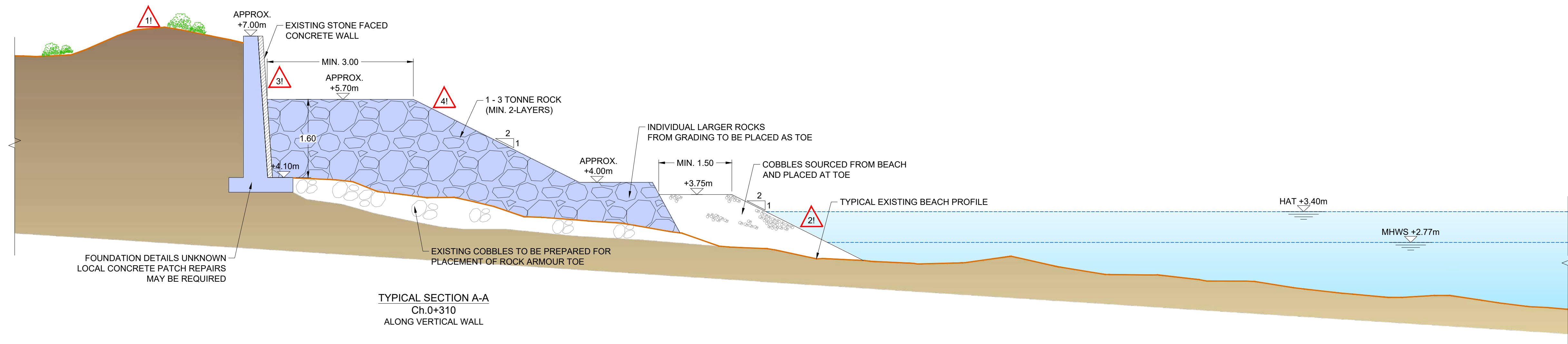


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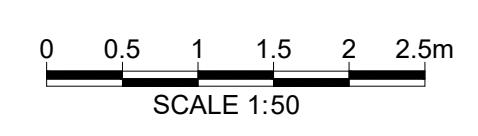
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5. SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED SURVEYS.
6. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
7. EXISTING WALL SECTION SHOWN IS ILLUSTRATIVE OF A FIXED STRUCTURE ONLY.
8. SOURCES FOR SAND AND COBBLES TO BE APPROVED BY THE ENGINEER.
9. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
10. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-110-D112.

HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! UNKNOWN DETAIL OF EXISTING WALL
- 4! LARGE ROCKS & VOIDS



TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



01	ISSUED FOR APPROVAL	PGU	AGC	AUO	09 SEP 22
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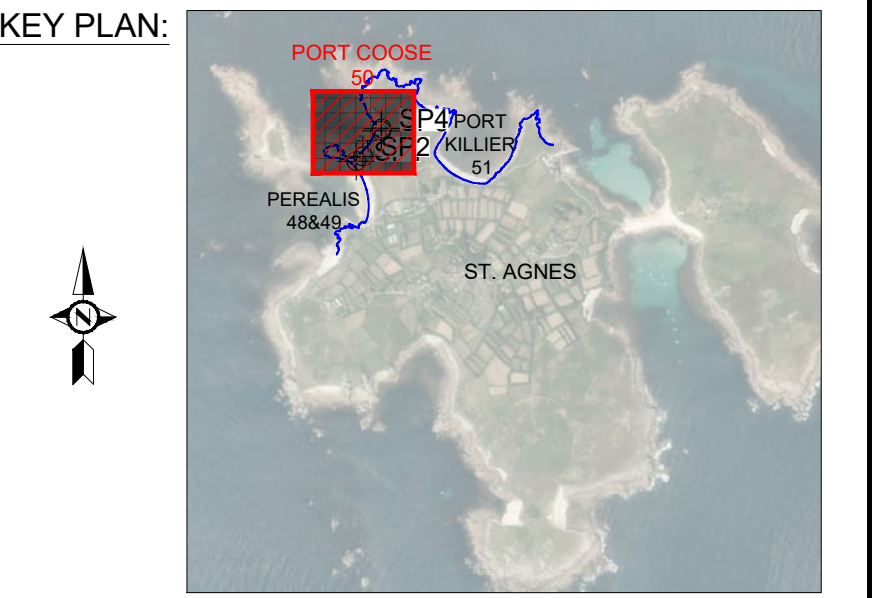
PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**ST. AGNES - PORT KILLIER 51 -
TYPICAL SECTIONS**

SCALE: 1:50	SHEET SIZE: A1
DRAWING No: DKR6499-110-D330	REV: 01

I:\work\local\projects\110-D330\110-D330_021_Si-Agnes-Port Killier 51-Rock Toe Protection Typical Section_00_01.dwg
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 - FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 - FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-110-D320.
 - BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.

- LEGEND:**
- GEOMAT
 - ROCK BAG
 - FOOTPATH
 - MHWS

SP	Easting	Northing	Elevation
SP1	87.7023	8.5400	7.300
SP2	87.7247	8.5560	7.300
SP3	87.7851	8.6404	7.300
SP4	87.7859	8.6479	7.300

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PROJECT:

**ISLES OF SCILLY
 DESIGN SERVICES FOR OFF ISLANDS
 COASTAL EROSION DEFENCE AND
 DUNE MANAGEMENT**

DRAWING TITLE:

**ST. AGNES 50 - PORT COOSE -
 GENERAL ARRANGEMENT LAYOUT**

SCALE: 1:500 SHEET SIZE: A1

DRAWING No: DKR6499-110-D111 REV: 01



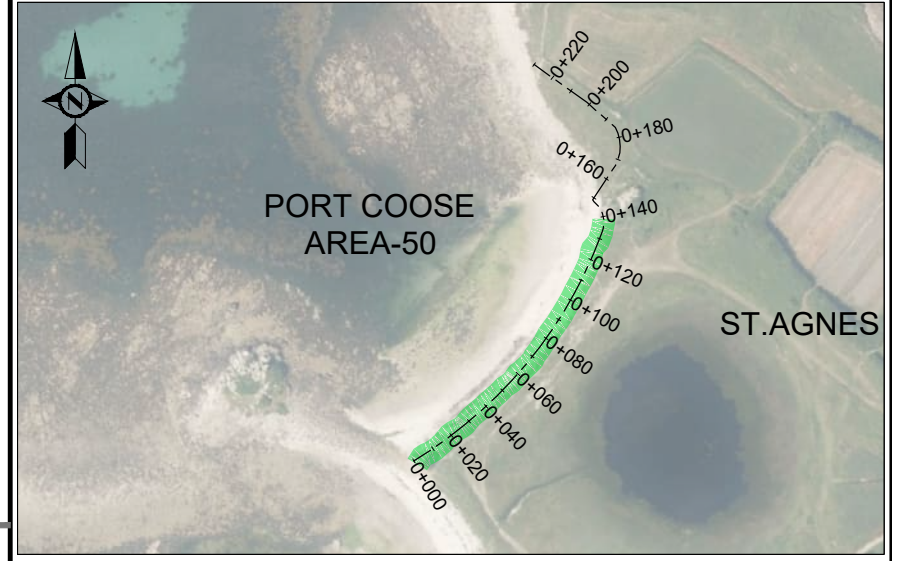
HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! SOFT AND UNSTABLE MATERIALS
- 4! UNKNOWN DETAIL OF EXISTING SLOPE PROTECTION.

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KEY PLAN:

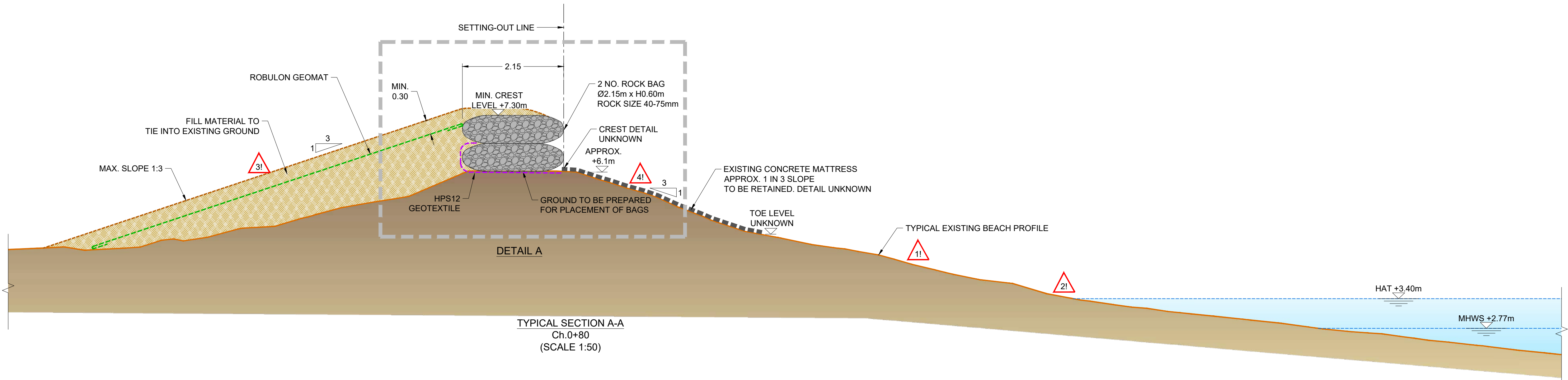


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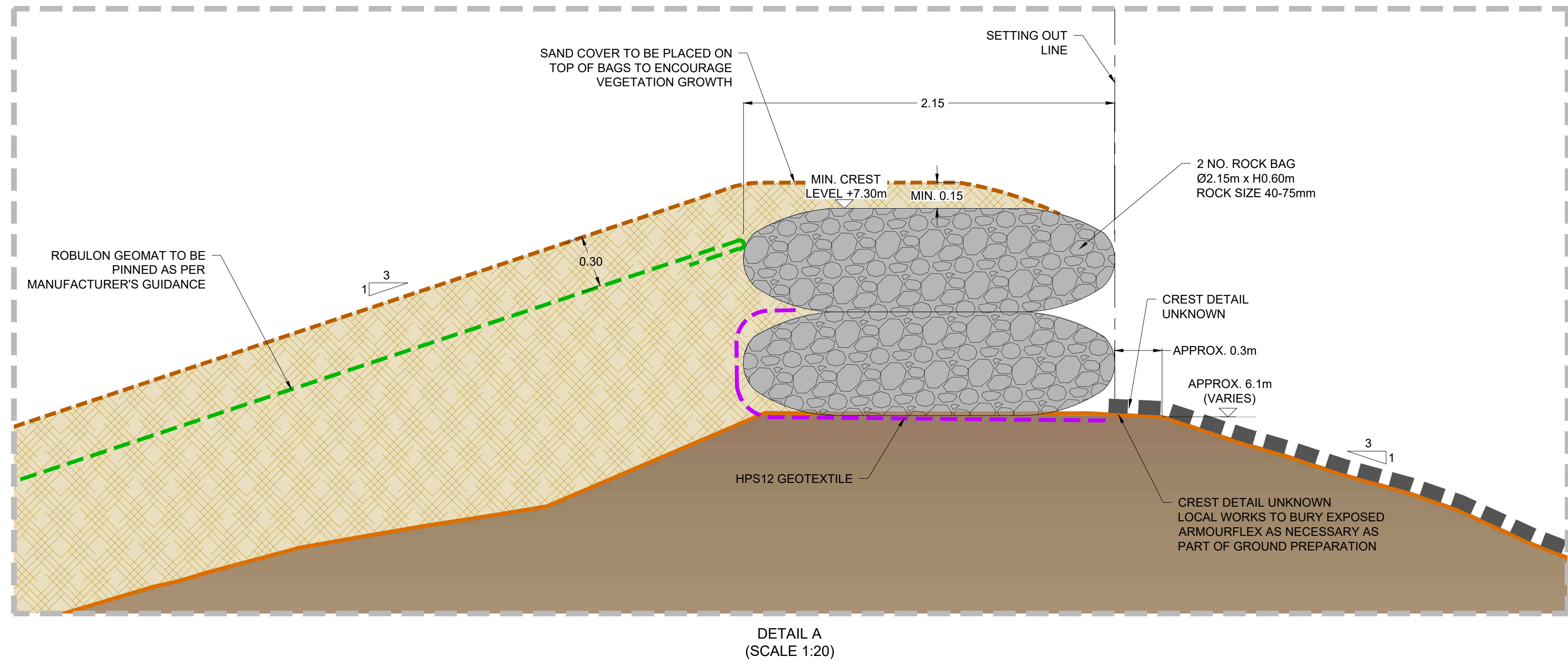
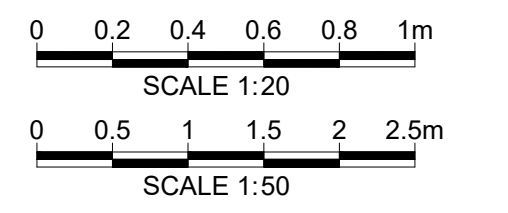
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3. VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
4. BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.
5. SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED SURVEYS.
6. ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
7. FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
8. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-110-D111.
9. ROCK BAGS TO BE 2 TONNE SALIX ROCK BAGS OR SIMILAR APPROVED PRODUCT TO BE PREFILLED.

HAZARDS WARNING

- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! SOFT AND UNSTABLE MATERIALS
- 4! UNKNOWN DETAIL OF EXISTING SLOPE PROTECTION.



TIDE LEVELS	
	mOD
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



01	ISSUED FOR APPROVAL	PGU	AGC	AUO	09 SEP 22
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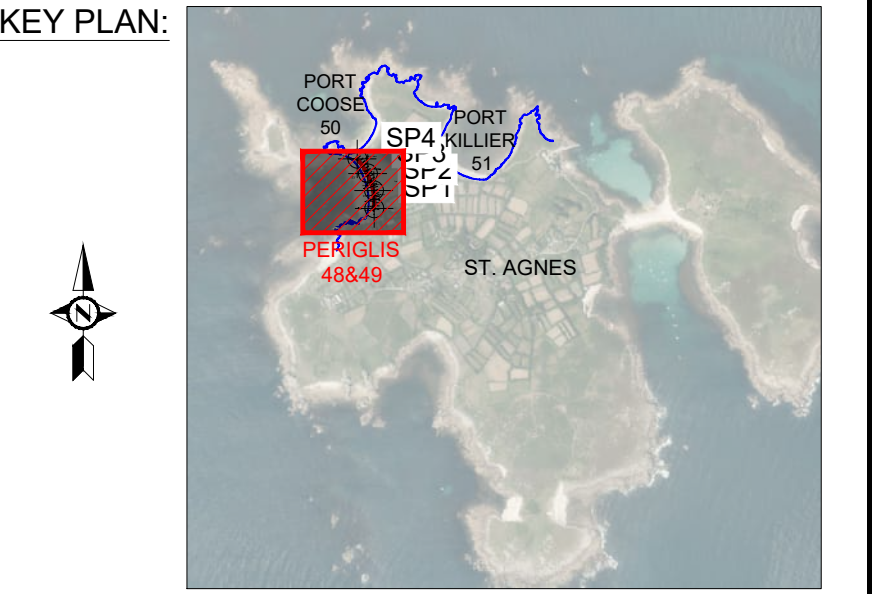
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PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**ST. AGNES - PORT COOSE 50 -
TYPICAL SECTION**

SCALE: VARIES	SHEET SIZE: A1
DRAWING No: DKR6499-110-D320	REV: 01

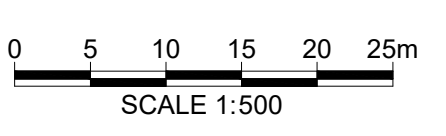
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 - FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-110-D310.
 - BACKGROUND IMAGE REPRODUCED FROM BING MAPS, © 2021 MICROSOFT.

- LEGEND:**
- FILL
 - GEOBAG
 - FOOTPATH
 - MHWS = 2.77 mOD

SP	Easting	Northing	Elevation
SP1	87.7615	8.3708	7.500
SP2	87.7601	8.4299	7.500
SP3	87.7400	8.4861	7.500
SP4	87.7060	8.5348	7.500



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PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**ST. AGNES 48&49 PERIGLIS
GENERAL ARRANGEMENT LAYOUT**

SCALE: 1:500 SHEET SIZE: A1
DRAWING No: DKR6499-110-D110 REV: 01

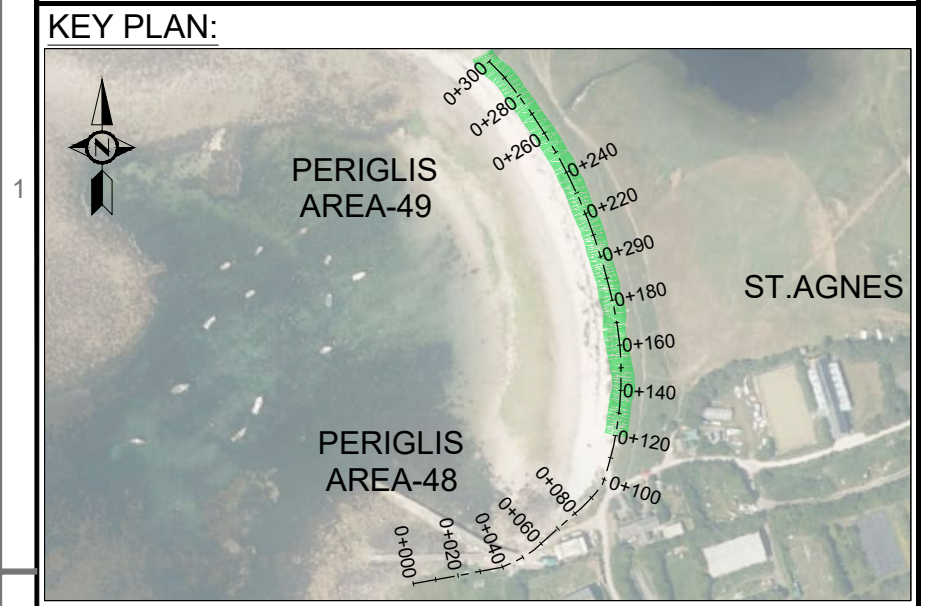


14/09/22 WST
 \\hrw\uk\local\projects\live\dkr6499\5. deliverables\drawings\Current Drawings\DKR6499-110-D110 [01]_General Arrangement-SI-Agnes-Periglis 48&49_00_0.3.dwg

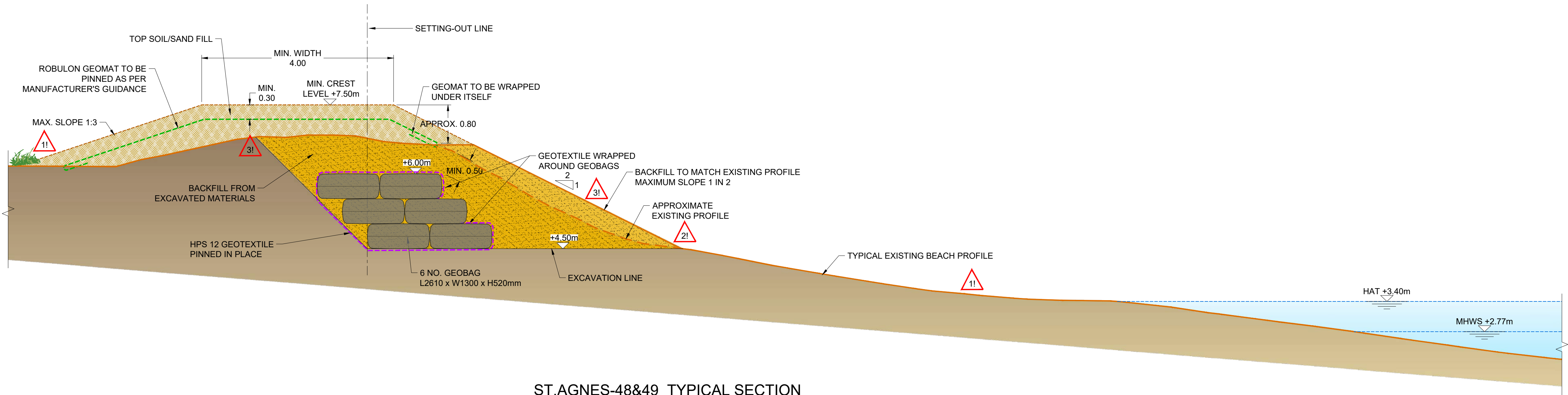
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 3! SOFT AND UNSTABLE MATERIALS

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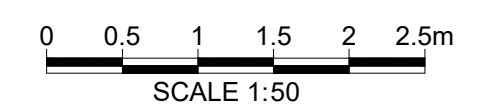


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 8. FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-110-D110.



ST.AGNES-48&49_TYPICAL SECTION
 From Ch.0+140

TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



01	ISSUED FOR APPROVAL	PGU	AGC	AUO	09 SEP 22
REV	DRAWING STATUS	DRN.	APPR	AUTH.	DATE

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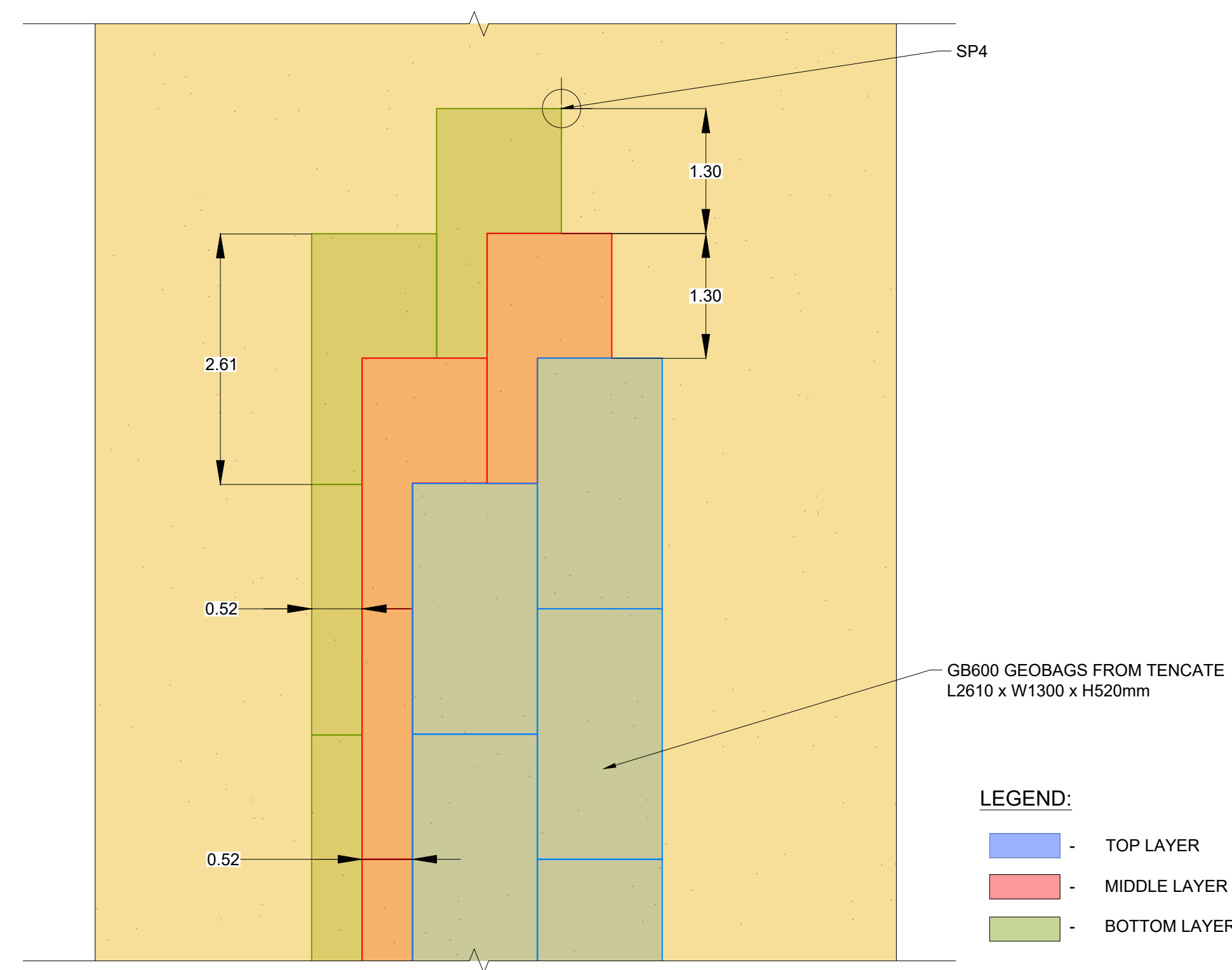
**ISLES OF SCILLY
 DESIGN SERVICES FOR OFF ISLANDS
 COASTAL EROSION DEFENCE AND
 DUNE MANAGEMENT**

DRAWING TITLE:

**ST. AGNES - PERIGLIS 48&49 -
 TYPICAL SECTION AND DETAIL**

SCALE: 1:50 SHEET SIZE: A1

DRAWING No: DKR6499-110-D310 REV: 01



LEGEND:

- TOP LAYER
- MIDDLE LAYER
- BOTTOM LAYER

DETAIL 1
 SCALE: 1:50

I:\hr\uk\local\projects\110-D310 [02] St.Agnes-Periglis 48&49-Ridge Protection Typical Section_00_01.dwg
 09/09/22 PGU



SP	Easting	Northing	Elevation
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SP2	91.4971	16.0081	0.000
SP3	91.4972	16.0077	0.000
SP4	91.5520	16.0043	0.000
SP5	91.5547	16.0085	0.000
SP6	91.4960	16.0115	0.000
SP7	91.4940	16.0117	0.000
SP8	91.4966	16.0165	0.000
SP9	91.4946	16.0167	0.000
SP10	91.4937	16.0187	0.000
SP11	91.4937	16.0207	0.000
SP12	91.5011	16.0208	0.000
SP13	91.4970	16.0246	0.000

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[HTTPS://WWW.RECYCLEDPLASTICBUILDINGMATERIALS.CO.UK/ DRAINAGE-AND-GROUND-REINFORCEMENT.HTML](https://www.recycledplasticbuildingmaterials.co.uk/drainage-and-ground-reinforcement.html)
 - FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 - FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-310-D310.
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[HTTPS://FAUNTRACKWAY.CO.UK/ACCESS/BOAT-RAMP-KIT](https://fauntrackway.co.uk/access/boat-ramp-kit). TO BE SUPPLIED WITH PUSHBAR AND STAPS.

- LEGEND:**
- EROSION PROTECTION SURFACING AREA
 - DUNE FENCING
 - REMOVABLE SLIPWAY
 - MHWS=2.77 mOD
 - TELECOMMUNICATIONS CABLES
 - ELECTRICITY CABLES

01	ISSUED FOR REVIEW	PGU	AGC	AUO	10 AUG 22
REV	DRAWING STATUS	DRN	APPR	AUTH	DATE

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COASTAL EROSION DEFENCE AND
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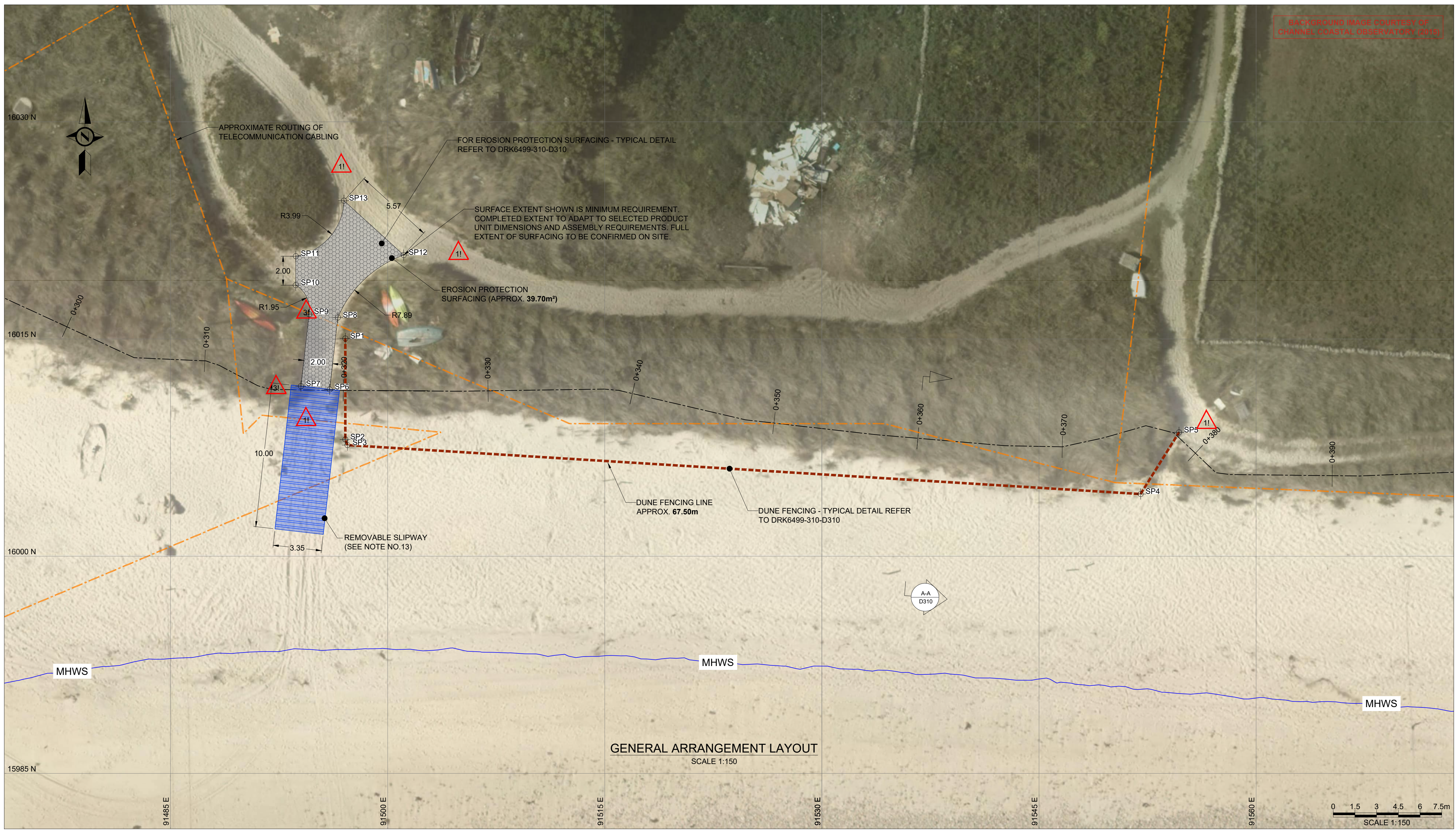
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**ST. MARTIN'S - 26&27
GENERAL ARRANGEMENT LAYOUT**

SCALE:
AS SHOWN

SHEET SIZE:
A1

DRAWING No:
DKR6499-310-D110

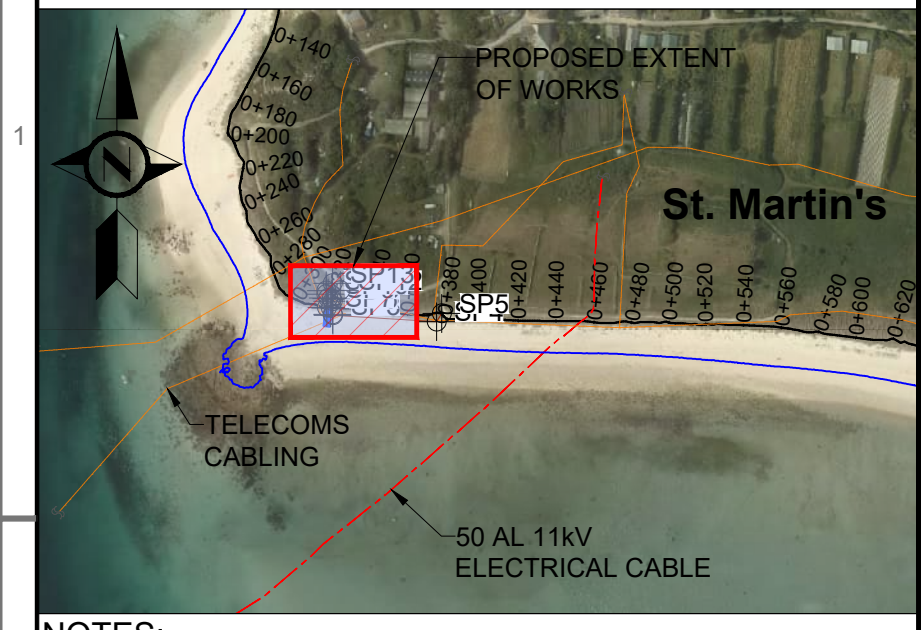
REV:
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 26&27_00_01.dwg
 09/08/22
 AGC

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KEY PLAN:



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- SURFACING CONSTRUCTION DETAIL AND GEOGRID TO BE CONFIRMED BY SELECTED SUPPLIER.
- DUNE FENCING TO BE SEMI PERMEABLE WOODEN FENCING APPROVED BY ENGINEER.
- DUNE FENCING TO BE INSTALLED AS PER SUPPLIER'S REQUIREMENTS.
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TIDE LEVELS	
mOD	
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m

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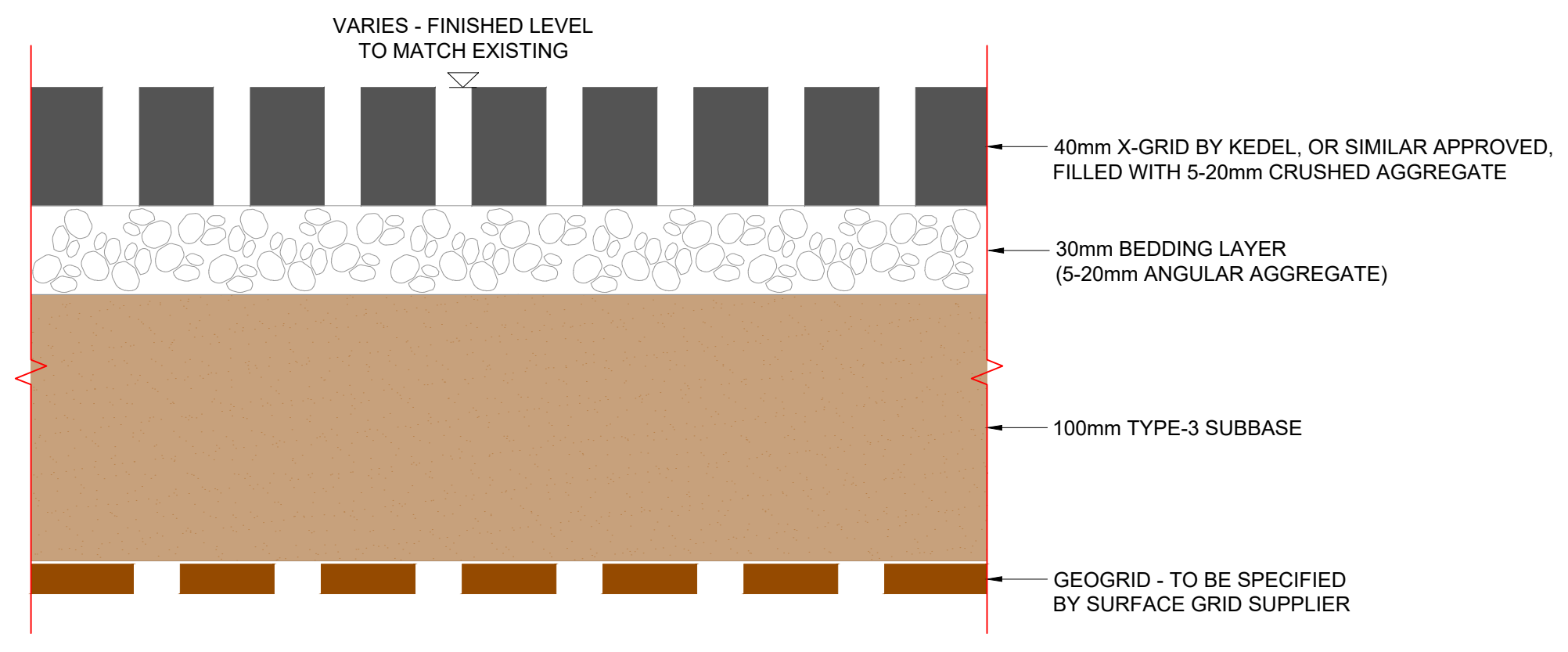
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**ST. MARTIN'S - 26&27
SECTIONS AND TYPICAL DETAILS**

SCALE:
AS SHOWN

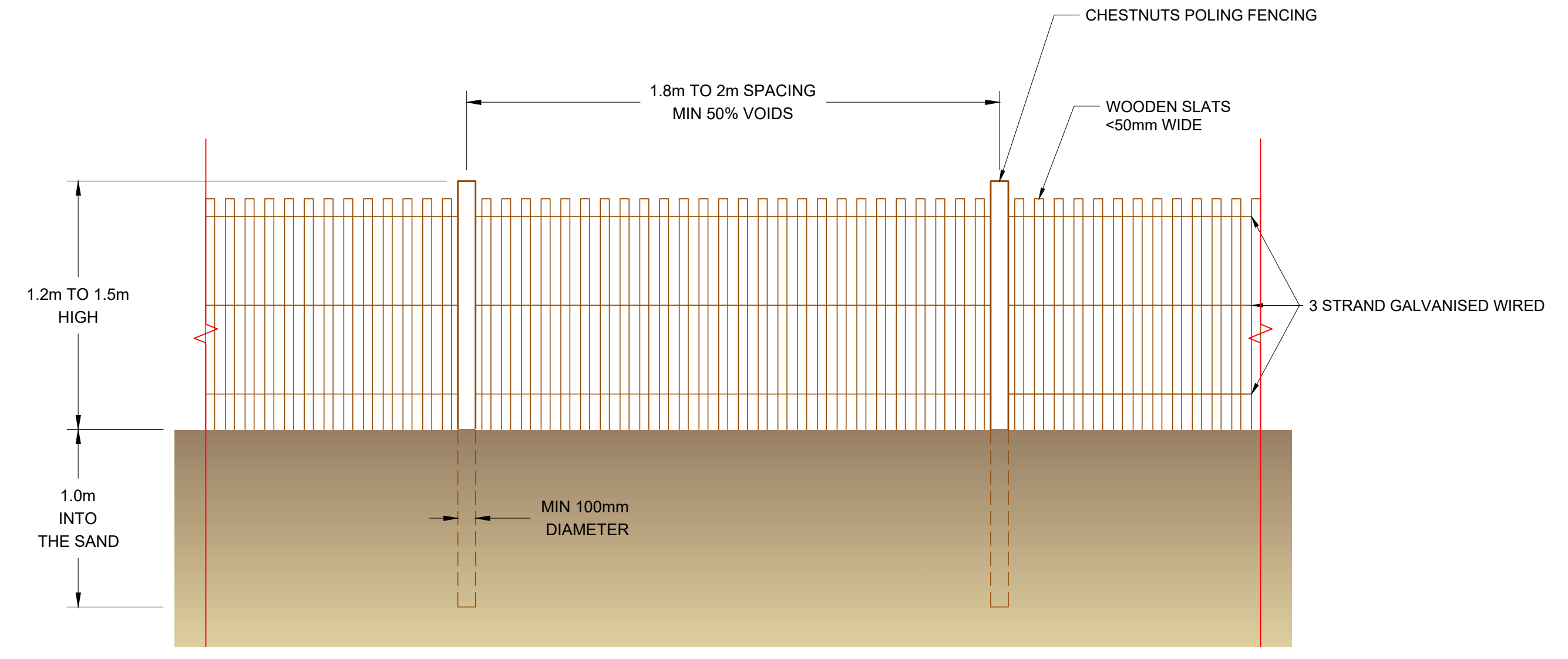
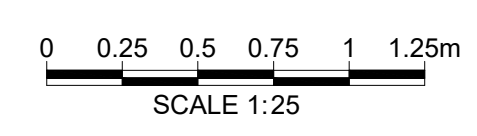
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DRAWING No:
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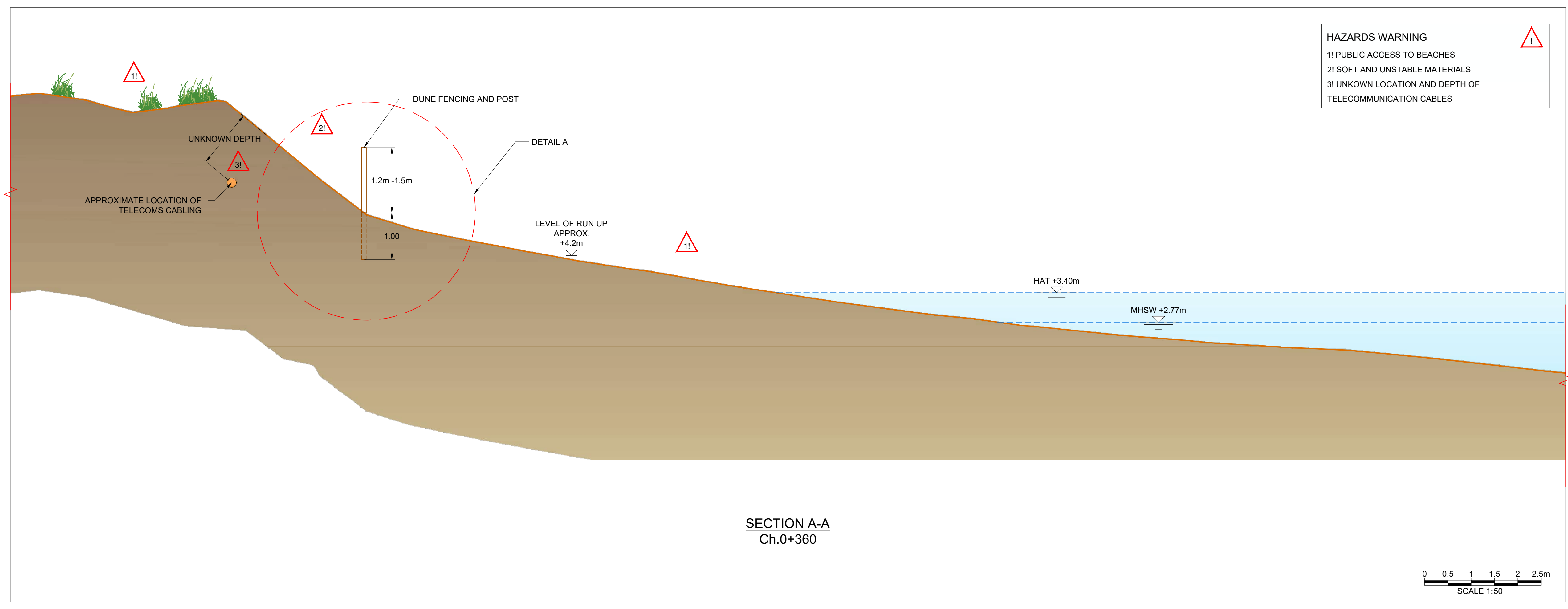
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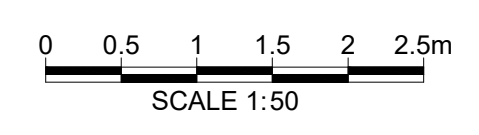
EROSION PROTECTION SURFACING - TYPICAL DETAIL
SCALE 1:2



DETAIL A - TYPICAL DUNE FENCING DETAIL
SCALE 1:25



**SECTION A-A
Ch.0+360**



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 26&27_00_01.dwg
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Isles of Scilly Sea Defences Outline Construction Environmental Management Plan

Final Report

November 2022

www.jbaconsulting.com



Council of the
ISLES OF SCILLY

JBA Project Manager

Harriet Thomlinson
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Revision History

Revision Ref/Date	Amendments	Issued to
November 2022	Final Report	CIoS

Contract

This report describes work commissioned by The Council of the Isles of Scilly. JBA Consulting carried out this work.

Prepared by Harriet Thomlinson BA MSc MIEMA CEnv
 Senior Environmental Consultant

Reviewed by Tim Carter BSc MSc CMLI MIEMA CEnv
 Technical Director

Purpose

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1.2	Roles	1
1.3	Environmental audits	1
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Figure 1: Site locations within the Isles of Scilly

2

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Table 3-1: Outline Construction Environmental Management Plan

8

1 Introduction

1.1 Purpose

The Council of the Isles of Scilly (CIoS) is proposing to construct new coastal erosion and flood protection works at nine sites on islands off the Isles of Scilly. Five of these sites are located on the island of Bryher: Great Popplestone, Stinking Porth, Great Porth (Great Par) North of Great Carn, Green Bay, and Kitchen Porth. Three of these sites are located on the island of St Agnes: Porth Killier, Porth Coose and Periglis. One site is location on the island of St Martin's, Lower Town Beach.

This Outline Construction Environmental Management Plan (CEMP) summarises the key construction-phase and operational environmental management and mitigation actions for the proposed project as identified in the associated Environmental Statement (ES) report. It sets out environmental management objectives and associated actions to be delivered during construction of the developments, and post-construction, and assigns these to specific members of the team responsible for the delivery of the project.

1.2 Roles

For each environmental management action, the appropriate project team member with responsibility for ensuring that action is implemented is identified. Monitoring of the actions identified in the CEMP would be undertaken by the appointed construction contractor(s), although it is recommended support is provided by an Ecological Clerk of Works (ECoW). This CEMP may be used by the contractor(s) when implementing their own Environmental Management Systems (EMS).

1.3 Environmental audits

It is recommended that site audits are undertaken by the contractor(s) on a regular basis, to ensure compliance with planning conditions and regulatory requirements.

1.4 Environmental incident reporting

As part of any contractor(s)' EMS, any environmental issues or incidents would be reported using their incident reporting system.

2 The sites, environmental receptors, and scheme proposals

2.1 Scheme backgrounds

The Isles of Scilly are located 40km off the south west coast of Cornwall in the Atlantic Ocean. There are over 200 islands in the archipelago, of which the five largest are inhabited. The area is also an area of great environmental importance, and it carries many environmental designations. The whole archipelago is designated as an Area of Outstanding Natural Beauty and as a Conservation Area.

Due to their exposed location in the Atlantic, the Isles of Scilly are very exposed to storms and storm surges. This, coupled with the fact that much of the housing stock, commercial property, critical infrastructure and freshwater resources are located either on low-lying ground or close to the coast, mean that the Isles of Scilly are very vulnerable to the impacts of climate change, sea level rise and coastal erosion.

The proposed works comprise of coastal defences at nine sites across three islands. Five sites are located on the island of Bryher (Great Popplestone, Stinking Porth, Great Porth (Great Par) North of Great Carn, Green Bay, and Stinking Porth. Three of the sites are located on the island of St Agnes (Porth Killier, Porth Coose and Periglis). One site is located on the island of St Martin's, Lower Town Beach (see Figure 1). The proposals meet the following aims of flood risk management on the islands:

- To increase protection of critical economic, social and environmental infrastructure on the islands of Bryher, St Agnes and St Martin's;
- To mitigate the impact of climate change, sea level rise, inundation and erosion on the islands and its communities;
- To manage risks to the island communities from flooding and erosion, supporting their adaptation and development of resilience;
- To help in the establishment of a long-term action plan which helps minimise and reduce the reliance on defences in the future;
- To support the essential diverse character of the landscape and seascape of the islands;
- To support conservation values and minimise impacts on biodiversity and habitats while allowing an adaptive response to climate change; and
- To support the adaptation and resilience of transport links between the islands as well as the mainland.

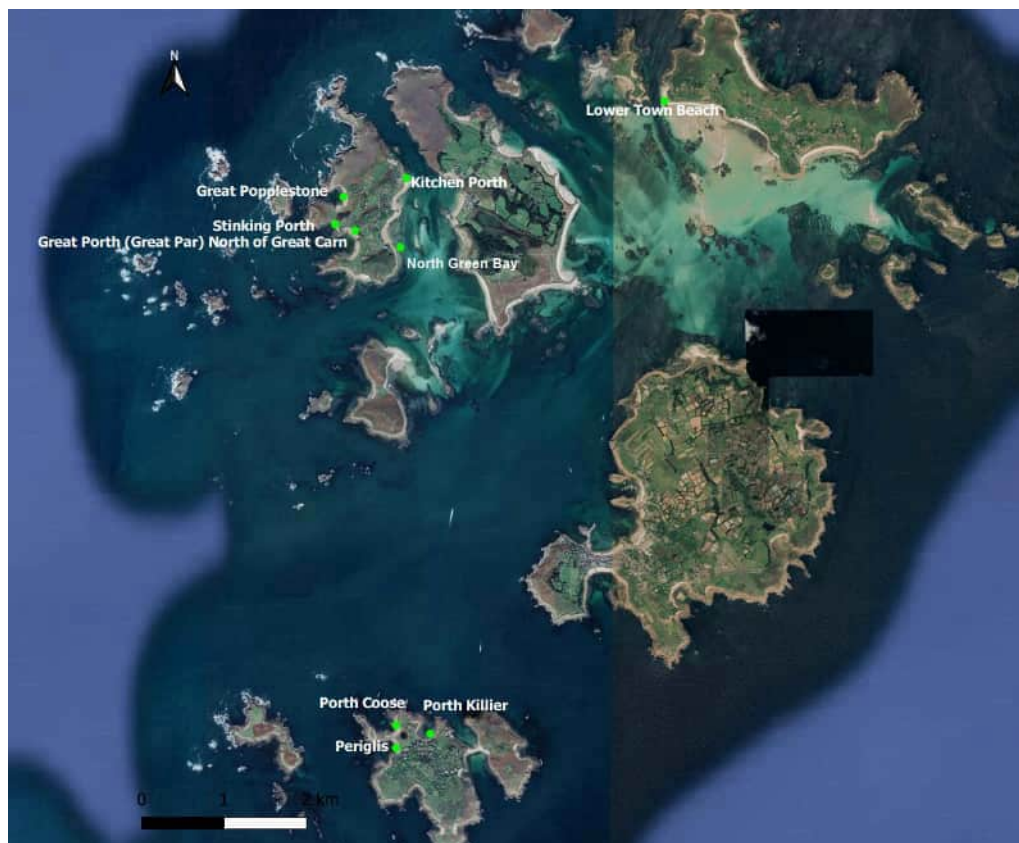


Figure 1: Site locations within the Isles of Scilly

Maps Data: Google Earth CNES / Airbus Maxar Technologies © 2022

2.2 Site locations and proposed schemes

2.2.1 Great Popplestone

Great Popplestone is located on the west coast of the island of Bryher on the north-west margins of the Isles of Scilly archipelago. The beach comprises rounded granite boulders and cobbles to the south, with a more typical sand dune towards the north of the beach. Due to its location on the west coast of the island, Great Popplestone faces the Atlantic and is directly exposed to waves originating from deep water at the

entrance to the bay. A track runs adjacent to the beach, with Great Pool, a brackish lagoon, located approximately 45m south. Regular overtopping of the dunes leads to damage of water supply infrastructure and contamination of the groundwater, affecting the drinking water quality on the island.

The proposed development comprises the following elements:

- Raising of the rock crest level of sea wall at the south of the bay to reduce overtopping (protecting Great Pool). Two options are being considered for this, option 1: import rock required to raise crest level, option 2: movement of scattered rocks from further north in the bay for this purpose.
- The proposed development would make use of the existing protection and enhance it rather than require any demolition works. The existing rocks behind the wall can also be reused in front of the wall to contribute to a reduction in wave overtopping and avoid the need to import rock.

There is also an area, approximately 20m in length, in the north of the beach where some local erosion to the crest has occurred due to pedestrian access to the beach. Soft measures are proposed in this area to control access to the beach including:

- A potential board walk over this area to retain access to the beach with infill of locally sourced rocks and cobbles to help establish the beach crest.

2.2.2 Stinking Porth

Stinking Porth is located on the west coast of Bryher, southwest of Great Pool. The beach at Stinking Porth is relatively narrow in comparison to other beaches on Bryher. Stinking Porth is protected by an embankment. The defences at Stinking Porth serve to protect the island's water supply from seawater inundation and are vulnerable to erosion.

The proposed development comprises the following elements:

- A new revetment with a higher crest level along a 55m section of Stinking Porth, where the existing crest levels are below 5.5m. The rear of the structure here needs to be increased in width and level to provide resistance to overtopping discharges. The proposed revetment is a robust solution that will provide resilience against extreme storm events and protection for Great Pool.
- The slope of the main armour will be 1:2, comprising of a mix of 0.3 to 1 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour layer will be set at +6.5m to prevent overtopping. Using existing and reclaimed material, the leeward side of the structure can be brought up to +6.5m to match the crest and also help re-establish the footpath behind.
- The rock armour and underlayer/geotextile will replace the top of the beach and provide a suitable structure to resist overtopping and maintain the required crest level.
- The seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment is a change to the appearance of the beach from the existing dune appearance, it will provide the necessary protection.

2.2.3 Great Porth (Great Par) North of Great Carn

Great Porth (Great Par) North of Great Carn is located on the western coast of the island of Bryher. Due to its location on the west coast of the island, Great Porth beach

is therefore directly exposed to the Atlantic Ocean. The beach comprises of sand with rocks and cobbles. Historically, ram cliffs at Great Porth have been slowly receding with beach areas steadily retreating at rates of 25-30m per century.

The proposed development comprises the following elements:

- Design and construction of a new 80m rock revetment with an impermeable core, incorporating a vehicle and boat access point through a storm gate or similar demountable storm barrier. The new revetment would be a robust solution that will provide resilience against extreme storm events.
- The slope of the main armour will be 1:2, comprising of a mix of 0.3 to 1 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour will be set at +6.0m, with a 3m wide crest to prevent overtopping.
- It is proposed that material will be placed on the rear of the rock crest to tie into existing ground levels. The material will provide some initial resistance to any overtopping discharges and will help the rear of the crest tie into the area behind.
- A demountable flood barrier is proposed to protect the lower level crest of the boat ramp. This would be a steel frame and stop log panel that can easily be erected by one person. The frame will need to be fixed to the rock crest at both ends. This flood barrier will rely on human intervention and as such, an appropriate warning system will be required so that the stop logs are inserted to provide the required protection.
- Seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment presents a change to the appearance of the beach from the existing dune appearance, the proposed extents are however similar to the existing revetment at the north of the beach.

2.2.4 Green Bay

Green Bay is located on the east coast of the island of Bryher. The beach comprises of sand and cobble with a well-established vegetated crest. Green Bay has a sheltered orientation located within Tresco Sound, however, it is vulnerable to the surge and swell that flows along the channel between Tresco and Bryher.

The proposed development comprises the following elements:

- Implementation of a resistant impermeable barrier at the crest to reduce the discharges reaching the boatyard. The crest will be excavated and impermeable geobags placed at a level of +5.5m, and then covered with natural reclaimed embankment along a stretch of 70m, to provide a permanent barrier layer.
- Reclaimed material will be replaced around the geobags with a minimum 0.3m cover to provide protection for them.
- The embankment will be vegetated to provide additional erosion protection as well as replicating existing habitats. The revegetated crest will be 5m wide, and contoured to blend into the immediate hinterland, to provide an embankment with a natural appearance and an ability to reduce flooding into the boatyard. A geomat will be implemented on the rear slope of the fill to help stabilise the slope whilst vegetation establishes itself.

2.2.5 Kitchen Porth

Kitchen Porth is located on the northeast side of Bryher, facing the island of Tresco. It is a small beach composed of mainly sand with some cobbles. The south corner of the beach is vulnerable to wave activity which leads off the ram and embankment to the rear of the beach.

The proposed development comprises the following elements:

- The provision of additional armourstone in front of the existing structures for approximately 40m from the eastern corner of the beach up to the exit from the beach to the west to protect the exposed embankment and Ram from wave attack.
- The slope of the armourstone will be 1:2, comprising of a mix of 0.3 to 1 tonne armourstone, either reclaimed from existing resources on the island or imported. It will tie into existing levels at each end, into the existing bank to the north and into the rock outcrop to the south. The implementation of this armourstone should dissipate the wave energy and prevent direct attack on the Ram.
- The proposed armourstone does not include an impermeable layer, nor is the crest level proposed to be increased, and so some overtopping discharge is still expected to reach/percolate to the gardens of the leeward properties.

2.2.6 Porth Killier

Porth Killier is located at the northern extent of the island of St Agnes, approximately 120m east of Big Pool. Coastal erosion and flood risk at Porth Killier presents a risk of inundation and contamination at the Big Pool. In addition, there is risk of undermining the road that runs along the southern extent of Porth Killier.

The Porth Killier site has been divided into three areas of intervention: the sea wall; the eastern end; and the western end. Overtopping has not occurred at the western end and therefore no works are proposed there. The proposed works for the sea wall and the eastern end are outlined below:

The seawall

- Implementation of a rock scour protection at the foundation of the seawall. Wider toe protection of 0.3 to 1.0 tonne rock size with a minimum width of 3m is recommended to protect the wall from undermining and failure, and also to reduce overtopping.
- A 30m section of the eastern side of the wall has been identified as the most damaged and as such, a 3m toe-berm of 0.3 to 1.0 tonne rock armour toe berm is proposed here.
- A 35m section on the western side has been identified as the least damaged and as such, the rock toe here will be characterised by 1.9m wide 0.3 to 1.0 tonne rocks and 1.1m of cobbles, which will tie into the existing rock headland.
- Rock material will be sourced locally where possible but will need to be imported if unavailable.

Eastern end

- Construction of a rock structure revetment with 0.3 to 1 tonne material to reduce halt ram erosion. The rock revetment would be placed up to the crest of the underside of the ram/outcrop to reduce the cut back towards the road. In order to minimise the volume of rock required, rock armour will be protected by a cobble toe that will make use of existing materials.
- The presence of the revetment will improve the stability of the halt ram and also act as a reduction to wave overtopping events.

2.2.7 Porth Coose

Porth Coose is located on the northern extent of the island of St Agnes. A low dune separates the beach from Big Pool. There is also a rail and boulder groyne connecting Porth Coose with Ginamoney Carn. Porth Coose is vulnerable to erosion.

The proposed development comprises the following elements:

- Provision of a more robust and wider ridge crest along the entire length of the Porth Coose frontage. The crest elevation would be increased through recharge using local and imported material, with rock bags with the rear filled with site won material to grade to existing levels.
- The bags will be placed on a prepared geotextile surface at the top of the slopes and fill material is to be placed behind to tie in the top of the bags to the ground behind. A geomat will be placed to stabilise this slope and encourage establishment of vegetation.
- The crest elevation will be increased to prevent overtopping and should be at approximately +7.3m.

2.2.8 Periglis

Periglis is located in the northern extent of the island of St Agnes, adjacent to Porth Coose and north of the settlement of Lower Town. The beach is composed of both sand and pebbles. Periglis is vulnerable to erosion at higher tides.

The proposed development comprises the following elements:

- Protection of Periglis beach through use of geobags, laid on a geomat and wrapped in geotextile, and covered with excavated cobble/sand material along most of the bay. Part of the existing material at the top of the beach (mix of sand and cobbles) will be excavated, from the seaward face, to allow the positioning of geobags in the existing footprint in the core of the dune/bank. The geobags will be filled with dry sand of density around 1600kg/m³. If sand material is not available, the geobags may be filled with graded local or imported rocks using high performance nets.
- The geobags will be covered/protected by a mix of local sand and cobbles and topped up by locally excavated material where available. As such, the geobags will not be exposed directly to the waves and will not be directly visible. The fill will be protected with a matting to encourage establishment of vegetation and to provide additional erosion protection. The new reshaped seaward slope will follow the natural slope of the existing dune/bank.
- Crest elevations will be raised to approximately +7.5m, and crest widths increased to reach a minimum of 4m to prevent overtopping. In order to achieve this increase in elevation, the existing dune/bank will be topped up and covered using local materials with biodegradable matting to retain the material whilst the grasses and plants establish. The natural plant fibres will provide a system of erosion control of the material positioned over the top of the dune/bank, while local flora gets naturally established. A local source of recharge sediment will be used for the dunes/banks. If no local material is available, filling material will be imported, possibly from local quarries in Cornwall.
- The slipway already has a stop log fitting and stop logs and therefore no further action is required.
- This approach will enhance the dune/ bank stability and will provide a robust and permanent approach in terms of protection from coastal erosion.

2.2.9 Lower Town Beach

Lower Town Beach is located on the western extent of the island of St Martin's. It is located east of the village of Lower Town and immediately adjacent to St Martin's Sedimentary Shore Site of Special Scientific Interest (SSSI). There are signs of erosion across Lower Town Beach that have occurred due to human activity from access to the beach and from cabling that has become exposed.

The proposed development comprises the following elements:

- Fencing off the most sensitive area of dunes at the rear of the beach, including the area to the east of the access track where cabling has become exposed to help recovery by limiting access to this area and encouraging accretion of sand at the foot of the dunes.
- Additional erosion protection for the beach access at the west of the beach. This is proposed to be an open grid product appropriate for vehicle loading that will fill with sand to match the existing appearance whilst providing erosion protection to this area.
- General pedestrian footpath management to limit and control access to the beach through provision of signage and short sections of fencing to allow access locations through the dunes along the beach time to recover, whilst still providing different access points through the dunes, without the need for any restoration or other intervention.
- Provision of removable slipway that can be lain as needed and removed and stored during winter to enhance beach access. This will be an aluminium mat that can be rolled out and back up as required with a maximum axle load of 13 tonnes to meet the requirements of the tractors and boat trailers typically used here.

3 Outline CEMP

The CEMP is a live document that needs to be updated as the project progresses through the consenting process and pre-construction phase and throughout the construction of the schemes. A construction contractor has not yet been confirmed. The following outline CEMP (see Table 3-1) has been produced to support the planning application and marine licence and it is assumed it will be delivered further by the construction contractor prior to the start of construction to address any consent conditions imposed and to reflect the detailed construction methodology.

Table 3-1: Outline Construction Environmental Management Plan

Ref.	Environmental Objective	Action Proposed	Relevant development site	Responsibility	Reference to further information	Further comment
Coastal processes						
CP1	Prevent introduction of construction materials into the water column	All work to be undertaken in dry conditions (i.e. when tide levels expose the work areas). All intertidal works (vehicle movements on the beach) will cease 1.5 hours prior to high tide. New defences will be constructed in sections only that can be completed during a single tidal period. Tide levels to be monitored throughout construction; if there is a risk of tidal inundation during construction, all works will cease immediately. Works will cease during storm events, where the beach is facing the predominant wind/wave direction.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP2	Prevent introduction of construction materials into the water column	Presence of rock storage/geobag storage areas on the foreshore will be limited to the construction period. The potential storage area must be located as high as possible in the tidal range, preferably above Mean High Water Springs. Fine sediment will not be stored on the foreshore to prevent sediment mobilisation.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP3	Maintain natural profile of beach	Beach levels around rock storage areas will be monitored and, if necessary, reinstated using excavated material.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	

CP4	Maintain natural profile of the beach	Movements of construction vehicles on the beach will be along designated routes only. Construction traffic pathways on the beach will be periodically assessed and reinstated if necessary. All disturbed areas will be returned to their former state following construction.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP5	Maintain natural profile of the beach	Construction traffic pathways will be visually assessed and beach levels reinstated if significant lowering and compaction is observed.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP6	Maintain natural profile of the beach	Slope of recharged rock armour must be maintained at a gentle, dissipative gradient, as similar to existing conditions as possible, to reduce risk to local scour of beach material.	Great Popplestone	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP7	Maintain natural profile of the beach	Cobbles and sediment will be taken from the entire longshore profile of the beach to reduce depleting specific areas of sediment.	Porth Killier	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP8	Prevent introduction of suspended beach material into the water column	Tidal work schedules will be assessed at least 2 weeks in advance of the works and works will be co-ordinated around these dates.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
Biodiversity and Nature Conservation						
BN1	Minimise the risk of impacts on ecology during construction	An Ecological Clerk of Works (ECoW) will be appointed to support the delivery of measures described in the CEMP during the construction process.	All	Council of the Isles of Scilly Project Manager	Environmental Statement section 5.4	
BN2	Avoid impacts on breeding birds within the Isles of Scilly Special Protection Area (SPA) and Ramsar site	Works and compound areas will be clearly marked prior to the start of construction and communicated regularly to site staff and visitors. No vegetation clearance or work to rock revetments to be undertaken during the main breeding season (March to September inclusive) without a pre-works check no sooner than 2 weeks before work commences at each site, to identify whether nesting birds are present or not.	All	Construction contractor	Environmental Statement section 5.4	

		No work is to take place if nesting birds are present.				
BN3	Avoid impacts on wintering birds	Sequential working should be undertaken (completing works at one site before moving to the next) to minimise energy loss from birds.	All	Construction contractor	Environmental Statement section 5.4	
BN4	Avoid impacts on maritime, subtidal and intertidal habitats within the Isles of Scilly complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA) and Ramsar.	<p>A full range of pollution prevention measures will be implemented throughout construction, as set out in the CIRIA guidance document Control of water pollution from construction sites. Oil and fuel leaks will be prevented by implementing the following suite of actions:</p> <ul style="list-style-type: none"> • Chemicals, fuels and oils will be stored in bunds with a storage capacity 110% of the stored volume. • Biodegradable chemicals will be used wherever possible. • Drip trays will be placed under standing machinery. • Refuelling will take place on an impermeable surface in one designated area well away from any watercourse or drainage (at least 7m) with capture of any spillages. • Emergency spill kits will be available on site at all times and staff will be trained in their use. • Toolbox talk to be delivered to all staff for pollution prevention and incident response. 	All	Construction contractor	Environmental Statement section 5.4 CIRIA Guidance: control of water pollution from construction sites	

		<ul style="list-style-type: none"> • Daily checks and weekly recording of site equipment will be carried out. Any defective items will be removed from site as soon as reasonably practicable. • Where there is potential for pollutants to reach marine habitats through drainage water, this will be collected and passed through settlement and oil interception facilities to remove pollutants before being discharged to the sea • All waste will be removed from site by an appropriately licensed waste management company. 				
BN5	Minimise damage and disturbance to all habitats.	<p>All working areas will be clearly demarcated; no construction plant to access areas of beach outside of the working area.</p> <p>All plant and delivery drivers will be fully briefed on the importance of adhering to track limits before entering site.</p> <p>Existing access tracks will be utilised wherever they exist.</p> <p>Rock armour to be stored within the construction compound or in areas of existing rocky shore and shingle habitat wherever feasible.</p>	All	Construction contractor	Environmental Statement section 5.4	
BN6	Avoid impacts on local ecological receptors	A vegetation survey should be undertaken immediately prior to the works taking place and will set out the limits of all site compounds and access roads. Suitable track matting should be used where tracks do not already exist and should be monitored following the works to ensure that the vegetation cover is recovering.	All	Construction contractor	Environmental Statement section 5.4	

BN7	Avoid impacts on local ecological receptors	All works will be undertaken at low tide where possible to minimise disturbance to marine fauna from noise and vibration. A toolbox talk will be given to all site staff regarding marine mammals and potential disturbance impacts. If any seals are encountered within proximity to the works, then works will be halted until the individual has moved on. If this proves to be a regular occurrence, further advice will be sought from an experienced marine ecologist.	All	Construction contractor	Environmental Statement section 5.4	
BN8	Avoid impacts on local ecological receptors	A Toolbox Talk will be provided for all staff and site visitors prior to the start of construction; the talk will provide information on the site and its ecological sensitivities and on the environmental management requirements and emergency procedures to be adopted.	All	Council of the Isles of Scilly Project Manager	Environmental Statement section 5.4	
BN9	Avoid impacts on local ecological receptors	<p>General avoidance measures will be incorporated at each site including:</p> <ul style="list-style-type: none"> • Limiting hours of working to daylight hours to limit disturbance to nocturnal and crepuscular animals. • Use of lighting at night will be avoided. If the use of lighting is essential, then a directional cowl will be fitted to lights to prevent excess light spill. • Contractor to maintain site efficiently, clearing away materials which are not in used, such as wire or bags, to prevent harm to wildlife. • Any pipes will be capped when not in use (especially at night) to prevent animals becoming trapped. Any excavations outside of the intertidal zone will be covered overnight to prevent animals from falling and getting trapped. If not possible, a strategically placed plank will be placed to allow animals to escape. 	All	Contractor	Environmental Statement section 5.4	

BN10	Invasive species management	<p>Hottentot Fig <i>Carpobrotus edulis</i> has been recorded at most of the sites. An invasive species management plan will be written in order to ensure that works do not cause the further spread of species. This will include:</p> <ul style="list-style-type: none"> • A re-survey of the works area prior to the commencement of works to ensure that there are no new areas of growth of any invasive non-native species. • A toolbox talk to all site on the identification and status of Hottentot Fig and for compliance with the management plan. • During site set up, demarcation of any areas of Hottentot Fig to ensure that the site enabling works do not incidentally cause the spread of this species. • Complete removal and appropriate disposal of individual whole plants. • Appropriate biosecurity measures to be followed during removal of these plants. 	All	Council of the Isles of Scilly Project Manager / Construction contractor	Environmental Statement section 5.4	
BN11	Invasive species management	<p>Brown Rats pose a threat to nesting seabirds. All local biosecurity measures to ensure that the works do not facilitate the spread of Brown Rats will need to be adhered to such as using rope guards on the boat and ensuring food and waste onboard are all contained in rodent proof containers. These measures should be documented in a biosecurity risk assessment.</p>	All	Council of the Isles of Scilly Project Manager / Construction contractor	Environmental Statement section 5.4	
Landscape						
LA1	Maintaining landscape	<p>Measures to maintain landscape across all sites should be applied including:</p>	All sites	Construction contractor	Environmental Statement Section 6.6 and	

		<ul style="list-style-type: none"> • Replant any areas of lost vegetation using locally appropriate species. • Ensure that Scillonian granite is used for revetment and where adjacent to existing Cornish granite, this is graded to create a softer transition. • Carefully plan programme and haulage routes to minimise the length of time any one area is exposed to the visual impact of vehicle movements and that visual impacts are experienced by viewers within a limited field of view. 			Tables C3 to C6 of Appendix 6C.	
LA2	Maintaining landscape	Replant to re-establish continuous line of shrubs behind revetment at Kitchen Porth and to replace any lost shrubs at Green Bay using locally appropriate species.	Kitchen Porth	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	
LA3	Maintaining landscape	Cover rear of concrete sloping sea wall with small rocks and soil to reduce incongruity and untidiness and partially restore naturally occurring land cover.	Great Popplestone	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	
LA4	Maintaining landscape	Using aggregate of colour complementary to the surrounding sands as fill materials of geomat.	Lower Town Beach	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	
Historic Environment						
HE1	Avoid impacts on Scheduled Monuments	The proposed works at Great Porth (Great Par) and Porth Killier take place within the scheduled area of a Scheduled Monument. It is recommended that mitigation measures are agreed with Historic England, including potential recording and evaluation or restoration and conservation of any remains that will survive, and followed during construction.	Great Porth (Great Par) North of Great Carn Porth Killier	Construction contractor	Environmental Statement Section 7.6	

HE2	Avoid impacts on Scheduled Monuments	The access route between Church Quay and Green Bay crosses the scheduled area of the prehistoric field system and Romano-British monument (1014989). Any works that impact the Scheduled Monument will require Scheduled Monument Consent. It is recommended that an alternative route is taken, e.g. delivery directly by barge, or the access route is reinforced through matting.	Green Bay	Construction contractor Council of the Isles of Scilly	Environmental Statement Section 7.6	
HE3	Avoid impacts on Scheduled Monuments	It is recommended that archaeological monitoring in the form of a watching brief and a programme of excavation and recording if archaeological remains are identified takes place during ground breaking, in line with an approved Written Scheme of Investigation.	Porth Killier	Construction contractor Council of the Isles of Scilly	Environmental Statement Section 7.6	
HE4	Avoid impacts on Scheduled Monuments	The presence and boundaries of Scheduled Monuments adjacent to storage areas, compounds and access routes should be brought to the attention of staff during construction to avoid inadvertent or accidental damage to the monument. This could be achieved through fencing of the monument.	All sites	Construction contractor	Environmental Statement Section 7.6	
HE5	Avoidance of impacts on archaeological features.	It is recommended that the preparation of this area for storage, including any groundworks be subject to archaeological monitoring, such as a watching brief.	Proposed sand storage area (St Agnes)	Council of the Isles of Scilly	Environmental Statement Section 7.6	
Public Amenity						
PA1	Avoid impacts on permissive footpaths and their users	A public safety plan will be created for each site to identify the measures required to minimise impacts on public use of the area. This may require staff to be present at some sites where work interactions with the public are potentially higher risk. This member of staff would advise members of the public when it is safe to pass, or temporarily halting construction.	All	Construction contractor	Environmental Statement section 8.5	
PA2	Public communications	A stakeholder management plan should be set out outlining what communications are needed and when. For local residents, this will include a letter drop to advise of the up-coming works.	All	Construction contractor	Environmental Statement section 8.5	

		Newsletters may also be used which could be put up in local accommodation, shops, and on noticeboards at the site.				
PA3	Maintain public safety	Temporary fences will be placed across impacted tracks and areas of publicly-used features likely to be affected by the works with notices directing walkers/other recreational users to alternative routes.	All	Construction contractor	Environmental Statement section 8.5	
PA4	Access management	Materials should be delivered directly to the site where they will be used, where feasible, to manage impacts on use of main arrival points to the island.	All	Construction contractor	Environmental Statement section 8.5	
Environmental Contamination						
CE1	Prevent dust nuisance.	Detailed construction method statements should be prepared following Institute of Air Quality Management (IAQM) guidelines on dust management for medium and high risk sites.	All	Construction contractor	Environmental Statement Section 10.6 IAQM Guidance on the Assessment of Dust from Demolition and Construction	
CE2	Mitigate impacts of noise on residential receptors.	Out of hours works will be avoided wherever reasonably practicable. Noise impacts will be minimised by adherence to measures described in BS 5228, to reduce noise impacts from construction by 5dB to 15dB.	All	Construction contractor	Environmental Statement Section 10.6 BS 5228-1:2009 British Standard Institute Code of Practice for Noise and Vibration Control on Construction and Open Sites.	
CE3	Minimise impacts of lighting the construction site.	Detailed construction method statements will be prepared following Institute of Lighting Practitioners guidance.	All	Construction contractor	Environmental Statement Section 10.6	

					Institute of Lighting Practitioners Guidance Notes for the Reduction of Obtrusive Light	
CE4	Minimise risk of waste to cause environmental pollution	<p>Waste that is recyclable will be sorted within the construction compound, placed into the relevant storage disposal container, and then removed from site for disposal at an appropriate recycling facility.</p> <p>All potentially contaminated material will be subject to Waste Acceptance Criteria testing. Any excavated clay that cannot be reused would be bulked on site and disposed of at an appropriately licenced waste management facility.</p> <p>All residual waste material will be removed from site and disposed of at an appropriately licenced waste management facility.</p>	All	Construction contractor	Environmental Statement Section 10.6	
CE5	Minimise impacts of construction traffic	<p>A Construction Traffic Management Plan (CTMP) will be prepared and agreed with the Council of the Isles of Scilly prior to works commencing to detail timings for deliveries and other matters related to safety on the access routes.</p> <p>The CTMP will likely include:</p> <p>A HGV routeing plan to be communicated to all drivers during their induction.</p> <p>Limiting construction delivery hours and avoidance of 'peak' times.</p>	All	Construction contractor	Environmental Statement Section 10.6	
Climate risk						

CR1	Risk Management	An emergency plan should be developed including emergency procedures for flooding and storm events including outline of safe access points and details of alternative access points to site.	All	Construction contractor	Environmental Statement Section 9.9	
CR2	Risk Management	The Environment Agency Flood Risk Warning Service should be used to provide early warning of flood risk to the construction site and allow preparedness.	All	Construction contractor	Environmental Statement Section 9.9	

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Stephen Swabey
Project Director: Climate Adaptation Scilly
Council of the Isles of Scilly
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TR21 0LW

3rd August 2021

Dear Stephen,

Re: EIA Screening Opinion Request under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011: Off-Island Sea Defence Works and Dune Management works, Isles of Scilly.

Thank you for your letter of the 25th May 2021, requesting a Screening Opinion for an Environmental Impact Assessment in relation to the above proposal. My sincere apologies for the delay in getting a response out to you.

In response to your correspondence, I have considered the proposed development at the various sites on St Agnes, Bryher and St Martins, as indicated and in accordance with regulation 5 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 (SI 2011/1824).

I note that the proposed works fall within Schedule 2 Development: 10 Infrastructure Projects, (m) Coastal work to combat erosion and maritime works capable of altering the coast through the construction for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works. The applicable thresholds for screening are set out in column 2. For (M) this relates to 'all development'. As per Schedule 3 I have screened the sites as required.

Having taken into account the criterion set out in Schedule 3 to the 2011 Regulations and based on all the supporting documentation that has been provided, including the submitted plans, and consultation with a number of organisations, it is my opinion that the proposed development is **likely to have significant effects on the environment**. Consequently the screening opinion adopted by the Council of the Isles of Scilly as the relevant planning authority is that:

The proposed development is considered to be Environmental Impact Assessment development as defined in the EIA Regulations.

The proposed development does therefore require an Environmental Impact Assessment. In adopting this screening opinion, account has been taken of the

applicable provisions of the EIA Regulations and their purposive nature and relevant Government Guidance. I have set out below some of the key considerations that have been identified through the screening opinion process including a need to address:

- Full EIA for the three islands – where in combination impacts are also considered
- Shadow HRA (Habitat Regulations Assessment)– for each proposal and the in combination impacts to include visitor/access management proposals if improving visitor infrastructure.
- Full Ecological Impact Assessment (EclA)
- 10% Biodiversity Net Gain (in accordance with the Environment Bill due to come into force during the timescale of the works)
- a bespoke compensation and mitigation document given sensitive nature of the wildlife rich areas.

St Agnes

There are alternatives to the types of materials, particularly the repairs to the low sections of dune at Porth Coose (site no 50). The most visually harmful solution is the concrete block revetment, which may appear as an unsympathetic solution for coastline protection (usually used in connection with protecting high density population areas). There are therefore a number of options that are reasonable to reduce the impact of visual harm.

The use of an agricultural field (site x), for material storage, could be reduced through the erection of an agricultural style building, which would enable materials to be protected, reduce the need to have a 2-yearly replacement of dumpy bags. Alternatively, this site could be screened through the planting of traditional field boundaries to minimise visual impact. I have not visited this site and there may be adequate screening in place.

In relation to historic environment impacts then an archaeological impact assessment will need to be undertaken at an early stage in the planning process to enable informed advice to be provided on this scheme by Historic England and by the Local Planning Authority through arrangements with Cornwall Archaeological Unit. The archaeological assessment should take a particular (though not exclusive) focus on the potential for buried prehistoric land surfaces, inter-tidal remains and peat deposits which may contain early prehistoric archaeological remains and preserved palaeo-environmental evidence (sites 48,49 and 51).

St Martins

There are a number of conditions that are reasonable to reduce the impact of construction and visual harm, this includes the type of fencing erected, its height and degree of permanence. The construction and position of any new boardwalks. In relation to historic environment impacts then an archaeological impact assessment will need to be undertaken at an early stage in the planning process to enable informed advice to be provided on this scheme by Historic England and by the Local Planning Authority through arrangements with Cornwall Archaeological Unit. The archaeological assessment should take a particular (though not exclusive) focus on the potential for buried prehistoric land surfaces, inter-tidal remains and peat deposits which may contain early prehistoric archaeological remains and preserved palaeo-environmental evidence.

Bryher

There are alternatives to the types of materials, particularly the types of materials used in the rock revetment protection works on Quay Beach. In relation to historic environment impacts then an archaeological impact assessment will need to be undertaken at an early stage in the planning process to enable informed advice to be provided on this scheme by Historic England and by the Local Planning Authority through arrangements with Cornwall Archaeological Unit.

The archaeological assessment should take a particular (though not exclusive) focus on the potential for buried prehistoric land surfaces, inter-tidal remains and peat deposits which may contain early prehistoric archaeological remains and preserved palaeo-environmental evidence. General comment - proposed aggregates store at Broward Point. There is reference to this potential site in correspondence, but it is not specifically identified in the information available. It will be important to understand its exact location given the high density of Scheduled Monuments upon the island. Any excavation of the Gig shed (site No 3b), which lies within the proposed area of dune renourishment and restoration, will need to be monitored in accordance with a written scheme of investigation and recorded.

South West Inshore and South West Offshore Marine Plan 2021

The South West Marine Plan was adopted in June 2021 will need to be taken into account when considering planning applications that impact upon the marine environment. Following a consultation with the Marine Management Organisation (MMO) the following policies will need to be considered:

- **Climate Change SW-CC-1:** Proposals that conserve, restore or enhance habitats that provide flood defence or carbon sequestration will be supported. Proposals that may have significant adverse impacts on habitats that provide a flood defence or carbon sequestration ecosystem service must demonstrate that they will, in order of preference:
 - a) avoid
 - b) minimise
 - c) mitigate - adverse impacts so they are no longer significant
 - d) compensate for significant adverse impacts that cannot be mitigated.
- **Climate Change SW-CC-2:** Proposals in the south west marine plan areas should demonstrate for the lifetime of the project that they are resilient to the impacts of climate change and coastal change.
- **Climate Change SW-CC-3:** Proposals in the south west marine plan areas, and adjacent marine plan areas, that are likely to have significant adverse impacts on coastal change, or on climate change adaptation measures inside and outside of the proposed project areas, should only be supported if they can demonstrate that they will, in order of preference:
 - a) avoid
 - b) minimise
 - c) mitigate - adverse impacts so they are no longer significant.
- **Dredging and Disposal SW-DD-1:** In areas of authorised dredging activity, including those subject to navigational dredging, proposals for other activities will not be supported unless they are compatible with the dredging activity.
- **Infrastructure SW-INF-1:** Proposals for appropriate marine infrastructure which facilitates land-based activities, or land[1]based infrastructure which facilitates marine activities (including the diversification or regeneration of sustainable marine industries), should be supported.
- **Aggregates SW-AGG-1:** Proposals in areas where a licence for extraction of aggregates has been granted or formally applied for should not be authorised, unless it is demonstrated that the proposal is compatible with aggregate extraction.
- **Disturbance SW-DIST-1:** Proposals that may have significant adverse impacts on highly mobile species through disturbance or displacement must demonstrate that they will, in order of preference:
 - a) avoid
 - b) minimise
 - c) mitigate - adverse impacts so they are no longer significant.
- **Seascape and Landscape SW-SCP-1:** Proposals should ensure they are compatible with their surroundings and should not have a significant adverse impact on the character and visual resource of the seascape and landscape of the area. The location,

scale and design of proposals should take account of the character, quality and distinctiveness of the seascape and landscape. Proposals that may have a significant adverse impact on the seascape and landscape of the area should demonstrate that they will, in order of preference:

- a) avoid
- b) minimise
- c) mitigate - adverse impacts so they are no longer significant.

If it is not possible to mitigate, the public benefits for proceeding with the proposal must outweigh significant adverse impacts to the seascape and landscape of the area. Proposals within or relatively close to nationally designated areas should have regard to the specific statutory purposes of the designated area. Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks and Areas of Outstanding Natural Beauty.

The EIA process is to provide the LPA will clear details of all the likely significant effects to the environment, both as a result of each scheme and as a combination of all three schemes. These can be taken into account in the decision-making process for the proposals.

The Screening Opinion set out in this letter has been based on the available information as submitted prior to the formal submission planning application. In accordance with Regulation 7 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 (SI: 2011/1824), the Council reserves the right to reconsider this Screening Opinion in the light of any consultation responses received, additional information submitted or revisions to the scheme following the submission of a planning application.

If you require any further information or require clarification on the above then please do not hesitate to contact me.

Yours Sincerely



Lisa Walton MRTPI

Chief Planning Officer

Council of the Isles of Scilly | Email: lisa.walton@scilly.gov.uk | Voicemail: 01720 424456



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Mr J Pearce
Senior Officer: Physical Assets and Natural Resources
Council of the Isles of Scilly
Town Hall
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15th November 2018

Dear Julian,

Re: EIA Scoping Opinion Request under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017: Sea Defence Works and Dune Management Project, Isles of Scilly.

I refer to your formal Environmental Impact Assessment (EIA) Scoping Opinion Request as received by the Local Planning Authority on 24th October 2017 and apologies for the delay in formalising a response. Please find below this Authority's formal Scoping Opinion in relation to the 4 separate sea defence proposals on St Mary's and Tresco.

The Council of the Isles of Scilly – Environmental Impact Assessment (EIA) Scoping Opinion.

In response to your correspondence and request for a Scoping Opinion, we have considered the proposed development at the 4 sites on St Mary's and Tresco as indicated and in accordance with Regulation 15, Part 4 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017.

A request for a Screening Opinion was submitted in October 2016 in which the LPA concluded the proposed sea defence works on each of the 4 sites would constitute EIA development in accordance with the 2011 Regulations (now superseded by the 2017 Regulations). Following the Screening Opinion, the LPA subsequently received a request from the Council of the Isles of Scilly's Infrastructure Department requesting a formal Scoping Opinion in accordance with Regulation 15 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereafter known as the 2017 Regs) as to what information should be submitted as part of an Environmental Statement (ES) that will accompany each planning application for the proposed sea defence works and dune management activities.

Approach to the Environmental Assessment

In accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, set out below is a detailed (but not exhaustive) list of environmental issues that should be included in the ES. In order to comprehensively address all of the environmental issues the LPA has consulted with Natural England (NE), the Environment Agency (EA) and Historic England (HE) who

have provided guidance on the scope of the EIA. The content list set out below makes reference and summarises comments made by consultees. The more specific detailed comments (which you should take particular note of) can be found in copies of the consultee responses appended to this Scoping Opinion (SO).

The ES should contain the maximum relevant information available prior to submission of each planning application for the proposed works on the 4 separate sites. Full regard should be given to the advice contained in Schedule 4 Parts 1 and 2 to the 2017 Regulations.

It is important that typographical errors are eliminated and the submitted document checked thoroughly as to avoid unnecessary queries of data and/or statements, which often gives rise to consultee and public concern.

The issues regarded as those giving rise to the most significant impacts should be highlighted in the introduction to the Statement and summarised in a Non- Technical Summary.

The content of this SO does not prejudice any request for further information under Regulation 25 of the above Regulations if required at a later stage.

Consultation is a key aspect of all Environmental Impact Assessments. This SO lists those statutory consultees and other stakeholders who have been consulted on your submission and have responded. Although some specific comments from their responses may have been incorporated into the SO, the full responses received have been included at the Appendices below and it is these full responses which should also be taken into account when preparing the ES.

The ES should report on how these consultation responses have been addressed in the EIA, including any justification for the omission of any issues. The opportunity to comment upon a draft copy of the ES is requested by the Local Planning Authority. It is expected that mitigation requirements would be described within each of the individual topic chapters of the ES. This should provide for a schedule of the mitigating measures proposed and a timetable for their implementation.

Content of the Environmental Report

The Environmental Report should include the following information:

- Description of the development for each site, including a description of the physical characteristics of the entire proposed works - the past, present and future uses of the land upon which the proposed works would be located should be described in sufficient detail to provide the context for the proposed development. The extent of the study area required around each site will vary according to the nature of the impact and its significance. It is also important to ensure that the cumulative impacts of other developments in the area, including for example the cumulative impact of all coastal defense and dune management works across all 4 sites, as well as considering each proposal separately;
- An outline of the main alternatives studied by the applicant and an indication of the main reasons for the choices made, taking into account the environmental effects - the ES shall demonstrate that alternative options have been considered for each site prior to proceeding with the current proposals, which should include a consideration of the 'do nothing' option;

- A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, biodiversity and geodiversity interests (including fauna & flora), heritage and landscape impacts, coastal processes and the inter-relationship between these factors;
- A description of the likely significant effects of the development on the environment in respect of direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary and the positive and negative effects of the development, resulting from the existence of the proposed works;
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment. This should also identify any proposals for decommissioning and restoration of the site and respective timetable;
- The data required to identify and assess the main effects which the development is likely to have on the environment;
- A non-technical summary of the information provided in the ES.; and
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

Potential Main or Significant Environmental Effects

Landscape and Visual Impact

It will be important to establish the potential landscape and visual impact of the proposed development both during the construction and post construction phases in the context of the AONB, Heritage Coast and Conservation Area. Baseline studies for landscape and visual impact assessment should cover the following:

- the current condition of the landscape; and
- the Landscape character assessment based on the Cornwall and Isles of Scilly Landscape Assessment 2007.

A formal planning application for each site should assess in detail the following:

- the significance of the impact the proposed works would have on the landscape character of the localised and wider landscape;
- the impact of the height, design, materials and colour and source for any materials to be used in the coastal defense works in the context of the landscape;
- the visual impact created by the structures and dune management measures on all receptors in the area, including any nearby residential properties and; and
- the cumulative impact of the development where appropriate.

A formal planning application for each site should be supported by:

- A Landscape and Visual Impact Assessment; and
- Photographic viewpoints/photomontages both localised and from the wider landscape illustrating the visual extent of the proposed works.

Local Amenity Impacts

It is considered that potential adverse amenity impacts associated with the development could occur during the construction phase and should be addressed by the ES. For example, sources of

noise would include that from both sea and land vehicles delivering the building materials to each site and those involved in the placement of materials. A Construction Environmental Management Plan (CEMP) should be submitted with a formal planning application for each site to address all matters in relation to noise, vibration, dust, traffic, pollution control and the amenity afforded by the adjacent footpaths and working hours.

Historic Environment

A Statement of Significance and Heritage Impact Assessments should be carried out by suitably qualified personnel and if the potential for significant adverse impact is found, included in the EIA with mitigation proposals.

Historic England have identified that the proposed sea defense areas includes a number of Scheduled Monuments including two prehistoric entrance graves and a WWII pill box. In addition, there are a number of other designated heritage assets in the vicinity, including two sections of civil war breastwork on the northern edge of the bay. Any EIA should identify any designated or undesignated heritage assets and consider them in relation to the proposals and the potential to impact upon their significance. The EIA should address any construction period, as well as direct and indirect impacts on completion and future projected impacts.

Ecology

The ES should assess the direct and indirect impacts of each proposal on any designated sites, including the Special Area of Conservation, Special Protection Area, Marine Conservation Zone and SSSI's and any features of these designations as well as any protected species. The ES should demonstrate that sufficient data has been previously provided to be able to adequately assess any potential impacts. If any surveys are carried out then these should be carried out by appropriate specialists at appropriate times of the year, at a sufficient frequency and over a sufficient time period, as identified by recognised survey methodologies.

Natural England advise that the ES should assess potential direct and indirect impacts to the interest features of a number of designated sites, including the supporting coastal processes. The ES should also identify measures to minimise impacts on biodiversity and opportunities for biodiversity enhancement outside designated sites.

Natural England have also advised that a Habitat Regulations Assessment will be required and sufficient information to inform this assessment should be incorporated within the EIA.

Drainage / Flood Risk / Pollution Control / Coastal Processes

The control of pollution during construction phase activities should be addressed as part of the CEMP. The ES should explain how the proposed works for each site meets the policies of the Shoreline Management Plan, being the primary document providing guidance in relation to the long term sustainable management of the Isles of Scilly coastline. Specifically the Environment Agency have advised that whilst the proposed measures are likely to be effective in addressing areas of discrete risk in the shorter-term, and the need is recognised, the addition of static structures and defences can compromise the longer-term aim to develop natural adaptive capacity and resilience for the frontages. They also advise that the design and introduction of such measures needs to carefully balance the need to address short-term risk against the requirement for long-term sustainability and state that the critical objective for the EIA is to clearly demonstrate that this principle has been central to developing the proposals for each of the 4 sites.

In relation to coastal processes, the Environment Agency advise that the following should be included in the ES:

- the Influence of proposed structures on the intertidal and nearshore wave climate;
- the Influence of proposed structures on beach-dune sediment exchange within the upper beach area;
- potential impacts on sediment transport (cross-shore, long-shore etc.) within the intertidal and nearshore zones; and
- potential for enhanced risk of outflanking of existing and/or new structures.

The EA have made more specific observations in relation to each site as summarized below:

1. Porthloo

The proposed intervention does not appear completely in line with SMP policy as currently No Active Intervention. Whilst there are already existing ad hoc rock defences in place, the proposed up-graded structure is likely to increase the erosional pressure on the remaining seaward beach face. Rock armour solution is preferable to harder or vertical structures, but the EIA needs to demonstrate strategic requirement for these works. EIA should identify how the introduced structures and materials will also help facilitate, rather than obstruct, the future transition to managed realignment of the frontage.

2. Port Hellick

The boardwalk as a formalised path is likely to be a positive management response, however the route needs consideration to ensure that this does not contribute to funneling of windblown sand through and past the dune system. Further fencing to control access might also be considered to maximise the effectiveness of the intervention.

Managing resilience of the frontage through strengthening the vegetation cover is a positive management response, however it should be recognised that the natural response of the dune to periodic storm events and sea level rise will be to roll-back by a process of overtopping and dune material being moved up and over onto the rear face of the dune. This process has the potential to transport the non-native vegetation gradually into the hinterland area and therefore careful consideration of the vegetation used on the dune is necessary, e.g. native plants should be considered as an initial preferred alternative to using the *Fascicularia Bicolour*. Clearance of other non-natives such as Hottentot Fig might also be considered. Council of the Isles of Scilly Wildlife Trust can provide guidance on suitable alternative planting for this zone to support stabilisation of the dune heath.

The extension of the dune is proposed to be through importing of crush Cornish granite (sized 4-10m). The existing dune should be analysed to demonstrate that this is a suitable material, both in terms of chemical and physical properties. The aim should be for any imported material to closely match the existing beach and dune sediment characteristics and to avoid changing the chemical, profile and drainage characteristics.

It should be noted that saline intrusion via percolation through the dune ridge and filtration into the groundwater may be potentially as significant a threat to the fresh water resource of the Higher Moors Pool as is breaching and overtopping of the dune by waves. This risk will increase over time as hydrostatic pressures increase within the dune bank due to sea level rise.

3. Porth Mellon

Proposal is not strictly in line with SMP policy. The approach could enhance current rate of dune erosion, leading to enhanced flood risks in longer-term.

Retention and improved resilience of the dune system is crucial at Porth Mellon and the boardwalk as a formalised path would be a positive response. However the route of this needs to be considered to ensure that this does not contribute to funneling of windblown sand through and past the dune system. Further fencing to control access might also be considered to maximise the effectiveness of the intervention.

The rock revetment is liable to increase draw down of the beach levels local to the structure. The extent and depth of drawdown should be assessed, and this should then be related to stability of the slipway, wave propagation up the slipway and to the tide gate, and any wider drawdown that might affect the dune system to the east.

Because the proposed structure will obstruct the active face of the dune bank, disconnection from the beach could occur and the potential losses associated with this should be assessed. Measures which aim to 'roughen' the surface of the revetment and its ability to trap and retain sediment should be explored. Options should also be considered that restore this area of dune elsewhere in the bay (e.g. by setting back the wall to the north east, or importing beach material to re-nourish the fore dunes).

Repairs to the existing wall in the north-east corner should not be problematic. However consideration of setting the wall back to a more landward position should be demonstrated, taking into account both short and long term objectives and sea level rise. This may provide a more resilient long term option.

4. South Beach Tresco

Whilst the proposed works are a trial, these actions are not strictly in line with SMP policy of No Active Intervention. As such it will be important that the ES details the strategic requirement. Whilst it is acknowledged that there are some assets at potential risk, these alone (cable inspection chamber / wood store) would not generally qualify as drivers of a proposed change to SMP policy. Strategically it may be more advisable to relocate assets than modify natural shoreline behaviours.

Whilst adverse impacts on the dune are to be monitored, impacts on the beach should also be considered. The ES should detail the following:

- What will be used as an indicator of adverse impacts?
- What response will be made to such impacts (i.e. would this trigger intensification of structural intervention, or removal of structures and restoration of the beach and dune)?
- How will this be monitored?
- Will this response be controlled through planning conditions?
- Is it meaningful to adopt a monitor and adapt approach for a structure which only has a 5–10 year design life (noting that there is a difference between damage caused in annual occurring storms and those that occur much less frequently, if the damage from the latter may only occur once in the design life)?

Whilst the proposed rock-roll revetment is above the 200 year still water level, it would still be within the active wave zone (due to run up). As a hard reflective structure, it will tend to increase draw down of the fronting beach. It is not certain that the structure will become covered with

windblown sand as suggested and there is risk that the revetment becomes exposed, increasing the disconnection between the beach and the dune. This should be reviewed.

The planting and matting of the dune face is to be encouraged as this may help retain sand on the dune face. Consideration could be given as to whether the profile is too steep to allow accretion.

The proposal is for a 5-10 year design life. Plans for removal at 10 years, or sooner if deterioration in the structure is evident (this needs to be defined), need to be considered and presented. This consideration also needs to confirm that removal at the end of the design life will not lead to a period of accelerated erosion of the dunes, resulting in longer-term net detriment to the beach and dune system, despite the short-term protection obtained whilst the revetment was deployed. This process of rapid 'catch-up' erosion has been observed elsewhere following the removal of structures. This long term consideration should then be compared against the do nothing option (NAI) that has been rejected.

Supporting Information & Data

The ES shall identify within each section, what supporting data was used to identify and assess the main effects that the development is likely to have on the environment.

Mitigation

It is expected that mitigation requirements will be described within each of the individual topic chapters of the ES. This should provide for a schedule of the mitigating measures proposed and a timetable for their implementation.

Non-technical summary.

The Environmental Statement may, of necessity, contain complex scientific data and analysis in a form which is not readily understandable by the lay person. The main findings must be set out in accessible plain English in a non-technical summary to ensure that the findings can more readily be disseminated to the general public, and that the conclusions can be easily understood by non-experts as well as decision makers.

An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information.

Although it is important that information provided within the ES is up to date and relevant, it is acknowledged that there may be occasions where this may not be the case. The ES should provide clear details, if this becomes the case.

Environmental Impacts or Effects with Lesser or No Significance

The ES should be proportionate and not be any longer than is necessary to assess properly the effects of the main environmental impacts. Impacts that have little or no significance for the particular development in question will need only very brief treatment to indicate that their possible relevance has been considered.

Summary

This Scoping Opinion seeks to address the main issues that should be covered in any Environmental Statement accompanying a planning application for the above development. However it should be appreciated that this Scoping Opinion is based on information currently available and is not exhaustive.

The LPA would require the EIA to comprehensively assess the cumulative impact of the proposed works for all 4 sites with an individual ES for each individual proposal to support each separate planning application.

The LPA have 16 weeks in which to assess and determine the outcome of each planning application. It may therefore be advisable to submit all applications at the same time to avoid significant delays. The planning fees for this type of operation are set out in The Town and Country Planning (Fees for Applications, Deemed Applications, Requests and Site Visits) (England) Regulations 2012, as amended 2018. This would be £234 per 0.1 of a hectare (or part thereof) up to £2,028. You can check the latest fee changes here:

https://ecab.planningportal.co.uk/uploads/english_application_fees.pdf

EIA development planning applications will need to be determined at Full Council and the dates for these meetings can be found online here: <http://www.scilly.gov.uk/council>.

The Scoping Opinion set out in this letter has been based on the available information as submitted prior to the formal submission of planning applications for each proposal. In accordance with Regulation 15, Part 4 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017, the Council reserves the right to reconsider this Scoping Opinion in the light of any consultation responses received, additional information submitted or revisions to the scheme prior too or following the submission of a planning application.

If you require any further information or require clarification on the above then please do not hesitate to contact me.

Yours Sincerely



Lisa Walton

Senior Officer: Planning and Development Management

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Appendix 4.1: Tidal data

St Agnes

Table 4- reproduces tidal diamond data from Admiralty TotalTide Software for two locations around St Agnes, one to the north-west (49°55'N 6°19'W) and another to the north-east (49°55'N 6°22'W). This indicates maximum spring and neap tidal rates of 1.7kts (0.88m/s) 0.8kts (0.41m/s) respectively to the north-east and 1.5kts (0.77m/s) and 0.7kts (0.36m/s) respectively to the north-west. The tidal diamond to the north-west is most relevant to Periglis and Porth Coose. The diamond to the north-east is most relevant to Porth Killier.

Table 4-1: Tidal Diamond for two points around St Agnes

Time (hrs)	49°54'N 6°19'W			49°55'N 6°22'W		
	Direction	Spring rate (kts)	Neap rate (kts)	Direction	Spring rate(kts)	Neap rate (kts)
-06	300°	0.4	0.2	320°	0.4	0.2
-05	020°	0.1	0	042°	0.3	0.1
-04	109°	0.7	0.3	097°	0.6	0.3
-03	110°	1.2	0.5	116°	1	0.4
-02	111°	1.5	0.7	121°	0.8	0.4
-01	111°	1.6	0.7	125°	0.7	0.3
HW	111°	1.7	0.8	161°	0.2	0.1
+01	125°	1.5	0.7	224°	1	0.4
+02	190°	0.1	0	233°	1.1	0.5
+03	275°	1.3	0.6	241°	1.2	0.5
+04	272°	1.7	0.8	262°	1.5	0.7
+05	265°	1	0.4	262°	1.2	0.5
+06	292°	0.7	0.3	296°	0.5	0.2

St Martin's

Table 4- reproduces tidal diamond data from Admiralty TotalTide Software for two locations around St Martins, one to the south east (49°56'N 6°13'W) and another north east (49°59'N 6°12'W). This indicates maximum spring and neap tidal rates of 2.9kts and 1.4kts respectively to the south-east and 2.3kts and 1.1kts respectively to the north east. The tidal diamond to the south east of St Martins is most relevant to the Lower Town site.

Table 4-2: St Tidal Diamond for two points around St Martin's

Time (hrs)	49°56'N 6°13'W			49°59'N 6°12'W		
	Direction	Spring rate (kts)	Neap rate (kts)	Direction	Spring rate(kts)	Neap rate (kts)
-06	007°	0.9	0.4	322°	1.1	0.5
-05	011°	1.1	0.5	336°	1.4	0.7

-04	017°	1.6	0.8	348°	1.6	0.8
-03	022°	1.7	0.8	004°	1.6	0.8
-02	027°	1.4	0.7	024°	1.4	0.7
-01	035°	0.9	0.4	076°	1.1	0.5
HW	110°	0.2	0.1	134°	2.1	1
+01	201°	2	0.9	161°	2.3	1.1
+02	188°	2.9	1.4	182°	1.9	1
+03	202°	2.2	1	204°	1.4	0.7
+04	227°	1.1	0.5	233°	0.9	0.5
+05	326°	0.4	0.2	277°	0.8	0.4
+06	000°	0.7	0.3	315°	1	0.5

Bryher

Table 4- reproduces tidal diamond data from Admiralty TotalTide Software for two locations around Bryher, one to the north west of Bryher (49°59'N 6°25'W) and another south west of Bryher (49°55'N 6°22'W).

This indicates maximum spring and neap tidal rates of 1.9kts and 0.9kts respectively to the north west and 1.5kts and 0.1kts respectively to the south west. The tidal diamond to the north west of Bryher is most relevant to the sites on the west side of Bryher.

Table 4-3: Tidal Diamond for two points around Bryher

Time (hrs)	49°59'N 6°25'W			49°59'N 6°22'W		
	Direction	Spring rate (kts)	Neap rate (kts)	Direction	Spring rate(kts)	Neap rate (kts)
-06	252°	1	0.5	320°	0.4	0.2
-05	318°	0.5	0.3	042°	0.3	0.1
-04	034°	0.9	0.5	097°	0.6	0.3
-03	055°	1.6	0.8	116°	1	0.4
-02	062°	1.9	0.9	121°	0.8	0.4
-01	066°	1.6	0.8	125°	0.7	0.3
HW	072°	0.9	0.5	161°	0.2	0.1
+01	102°	0.4	0.2	224°	1	0.4
+02	206°	0.7	0.4	233°	1.1	0.5
+03	227°	1.3	0.6	241°	1.2	0.5
+04	239°	1.7	0.8	262°	1.5	0.7
+05	240°	1.7	0.8	262°	1.2	0.5
+06	245°	1.2	0.6	296°	0.5	0.2

Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Great Popplestone

Final Report

November 2022

www.jbaconsulting.com



**Council of the
ISLES OF SCILLY**

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Revision History

Revision Ref/Date	Amendments	Issued to
V1	Final Report	CIoS

Contract

This report describes work commissioned by The Council of the Isles of Scilly JBA Consulting carried out this work.

Prepared by Hannah Webster BSc MSc
 Assistant Ecologist

Reviewed by Jonathan Harrison BSc MSc MCIEEM
 Senior Ecologist

Purpose

This document has been prepared as a Final Report for The Council of the Isles of Scilly. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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Carbon Footprint

JBA is aiming to reduce its per capita carbon emissions.

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites: Great Popplestone, Stinking Porth, Great Porth (Great Par) North of Great Carn, Green Bay, and Kitchen Porth are located on the island of Bryher. Three of these sites: Porth Killier, Periglis Beach (split into two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Great Popplestone.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019. The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any likely significant effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest</p>

HRA stage	Description
	<p>features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
<p>Stage 3: Assessment where no alternatives and adverse impacts remain</p>	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p> <p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
<p>Stage 4: Compensatory measures</p>	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Great Popplestone is located on the west coast of the island of Bryher on the north-west margins of the Isles of Scilly archipelago, approximate central OS Grid Reference SV 87383 14974. The beach comprises rounded granite boulders and cobbles to the south, with a more typical sand dune towards the north of the beach. Due to its location on the west coast of the island, Great Popplestone faces the Atlantic and is directly exposed to waves originating from deep water at the entrance to the bay. The location of the proposed scheme can be seen in Figure 3-1.

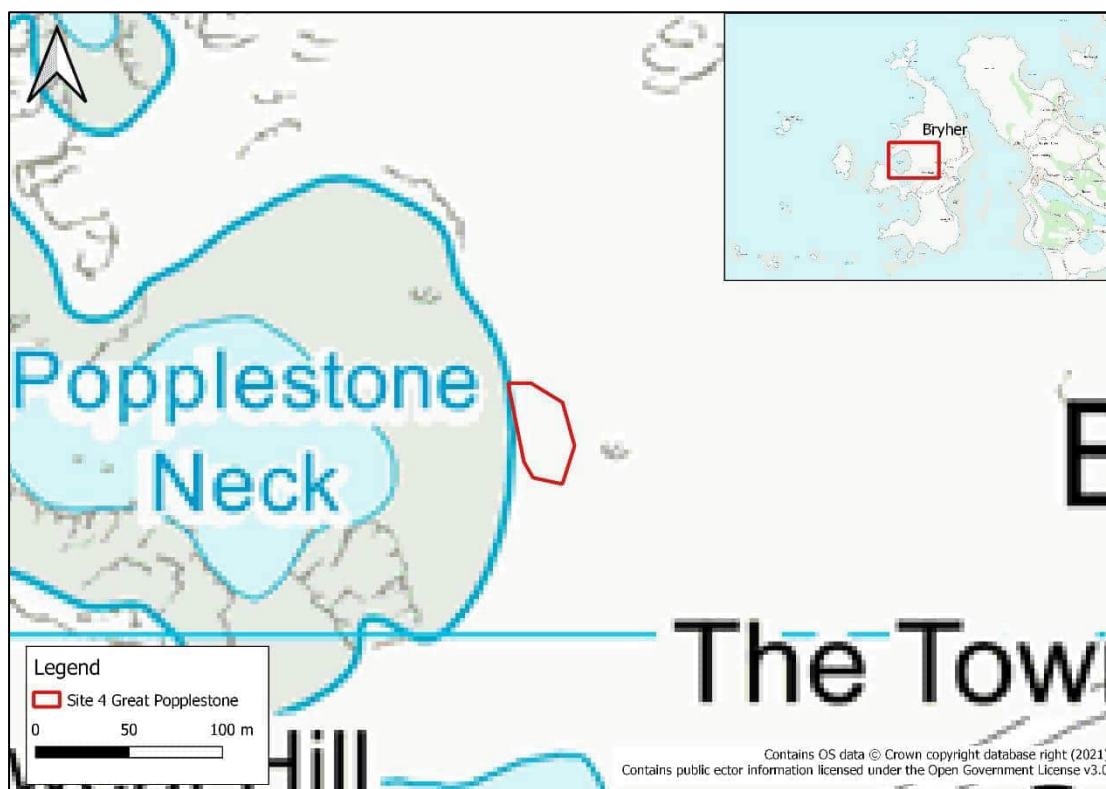


Figure 3-1: Location of proposed scheme

3.2 Proposed Works

Works are required at Great Popplestone to protect the island's water supply from seawater inundation and consequently contamination of the island's drinking water supply (Great Pool and the low-lying water meadow at Great Popplestone).

The proposed development will comprise the following elements:

- Raising of rock armour crest level to reduce overtopping (protecting Great Pool). Two options are being considered for this, option 1: import rock required to raise crest level, option 2: movement of scattered rocks from further north in the bay for this purpose.
- The proposed development would make use of the existing protection and enhance it rather than require any demolition works. If option 2 were to be chosen, these rocks would not be replaced, however, the dune behind will be

re-graded to allow it to adjust to the new situation naturally and reduce the risk of wave overtopping. This option would avoid the need to import rock.

There is also an area, approximately 20m in length, in the north of the beach where some local erosion to the crest has occurred due to pedestrian access to the beach. Soft measures are proposed in this area to control access to the beach including:

- A potential board walk over this area to retain access to the beach with infill of locally sourced rocks and cobbles to help establish the beach crest.

At the northern extent of the beach where previously buried Cornish granite rocks are exposed, the proposed development will involve removal of these rocks for re-use elsewhere across Bryher.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located approximately 60m south of the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA) and the Isles of Scilly Ramsar sites is approximately 220m north of the proposed scheme.

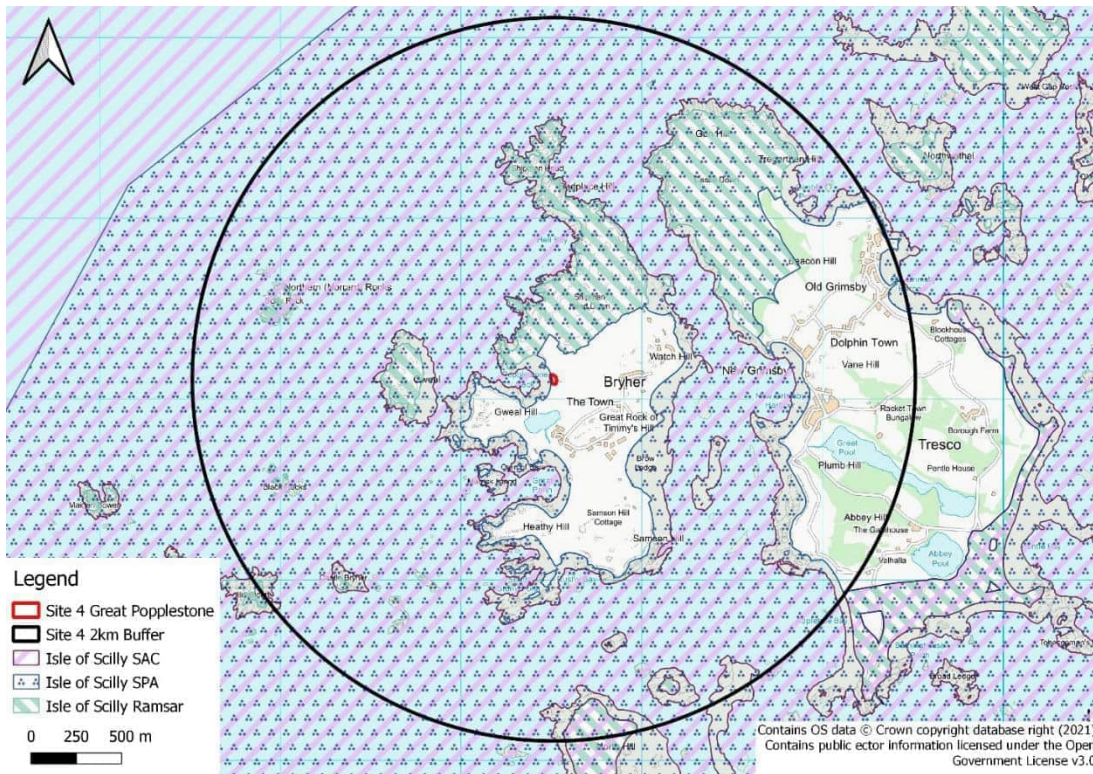


Figure 4-1: Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull
 - Storm Petrel

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.5 Assessment of Likely Significant Effects

Assessment of hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are outlined in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Habitat loss/community simplification	<p>Materials will be delivered by barge using a landing site in the intertidal area at Great Popplestone beach or at an alternative site if Great Popplestone beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium barge in this area could therefore result in the temporary loss of sandflats sand. The landing of the which are a feature of the SAC.</p> <p>The works are confined to the beach and are therefore not taking place directly on any annex I habitats.</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other plans, projects or programmes (PPPs).</p>	No

		<p>The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.</p> <p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to restore the seawall at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach.</p> <p>There is also a small area where rock will be recovered from in the centre of the beach which will result in temporary habitat loss.</p>			
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.	No	There is no potential for effects in combination with other PPPs.	No

		<p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above Mean High Water Springs (MHWS) tide. There is therefore negligible risk of spreading or introducing marine INNS.</p>			
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes unlikely to have a significant impact upon coastal processes either on its own	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No

	Physical damage/mortality	<p>Reefs and sandbanks are not present within the works area and will therefore not be impacted.</p> <p>There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during construction.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Great Popplestone beach or at an alternative site if Great Popplestone beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	No
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore Dock was recorded on site during the site survey and it is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at	Yes

		dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.		this site.	
	Alteration to coastal processes	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however, this would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No

Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in habitat loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and Visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal that are hauled out. There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey	Yes	A pollution event at another site as part of the same project could act in combination with	Yes

		seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.		a pollution spill at this site.	
	Alteration to coastal processes	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	The works are small in scale and will take place above the MHWS tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for either Annex I species. Storm petrel or not known to nest on Bryher however Lesser black-backed	No	No potential for effects in combination with other PPPs have been identified.	No

		gull have been recorded nesting within the SPA. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species lost as part of the proposed scheme.			
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA;	No	No potential for effects in combination with other PPPs have been identified.	No

		this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the SPA. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		of Scilly SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly Ramsar					

<p>Species regularly supported during the breeding season (as identified at designation):</p> <p>Storm Petrel</p> <p>Lesser black-backed gull</p>	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the Ramsar. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the	No	No potential for effects in combination with	No

		MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.		other PPPs have been identified.	
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species qualified under the Ramsar. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Habitat loss/community simplification	The works area is not known as a breeding habitat for Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding Shag lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and	Yes	In combination assessment carried forward to Appropriate	Yes

		workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.		Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No

5.6 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Physical damage/mortality	Alone
	Water pollution	Both
	Habitat loss	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey seal	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution	Both
	Noise and visual disturbance	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution	Both
	Noise and visual disturbance	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution	Both
	Noise and visual disturbance	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 60m
Isles of Scilly SPA	Approximately 60m
Isles of Scilly Ramsar	Approximately 220m

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Habitat loss: Works are to restore the seawall at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach. Materials will be delivered by barge using a landing site in the intertidal area at Great	Yes	Habitat loss will only be temporary during the construction period, with habitats reinstated after the works. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat	Yes – although potential for small scale temporary negative impact

	<p>Popplestone beach or at an alternative site if Great Popplestone beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>		<p>habitat as part of the material delivery by barge will be temporary.</p>	
	<p>Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. Whilst works is concentrated on the seawall at the top of the beach a small area of the beach will be used for rock recovery.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Great Popplestone beach or at</p>	<p>Yes</p>	<p>All habitats will be reinstated after works have been complete and therefore any damage will be temporary.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed</p>	<p>Yes - although potential for Small scale temporary negative impact</p>

	<p>an alternative site if Great Popplestone beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>		haul routes and not stray outside of these areas.	
<p>Annex II species (primary reason for selection): Shore dock</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
<p>Annex II species (not primary reason for selection): Grey seal</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes

	classified within the Isles of Scilly Complex SAC.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Northern rocks to the southwest of Bryher. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	Yes
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes

	utilised by Annex I species within the SPA.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	Yes
Breeding bird assemblage: Great Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills	Yes	Strict pollution prevention measures will be implemented on site,	Yes

Shag Lesser Black-backed Gull Storm Petrel	which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.		as outlined in Section 6.2.1	
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrels are not known to nest on Bryher however Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause	Yes	Strict pollution prevention measures will be implemented on site,	Yes

identified at designation): Storm Petrel Lesser black-backed gull	changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.		as outlined in Section 6.2.1	
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes

	utilised by breeding bird species within the Ramsar.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known breeding sites of seabirds associated with the Ramsara and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes

6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences – Habitats Regulations Assessment (HRA)

Stinking Porth

Final Report

November 2022

www.jbaconsulting.com



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ISLES OF SCILLY**

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Stinking Porth.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any Likely Significant Effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below. This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
<p>Stage 1: Screening</p>	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
<p>Stage 2: Appropriate Assessment</p>	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p>

HRA stage	Description
	If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Stinking Porth is located on the west coast of Bryher, southwest of Great Pool, approximate central OS Grid Reference SV 87304 14822. The beach at Stinking Porth is relatively narrow in comparison to other beaches on Bryher. Stinking Porth is protected by an embankment. The exposed face of the embankment comprises a mix of rounded beach pebbles, cobbles and small boulders. There are some low sections where overtopping has occurred, and many cobbles/small boulders have been washed over the crest. The landward face comprises soil and sand with relatively dense, but poor quality, vegetation. The crest of the

embankment comprises of a combination of soil and boulders and is less than 3m wide with recent evidence of overtopping. The location of the proposed scheme can be seen in Figure 3-1.



Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Stinking Porth there is a need to increase the crest height above the present level of the crest of the beach, along with a requirement for a stable structure resistant to wave attack, to protect the island's water supply (Great Pool) from seawater inundation.

The proposed works include:

- A new revetment with a higher crest level along a 55m section of Stinking Porth, where the existing crest levels are below 5.5m. The rear of the structure here needs to be increased in width and level to provide resistance to overtopping discharges. The proposed revetment is a robust solution that will provide resilience against extreme storm events and protection for Great Pool.
- The slope of the main armour will be 1:2, comprising of a mix of 1 to 3 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour layer will be set at +6.5m to prevent overtopping. Using existing and reclaimed material, the leeward side of the structure can be brought up to +6.5m to match the crest and also help re-establish the footpath behind.
- The rock armour and underlayer/geotextile will replace the top of the beach and provide a suitable structure to resist overtopping and maintain the required crest level.

- The seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment is a change to the appearance of the beach from the existing dune appearance, it will provide the necessary protection.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 60m north of the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA). The Isles of Scilly Ramsar site is approximately 350m north of the proposed scheme.

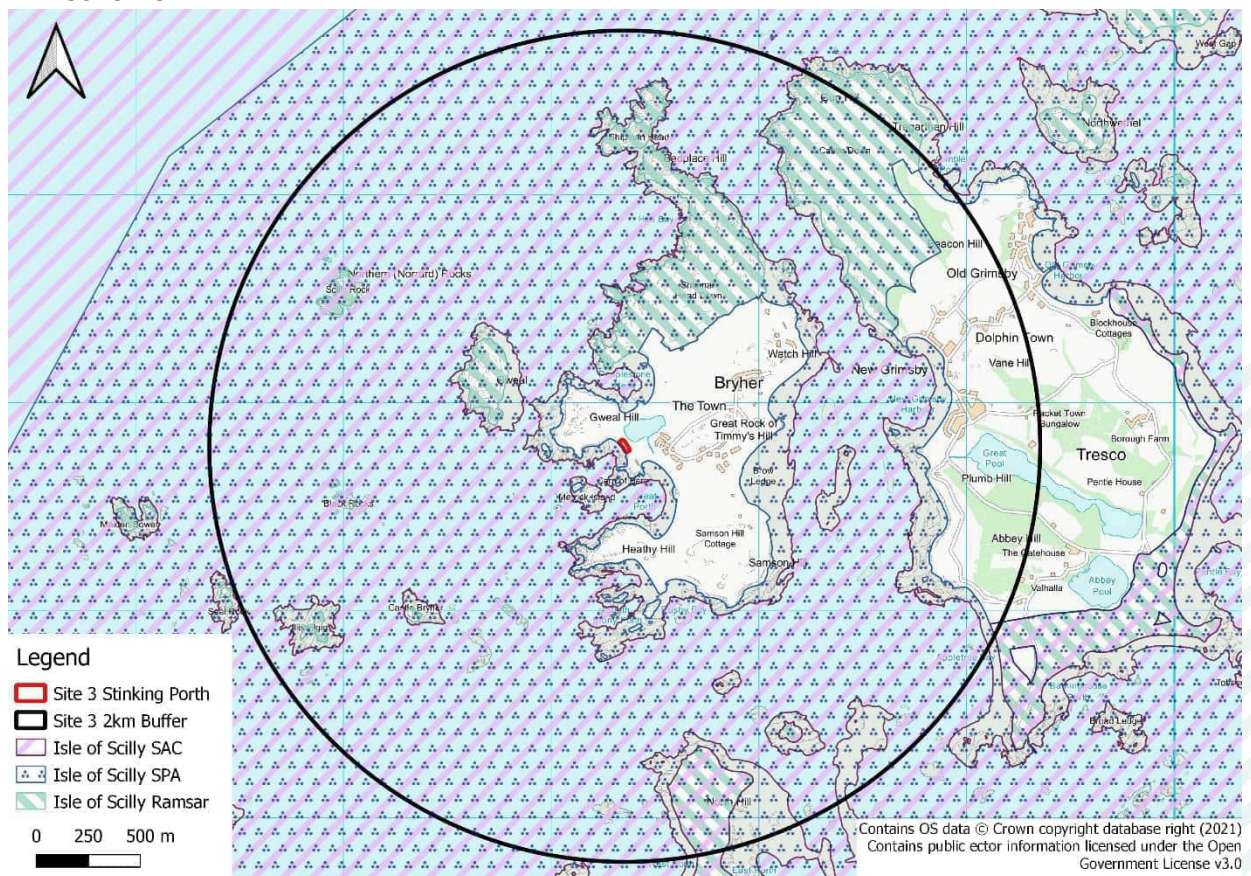


Figure 4-1: Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time

- Mudflats and sandflats not covered by seawater at low tide
- Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull
 - Storm Petrel

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely

- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the

mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects.

The results of the screening assessment are outlined in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs	Habitat loss/community simplification	Materials will be delivered by barge using a landing site in the intertidal area at Stinking Porth beach or at an alternative site if Stinking Porth beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC. The works are confined to the beach and are therefore not taking place	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA. There is no potential for effects in combination with other PPPs.	No

		<p>directly on any annex I habitats.</p> <p>The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.</p> <p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to the crest of the beach and there will be no permanent loss of sandflat habitat. However, there will be small temporary losses within the construction areas at the top of the beach due to rock and material storage.</p>			
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.	No	There is no potential for effects in combination with other PPPs.	No

		<p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.</p>			
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	<p>A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.</p>	Yes
	Alteration to coastal processes	<p>The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in</p>	No	<p>There is no potential for effects in combination with other PPPs.</p>	No

		combination with the other schemes.			
	Physical damage/mortality	<p>Reefs and sandbanks are not present within the works area and will therefore not be impacted.</p> <p>There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during the construction works.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Stinking Porth beach or at an alternative site if Stinking Porth beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	No
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore Dock was recorded on site during the site survey and it is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water	Yes	In combination assessment carried forward to	Yes

		chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.		Appropriate Assessment	
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works.	No	No potential for effects in combination with other PPPs have been identified.	No

		Works will not result in habitat loss of marine habitat.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					

Annex I species: Storm Petrel Lesser Black-backed Gull	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species SPA within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be	No	No potential for effects in combination with other PPPs have been identified.	No

		expected to move away from harm.			
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the SPA. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the Ramsar. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could	Yes	In combination assessment carried forward to	Yes

		cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.		Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species qualified under the Ramsar. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Habitat loss/ community simplification	The works area is not known as a breeding habitat for Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding Shag lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		Isles of Scilly Ramsar.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No

5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs	Physical damage/mortality	Alone
	Water pollution	Both
	Habitat loss	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey seal	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution	Both
	Noise and visual disturbance	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution	Both
	Noise and visual disturbance	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution	Both
	Noise and visual disturbance	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 60m
Isles of Scilly SPA	Approximately 60m
Isles of Scilly Ramsar	Approximately 350m

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any

items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Habitat loss: Works are to restore the beach crest and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach during construction due to rock and material storage. Materials will be delivered by barge using a landing site in the intertidal area at Stinking Porth beach or at an alternative site if	Yes	Habitat loss will only be temporary during the construction period, with habitats reinstated after the works. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.	Yes – although potential for small scale temporary negative impact

	<p>Stinking Porth beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>			
	<p>Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. Whilst works is concentrated on the beach crest a small area of the beach will be used for rock storage.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Stinking Porth beach or at an alternative site if Stinking Porth beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflat habitat.</p>	<p>Yes</p>	<p>All habitats will be reinstated after works have been complete.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.</p>	<p>Yes - although potential for Small scale temporary negative impact</p>

	Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.			
Annex II species (primary reason for selection): Shore dock	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Northern rocks to the southwest of Bryher. The works area is not a known hauling out spot for seals, although it is possible it is occasionally	Yes

			used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these species. This will	Yes

			continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm Petrel are not known to nest on Bryher however Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these	Yes

			species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site	Yes

			prior to any works starting.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes

6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

**Great Porth (Great Par) North of
Great Carn**

Final Report

November 2022

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Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Stinking Porth, Great Porth (Great Par) North of Great Carn, Green Bay, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (split into two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Great Porth (Great Par) North of Great Carn.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a

formal screening for any likely significant effects (either alone or in combination with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species</p>

HRA stage	Description
	within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site. If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Great Porth (Great Par) is located on the western coast of the island of Bryher, approximate central OS Grid Reference SV 87505 14707. The beach comprises of sand with rocks and cobbles. Great Porth (Great Par) is located immediately adjacent to the Pool of Bryher and Popplestone Bank (Bryher) SSSI and approximately 30 m south of a scheduled monument: Gig shed on the north

coast of Great Porth, Bryher. The location of the proposed scheme can be seen in Figure 3-1.

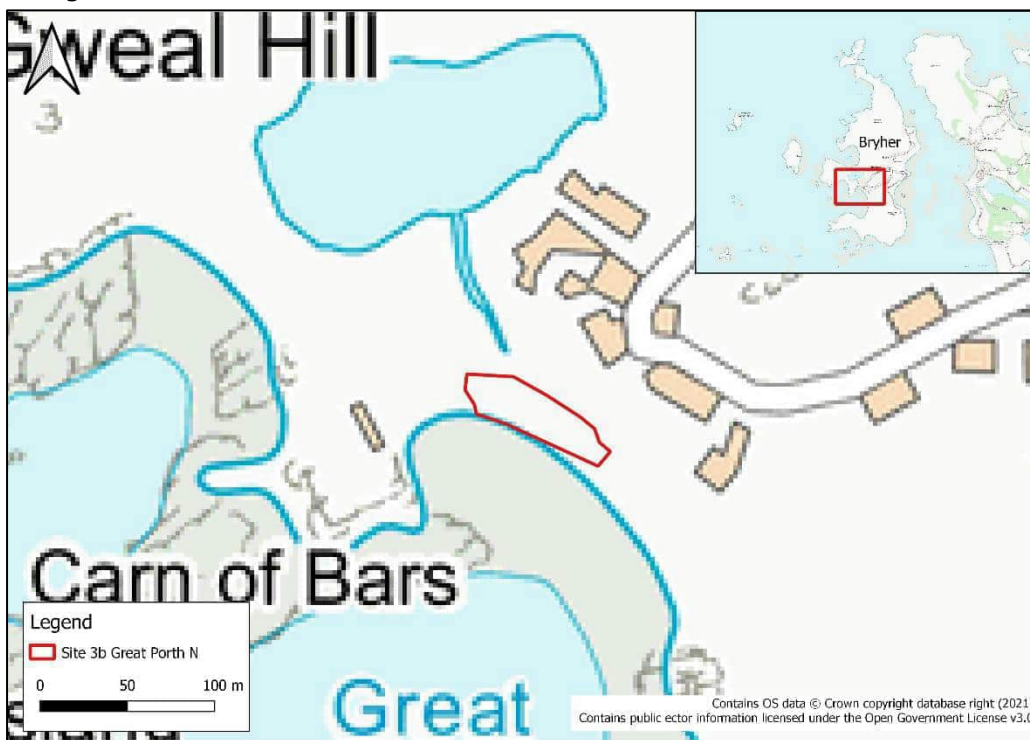


Figure 3-1: Location of proposed scheme

3.2 Proposed Works

There is a need to increase defences at Great Porth (Great Par) North of Great Carn to protect the island's water supply (Great Pool) from seawater inundation, and also to maintain the protection of people and property, infrastructure, and the Pool of Bryher and Popplestone Bank (Bryher) SSSI. There is also a need to replace unsuitable informal defences that have been laid.

The proposed development comprises the following elements:

- Design and construction of a new 80m rock revetment with an impermeable core, incorporating a vehicle and boat access point through a storm gate or similar demountable storm barrier. The new revetment would be a robust solution that will provide resilience against extreme storm events.
- The slope of the main armour will be 1:2, comprising of a mix of 0.3 to 1 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour will be set at +6.0m, with a 3m wide crest to prevent overtopping.
- It is proposed that material will be placed on the rear of the rock crest to tie into existing ground levels. The material will provide some initial resistance to any overtopping discharges and will help the rear of the crest tie into the area behind.
- A demountable flood barrier is proposed to protect the lower level crest of the boat ramp. This would be a steel frame and stop log panel that can easily be erected by one person. The frame will need to be fixed to the rock crest at both ends. This flood barrier will rely on human intervention and as such,

an appropriate warning system will be required so that the stop logs are inserted to provide the required protection.

- Seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment presents a change to the appearance of the beach from the existing dune appearance, the proposed extents are however similar to the existing revetment at the north of the beach.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located approximately 50m from the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA). The Isles of Scilly Ramsar site is approximately 500m north of the proposed scheme.

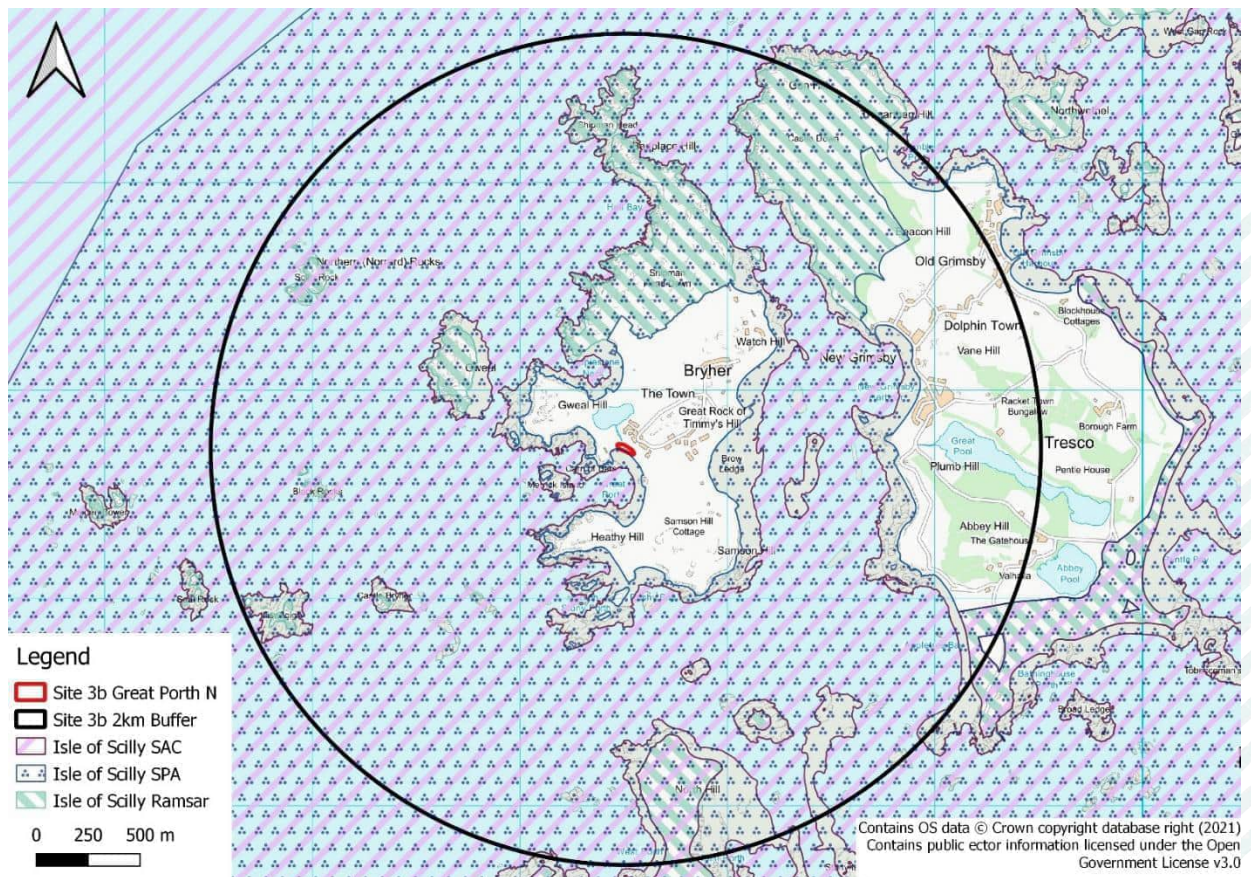


Figure 4-1: Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull

- Storm Petrel

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	✓	✓	✓	X	X	X
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Habitat loss/community simplification	Materials will be delivered by barge using a landing site in the intertidal area at Great Porth (Great Par) beach or at an alternative site if Great Porth (Great Par) beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA. There is no potential for effects in combination with other plans, policies and programmes (PPPs).	No

		<p>The works are confined to the rock revetment at the top of the beach crest and are therefore not taking place directly on any annex I habitats.</p> <p>The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.</p> <p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to restore the rock revetment at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there may</p>			
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		<p>be temporary losses within the construction areas at the top of the beach.</p> <p>The replacement of the existing structure will result in a temporary loss of the existing rock rubble habitat.</p>			
	<p>Competition from invasive non-native species (INNS)</p>	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>

		Works will only take place above Mean High Water Springs (MHWS) tide. There is therefore negligible risk of spreading or introducing marine INNS.			
	Alteration to coastal processes	The works are small in scale and will take place above the MHWS tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	Reefs and sandbanks are not present within the works area and will therefore not be impacted. There is the potential for works to damage sandflats, which are	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline	No

		<p>included in the annex I habitat 'mudflats' during construction works.</p> <p>There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during construction.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Great Porth (Great Par) beach or at an alternative site if Great Porth (Great Par) beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>		<p>on Bryher however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	
	Habitat loss/ community simplification	No Shore Dock was recorded on site during the site	No	No potential for effects in combination	No

Annex II species (primary reason for selection): Shore dock		survey, and it is believed to be absent from the works areas.		with other PPPs have been identified.	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the	No	No potential for effects in combination with other PPPs have been identified.	No

		potential to spread this INNS, however would not be expected to impact populations of Shore Dock.			
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in habitat loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Disturbance	Operations during the construction phase could cause noise disturbance	Yes	In combination assessment carried forward to Appropriate	Yes

		<p>and workers could cause visual disturbance to Grey seal that are hauled out.</p> <p>There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals in the sea.</p>		Assessment	
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	<p>The works are small in scale and will take place above the MHWS tide level. While it is possible for seals to be hauled out on the beach</p>	No	No potential for effects in combination with other PPPs have been identified.	No

		during the works, works would not continue if seals were present and likely to be harmed.			
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase,	Yes	In combination assessment carried	Yes

		accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.		forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the SPA. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding	No	No potential for effects in combination with other PPPs have been identified.	No

		habitat of breeding bird species lost as part of the proposed scheme.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for	No	No potential for effects in combination with	No

		breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.		other PPPs have been identified.	
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the Ramsar. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		Ramsar.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species qualified under the Ramsar. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Habitat loss/ community simplification	The works area is not known as a breeding habitat for Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will	No	No potential for effects in combination with other PPPs have been identified.	No

		therefore be no foraging or breeding habitat of breeding Shag lost as part of the proposed scheme.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
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5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Water pollution	Both
	Habitat Loss	Alone
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey seal	Water pollution	Both
	Disturbance	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution	Both
	Disturbance	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution	Both
	Disturbance	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution	Both
	Disturbance	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the on the Isles of Scilly complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 60m
Isles of Scilly SPA	Approximately 60m
Isles of Scilly Ramsar	Approximately 500m

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any

items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Habitat loss: Works are to restore the revetment at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach. The replacement of the existing structure will	Yes	Habitat loss will only be temporary during the construction period, with habitats reinstated after the works. As similar material to replace the rock rubble habitat is proposed to be placed at the rear of the rock crest, this should not change the long-	Yes – although potential for small scale temporary negative impact

	<p>result in a temporary loss of the existing rock rubble habitat.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Great Porth (Great Par) beach or at an alternative site if Great Porth (Great Par) beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>		<p>term land use of the area.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary</p>	
	<p>Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. Whilst works</p>	<p>Yes</p>	<p>All habitats will be reinstated after works have been complete.</p> <p>An Ecological Clerk of Works will inspect the sites before any material</p>	<p>Yes - although potential for Small scale temporary negative impact</p>

	<p>is concentrated on the revetment at the top of the beach.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Great Porth (Great Par) beach or at an alternative site if Great Porth (Great Par) beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>		<p>is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.</p>	
<p>Annex II species (primary reason for selection): Shore dock</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	<p>Yes</p>

	classified within the Isles of Scilly Complex SAC.			
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Northern rocks to the southwest of Bryher. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local	Yes

			wildlife groups before works begin.	
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site	Yes

			prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm Petrel are not known to nest on Bryher however Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is	Yes

			therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with	Yes

			the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result	Yes

			in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
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6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Green Bay

Final Report

November 2022

www.jbaconsulting.com



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ISLES OF SCILLY**

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Contract

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Stinking Porth, Great Porth (Great Par) North of Great Carn, Green Bay, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (split into two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Green Bay.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019. The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any likely significant effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitats Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation</p>

HRA stage	Description
	objectives of the site. If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Green Bay is located on the east coast of the island of Bryher, approximate central OS Grid Reference SV 87946 14537. The beach comprises of sand and cobble with a well-established vegetated crest. Green Bay has a sheltered orientation within Tresco Sound and is not subject to significant wave action. The location of the proposed scheme can be seen in Figure 3-1.



Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Green Bay there is a need to improve the permeability of the crest to manage the risk of overtopping since it can lead to flooding of the boatyard in the immediate vicinity.

The proposed works include:

- Implementation of a resistant impermeable barrier at the crest to reduce the discharges reaching the boatyard. The crest will be excavated and impermeable geobags placed at a level of +5.5m, and then covered with natural reclaimed embankment along a stretch of 70m, to provide a permanent barrier layer.
- Reclaimed material will be replaced around the geobags with a minimum 0.3m cover to provide protection for them.
- The embankment will be vegetated to provide additional erosion protection as well as replicating existing habitats. The revegetated crest will be 5m wide, and contoured to blend into the immediate hinterland, to provide an embankment with a natural appearance and an ability to reduce flooding into the boatyard. A geomat will be implemented on the rear slope of the fill to help stabilise the slope whilst vegetation establishes itself.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 100m west of the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA). The Ramsar site is approximately 850m north of the proposed scheme.

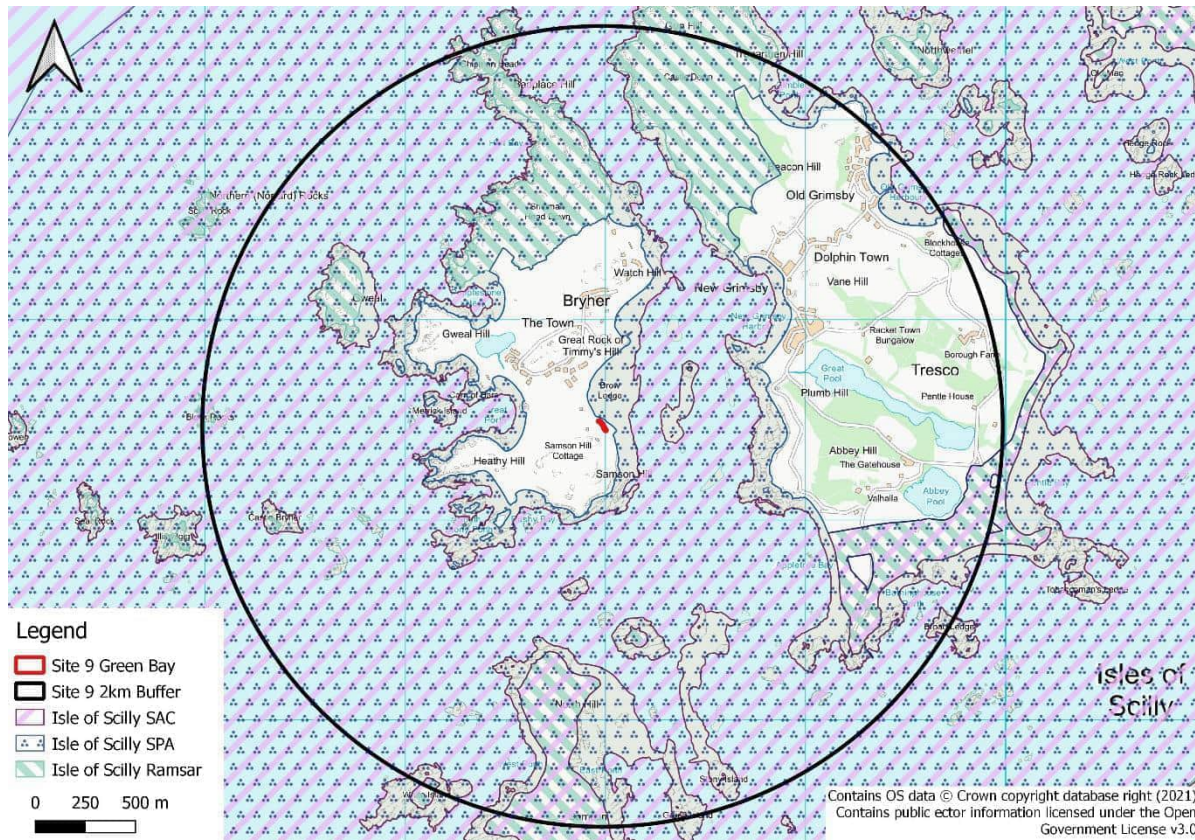


Figure 4-1: Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull
 - Storm Petrel

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment were given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Habitat loss/community simplification	<p>Materials will be delivered by barge using a landing site in the intertidal area at Green Bay beach or at an alternative site if Green Bay beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p> <p>The works are confined to the beach and dune crest and are therefore not taking place directly on any annex I habitats.</p> <p>The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	No

		<p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to the crest at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction during excavation of the crest.</p>			
	Competition from invasive non-native species (INNS)	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.</p>	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site</p>	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		avoidance and mitigation measures.			
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	<p>Reefs and sandbanks are not present within the works area. They will not be impacted.</p> <p>There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during works focussed on the dune embankment at the back of the beach.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Green Bay beach or at an alternative site if Gren Bay beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	No
Annex II species (primary reason for selection):	Habitat loss/ community simplification	No Shore Dock was recorded on site during the site survey and it is	No	No potential for effects in combination with other PPPs have been identified.	No

Shore dock		believed to be absent from the works areas.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No

		Works will not result in habitat loss of marine habitat.			
	Disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for either Storm Petrel or Lesser Black-backed Gulls. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no loss of foraging or breeding habitat for	No	No potential for effects in combination with other PPPs have been identified.	No

		Annex I species as result of the proposed scheme.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for any of the featured species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of featured species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No

	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the Ramsar. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause	Yes	In combination assessment carried forward to Appropriate	Yes

		noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar		Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Habitat loss/community simplification	The works area is not known as a breeding habitat for Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding Shag lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase,	Yes	In combination assessment	Yes

		accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.		carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No

5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey seal	Water pollution	Both
	Disturbance	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution	Both
	Disturbance	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution	Both
	Disturbance	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution	Both
	Disturbance	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 100m
Isles of Scilly SPA	Approximately 100m
Isles of Scilly Ramsar	Approximately 850m

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site

immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
<p>Annex I habitats:</p> <ul style="list-style-type: none"> • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide • Reefs 	<p>Habitat loss: Works are to the crest at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction during excavation of the crest.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Green Bay beach or at an alternative site if Green Bay beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>	<p>Yes</p>	<p>Habitat loss will only be temporary during the construction period, with habitats reinstated after the works.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.</p>	<p>Yes – although potential for small scale temporary negative impact</p>

	<p>Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. Whilst works is concentrated to the crest of the beach damage to habitats within the construction areas at the top of the beach during construction during excavation of the crest may occur.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Green Bay beach or at an alternative site if Green Bay beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>	Yes	<p>All habitats will be reinstated after works have been complete.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.</p>	Yes - although potential for Small scale temporary negative impact
	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes

	classified within the Isles of Scilly Complex SAC.			
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Northern rocks to the southwest of Bryher. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	Yes
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes

	utilised by Annex I species within the SPA.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	Yes
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may	Yes	Storm Petrel are not known to nest on Bryher however Great Black-backed gull, Shag and Lesser Black-	Yes

	disturb internationally important bird species.		backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in	Yes

			disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes

6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Kitchen Porth

Final Report

November 2022

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Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Kitchen Porth.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any Likely Significant Effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
<p>Stage 1: Screening</p>	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
<p>Stage 2: Appropriate Assessment</p>	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If</p>

HRA stage	Description
	an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Kitchen Porth is located on the northeast coast of the island of Bryher, approximate central OS Grid Reference SV 88043 15482. It is a small beach composed of mainly sand with some cobbles. The south corner of the beach is vulnerable to wave activity. This wave activity leads off the ram and embankment to the rear of the beach. Longer period waves from the Atlantic diffract around the north of the island into this area. The location of the proposed scheme can be seen in Figure 3-1.

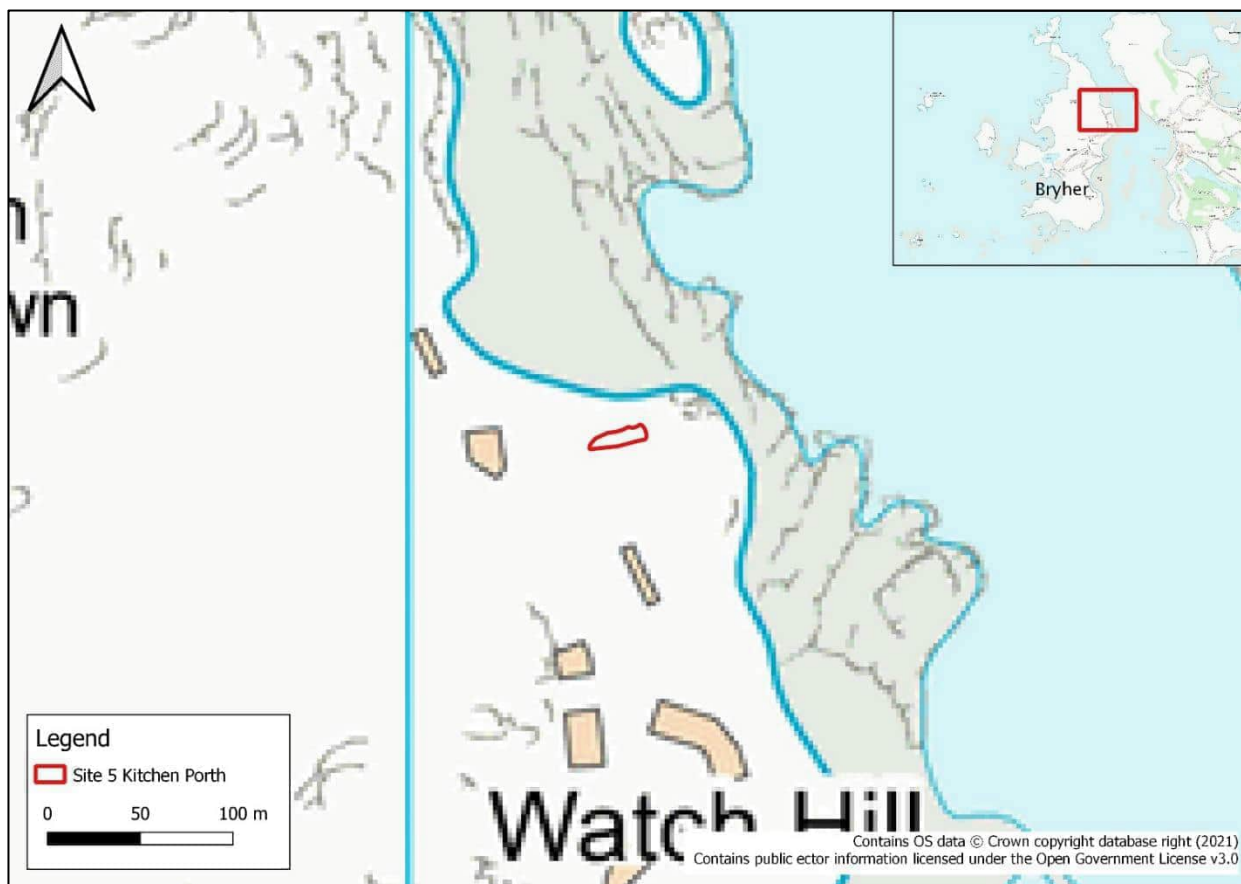


Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Kitchen Porth there is a need to increase defences to protect a cluster of residential and non-residential properties from flood risk from overtopping, along with the access road to the high-tide quay, the Shipman Head and Shipman Down (Bryher) SSSI and the Isles of Scilly Ramsar.

The proposed works include:

- The provision of additional armourstone in front of the existing structures for approximately 40m from the eastern corner of the beach up to the exit from the beach to the west to protect the exposed embankment and Ram from wave attack.
- The slope of the armourstone will be 1:2, comprising of a mix of 0.3 to 1 tonne armourstone, either reclaimed from existing resources on the island or imported. It will tie into existing levels at each end, into the existing bank to the north and into the rock outcrop to the south. The implementation of this armourstone should dissipate the wave energy and prevent direct attack on the Ram.
- The proposed armourstone does not include an impermeable layer, nor is the crest level proposed to be increased, and so some overtopping discharge is still expected to reach/percolate to the gardens of the leeward properties.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 85m west of the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA). The Isles of Scilly Ramsar site is approximately 100m north of the proposed scheme.

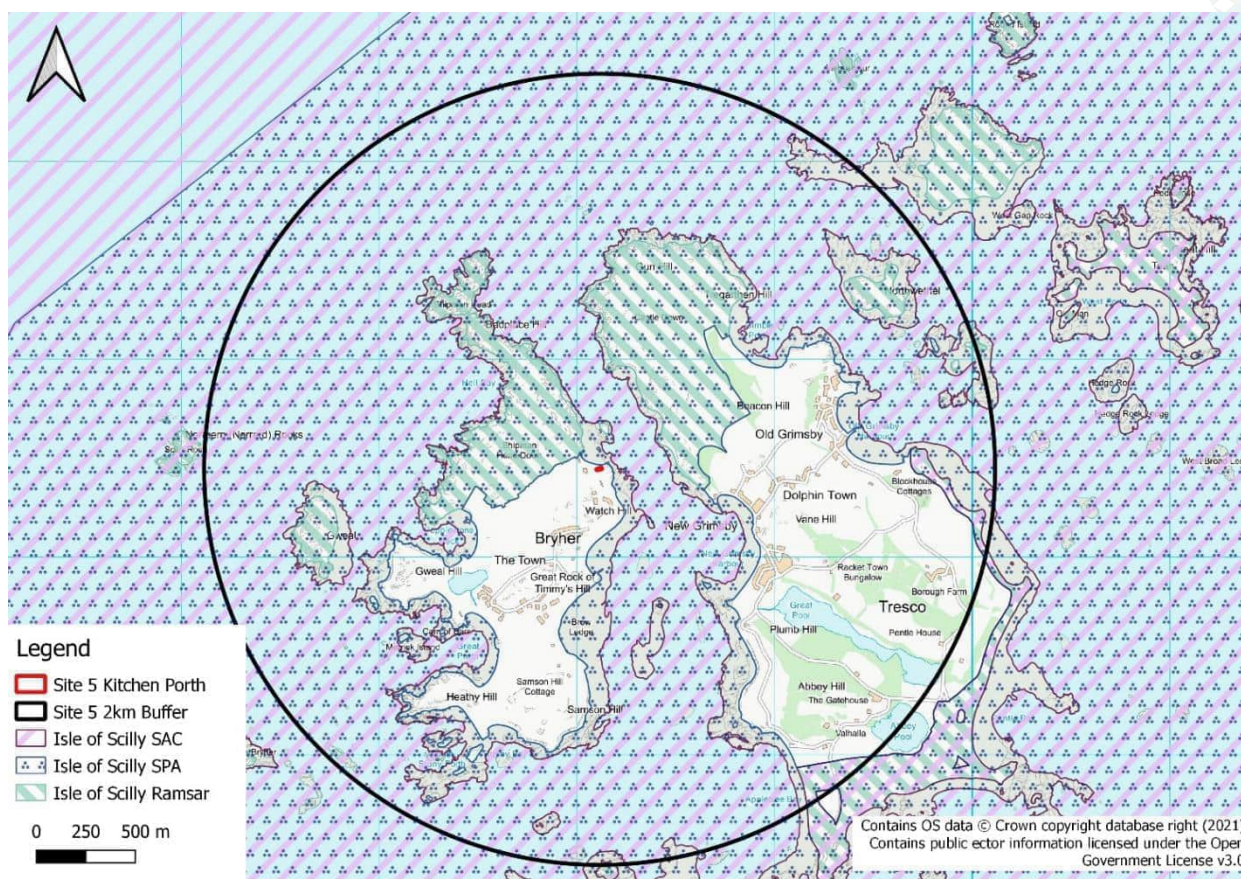


Figure 4-1: Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*

- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull
 - Storm Petrel

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
 - Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features on the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs	Habitat loss/community simplification	Materials will be delivered by barge using a landing site in the intertidal area at Kitchen Porth beach or at an alternative site if Kitchen Porth beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on Bryher however combination effects for these have been assessed in the Local Plan HRA. There is no potential for effects in combination with other PPPs.	No

		<p>The works are confined to the beach and are therefore not taking place directly on any annex I habitats. The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides. Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to the beach embankment and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction due to armour stone and material storage.</p>			
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	<p>Competition from invasive non-native species (INNS)</p>	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	<p>N/A</p>

		SAC, in the absence of suitable on-site avoidance and mitigation measures.			
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	Reefs and sandbanks are not present within the works area and will therefore not be impacted. There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during the works to the armourstone. Materials will be delivered by barge using a landing site	Yes	In combination assessment carried forward to Appropriate Assessment	

		in the intertidal area at Kitchen Porth beach or at an alternative site if Kitchen Porth beach is unsuitable. The intertidal habitat in this area consists predominantly of coarse to medium sand. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.			
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore Dock was recorded on site during the site survey and it is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		measures.			
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be	No	No potential for effects in combination with other PPPs have been identified.	No

		temporary for the duration of on-site works. Works will not result in habitat loss of marine habitat.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works,	No	No potential for effects in combination with other PPPs have been identified.	No

		works would not continue if seals were present and likely to be harmed.			
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Habitat loss/ community simplification	Given the nature of the proposed works it is not anticipated that there will be any loss of foraging or breeding habitat of breeding bird species as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the Ramsar. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding	No	No potential for effects in combination with other PPPs have been identified.	No

		habitat of breeding bird species lost as part of the proposed scheme.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species qualified under the Ramsar. Any birds	No	No potential for effects in combination with other PPPs have been identified.	No

		present in the works area can reasonably be expected to move away from harm.			
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Habitat loss/ community simplification	The works area is not known as a breeding habitat for Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding Shag lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No

5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs	Physical damage/mortality	Alone
	Water pollution	Both
	Habitat loss	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey seal	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution	Both
	Noise and visual disturbance	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution	Both
	Noise and visual disturbance	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution	Both
	Noise and visual disturbance	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 85m
Isles of Scilly SPA	Approximately 85m
Isles of Scilly Ramsar	Approximately 100m

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site

immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
<p>Annex I habitats: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
	<p>Habitat loss: Works are to the beach embankment and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction due to armour stone and material storage. Materials will be delivered by barge using a landing site in the intertidal area at Kitchen Porth beach or at an alternative site if Kitchen</p>	Yes	<p>Habitat loss will only be temporary during the construction period, with habitats reinstated after the works. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.</p>	Yes – although potential for small scale temporary negative impact

	<p>Porth beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>			
	<p>Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. Whilst works is concentrated on the beach embankment a small area of the beach will be used for armourstone storage.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Kitchen Porth beach or at an alternative site if Kitchen Porth beach is unsuitable. The landing of the barge in this area could potentially result in</p>	<p>Yes</p>	<p>All habitats will be reinstated after works have been complete.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.</p>	<p>Yes - although potential for Small scale temporary negative impact</p>

	<p>temporary damage to sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>			
<p>Annex II species (primary reason for selection):</p> <p>Shore dock</p>	<p>Water pollution:</p> <p>Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
<p>Annex II species (not primary reason for selection):</p> <p>Grey seal</p>	<p>Water pollution:</p> <p>Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
	<p>Disturbance:</p> <p>Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.</p>	Yes	<p>The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Northern rocks to the southwest of Bryher. The works area is not a known hauling out spot</p>	Yes

			for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result	Yes

			in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm Petrel are not known to nest on Bryher however Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered	Yes

			that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest	Yes

			survey data and on site prior to any works starting.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes

6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Porth Killier

Final Report

November 2022

www.jbaconsulting.com



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ISLES OF SCILLY**

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Contract

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Agnes site Porth Killer.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any Likely Significant Effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species</p>

HRA stage	Description
	within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site. If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Site 51 – Porth Killier is located on the north of St Agnes Island the southernmost populated island in the Scilly Isles. The central point of the site has OS Grid Reference of SV 88169 08490. There has been demonstrated erosion of the softer ground in front of the toe of the existing wall, this could begin to undermine the wall. There has also been displacement of the armour stone and

boulders and exposure of underlying concrete mattress revetment. The location of the proposed work can be seen in Figure 3-1.

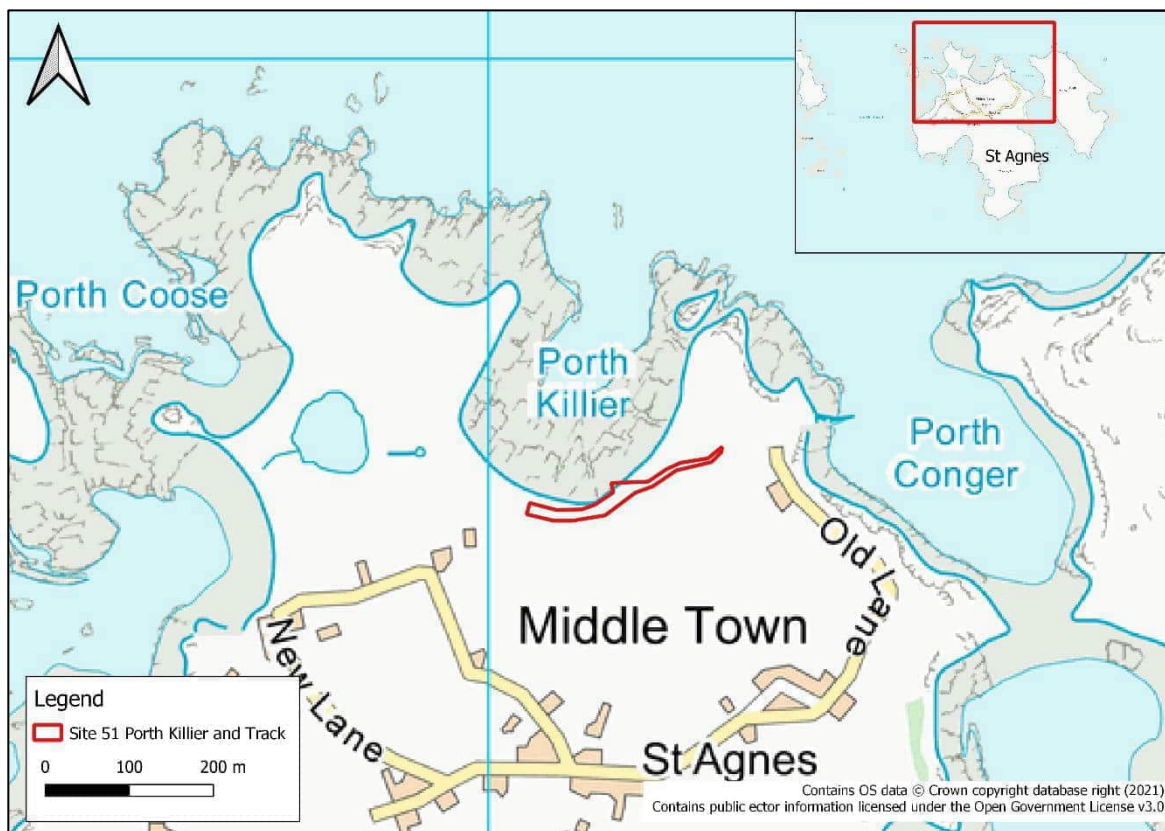


Figure 3-1 Location of proposed work

3.2 Proposed Works

Coastal erosion and flood risk at Porth Killier presents a risk of inundation and contamination at the Big Pool, along with a risk of undermining the road that roads along the southern extent of Porth Killier and residential and non-residential properties and infrastructure in the vicinity.

The Porth Killier site has been divided into three areas of intervention: the sea wall; the eastern end; and the western end. Overtopping has not occurred at the western end and therefore no works are proposed there. The proposed works for the sea wall and the eastern end are outlined below.

The seawall

- Implementation of a rock scour protection at the foundation of the seawall. Wider toe protection of 0.3 to 1.0 tonne rock size with a minimum width of 3m is recommended to protect the wall from undermining and failure, and also to reduce overtopping.
- A 30m section of the eastern side of the wall has been identified as the most damage and as such, a 3m toe-berm of 0.3 to 1.0 tonne rock armour toe berm is proposed here. In some locations where damage is more severe, local repairs may be required prior to placing the rocks.
- A 35m section on the western side has been identified as the least damaged and as such, the rock toe here will be characterised by 1.9m wide 0.3 to 1.0 tonne rocks and 1.1m of cobbles, which will tie into the existing rock headland.

- Rock material will be sourced locally where possible but will need to be imported if unavailable.

Eastern end

- Construction of a rock structure revetment with 0.3 to 1 tonne material to reduce halt ram erosion. The rock revetment would be placed up to the crest of the underside of the ram/outcrop to reduce the cut back towards the road. In order to minimise the volume of rock required, rock armour will be protected by a cobble toe that will make use of existing materials.
- The presence of the revetment will improve the stability of the halt ram and also act as a reduction to wave overtopping events.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 110m south the Isles of Scilly Complex Special Area of Conservation (SAC) and located within Isles of Scilly Special Protection Area (SPA) and Ramsar site.

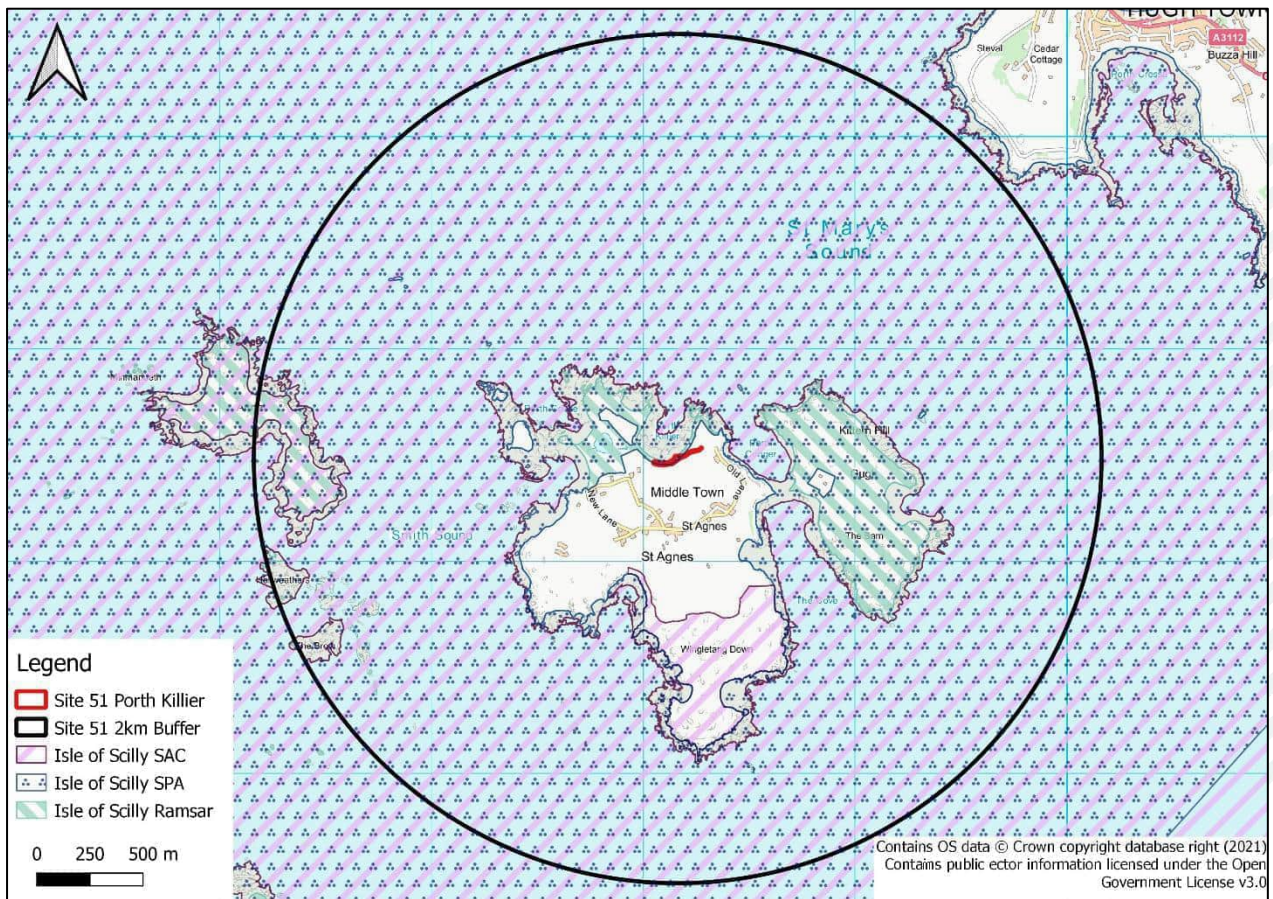


Figure 4-1: Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection: Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*

- Lesser Black-backed Gull
- Storm Petrel

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the

mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs	Habitat loss	Materials will be delivered by barge using a landing site in the intertidal area at Porth Killier beach or at an alternative site if Porth Killier beach is unsuitable. The intertidal habitat in this area predominantly of boulders and cobbles. However, between the cobbles and in areas closer to the low tide mark intertidal sands are present. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC. The works are confined to the seawall and the top of the beach and therefore not taking place directly on any annex I habitats. The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA. There is no potential for effects in combination with other PPPs.	No

		<p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to restore the seawall at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach with areas being used as sand storage and storage for other imported material.</p>			
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	<p>A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.</p>	Yes
	Alteration to coastal processes	<p>The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.</p>	No	<p>There is no potential for effects in combination with other PPPs.</p>	No
	Physical damage/mortality	<p>Reefs and sandbanks are not present within the works area. They will not be impacted.</p> <p>There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. While works are focussed on the seawall at the back of the beach, other areas of the beach will be used for storage of sand and imported material.</p> <p>Materials will be delivered by barge using</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA.</p>	No

		a landing site in the intertidal area at Porth Killier beach or at an alternative site if Porth Killier beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.		There is no potential for effects in combination with other PPPs.	
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact the Annex I habitats. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (primary reason for selection): Shore dock	Habitat loss	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon	No	No potential for effects in combination with other PPPs have been identified.	No

		coastal processes either on its own or in combination with the other schemes.			
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey Seal	Direct habitat loss	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in habitat loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC,	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		in the absence of suitable on-site avoidance and mitigation measures.			
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Grey Seal habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed	Direct habitat loss	The works area is not known as a breeding or foraging habitat for either Storm Petrel or Lesser Black-backed Gulls. Any habitat loss will be temporary, as the beach will be	No	There are no other known projects which overlap with the works areas. There is no potential for	No

Gull		fully reinstated. There will therefore be no loss of foraging or breeding habitat for Annex I species as result of the proposed scheme.		effects in combination with other PPPs.	
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment.	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact Storm Petrel or Lesser Black-backed Gull. Hottentot Fig was recorded during the survey and is present within and near the	No	No potential for effects in combination with other PPPs have been identified.	No

		works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Storm Petrel or Lesser Black-backed Gull. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.			
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Direct habitat loss	The works area is not known as a breeding or foraging habitat for any of the featured species. Any habitat loss will be temporary, as the beach will be fully reinstated. There will therefore be no foraging or breeding habitat of featured species as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and visual disturbance to featured bird species in the area.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for featured species. Any birds present in the works area can	No	There are no other known projects which overlap with the works areas.	No

		reasonably be expected to move away from harm.		There is no potential for effects in combination with other PPPs.	
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the featured species present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on the featured species' habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (identified subsequent to designation): Shag	Direct habitat loss	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Grey Seal habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No

5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Noise and visual disturbance	Both
	Water pollution	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (identified subsequent to designation): Shag Lesser Black-backed Gull Storm Petrel	Noise and visual disturbance	Both
	Water pollution	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 110m
Isles of Scilly SPA	Within Site
Isles of Scilly Ramsar	Within Site

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site

immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I Habitats: Sandbanks Mudflats Reefs	<p>Habitat Loss: Works are to restore the seawall at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Porth Killier beach or at an alternative site if Porth Killier beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats</p>	Yes	<p>Habitat loss will only be temporary during the construction period, with habitats reinstated after the works.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.</p>	Yes - although potential for small scale temporary negative impact

	present between the islands and these will not be impacted			
	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. While works are focussed on the seawall at the back of the beach, some sand and imported material will be stored lower down, near or within the sandflats. Materials will be delivered by barge using a landing site in the intertidal area at Porth Killier beach or at an alternative site if Porth Killier beach is unsuitable. The landing of the barge in this area could potentially result in	Yes	Any habitats damaged during construction works will be reinstated when works are complete. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.	Yes

	<p>temporary damage to sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>			
<p>Annex II species (primary reason for selection):</p> <p>Shore dock</p>	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
<p>Annex II species (not primary reason for selection):</p> <p>Grey seal</p>	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
	<p>Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that</p>	Yes	<p>The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Western Rocks the southwest of St Agnes. The works area is not a known hauling out spot</p>	Yes

	are hauled out in the surrounding area.		for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	
Isles f Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrel and Lesser black-backed gull are known to breed within the SPA on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered	Yes

			unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrel, Lesser black-backed gull and Great Black-backed Gull are known to breed within the SPA on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site	Yes

			located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and	Yes	Storm petrel and Lesser black-backed gull are known to breed within the Ramsar site on St Agnes. However no	Yes

	activity which may disturb breeding bird species.		known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes

	<p>Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.</p>	<p>Yes</p>	<p>Shag have not been recorded breeding on St Agnes and therefore it is not considered that the proposed works will have any significant effect on breeding Shag within the Ramsar site. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting.</p>	<p>Yes</p>
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6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Porth Coose

Final Report

November 2022

www.jbaconsulting.com



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ISLES OF SCILLY**

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Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Agnes site Porth Coose.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any Likely Significant Effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species</p>

HRA stage	Description
	within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site. If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Porth Coose is located on the northwest boarder of St Agnes Island the southernmost populated island in the Scilly Isles. The site extends along approximately 140m of beach on the north west of the island with a central OS Grid Reference of SV 87744 08596. Big Pool SSSI sits behind the site, separated from the beach by low sand dunes, and provides the islands main drinking water supply. The coastline faces north and has areas of weakness where the

revetment and erosion matting are exposed and the matting damaged. The displacement of rock armour stone and boulders has led to the exposure of the underlying concrete mattress revetment. The location of the proposed work can be seen in Figure 3-1.

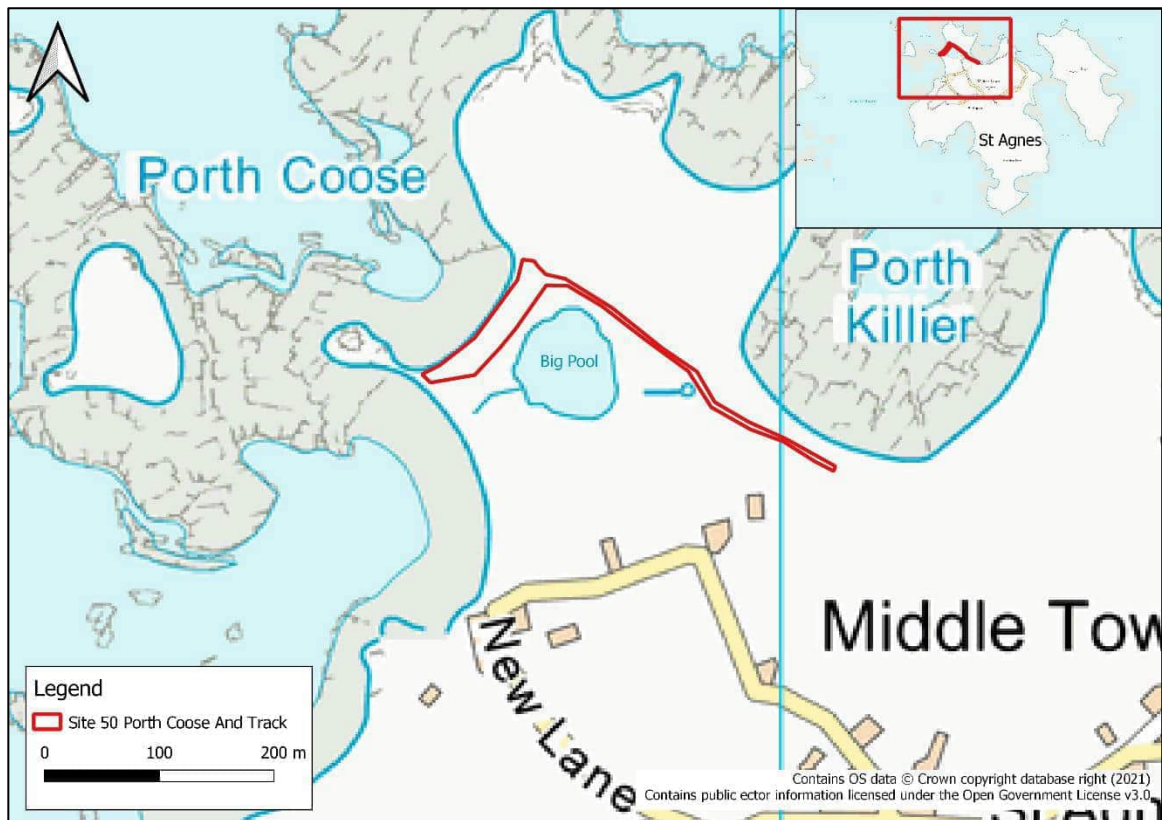


Figure 3-1 Location of the proposed work

3.2 Proposed Work

Porth Coose provides protection to Big Pool, important freshwater habitat, wells, aquifers and local infrastructure. Defences have historically been severely overtopped and as such enhanced defences are required.

The proposed works include:

- Provision of a more robust and wider ridge crest along the entire length of the Porth Coose. The crest elevation would be increased through recharge using local and imported material, with rock bags with the rear filled with site won material to grade to existing levels.
- The bags will be placed on a prepared geotextile surface at the top of the slopes and fill material is to be placed behind to tie in the top of the bags to the ground behind. A geomat will be placed to stabilise this slope and encourage establishment of vegetation.
- The crest elevation will be increased to prevent overtopping and should be at approximately +7.3m.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 55m south of the Isles of Scilly Complex Special Area of Conservation (SAC) and located within The Isles of Scilly Special Protection Area (SPA) and Ramsar site.

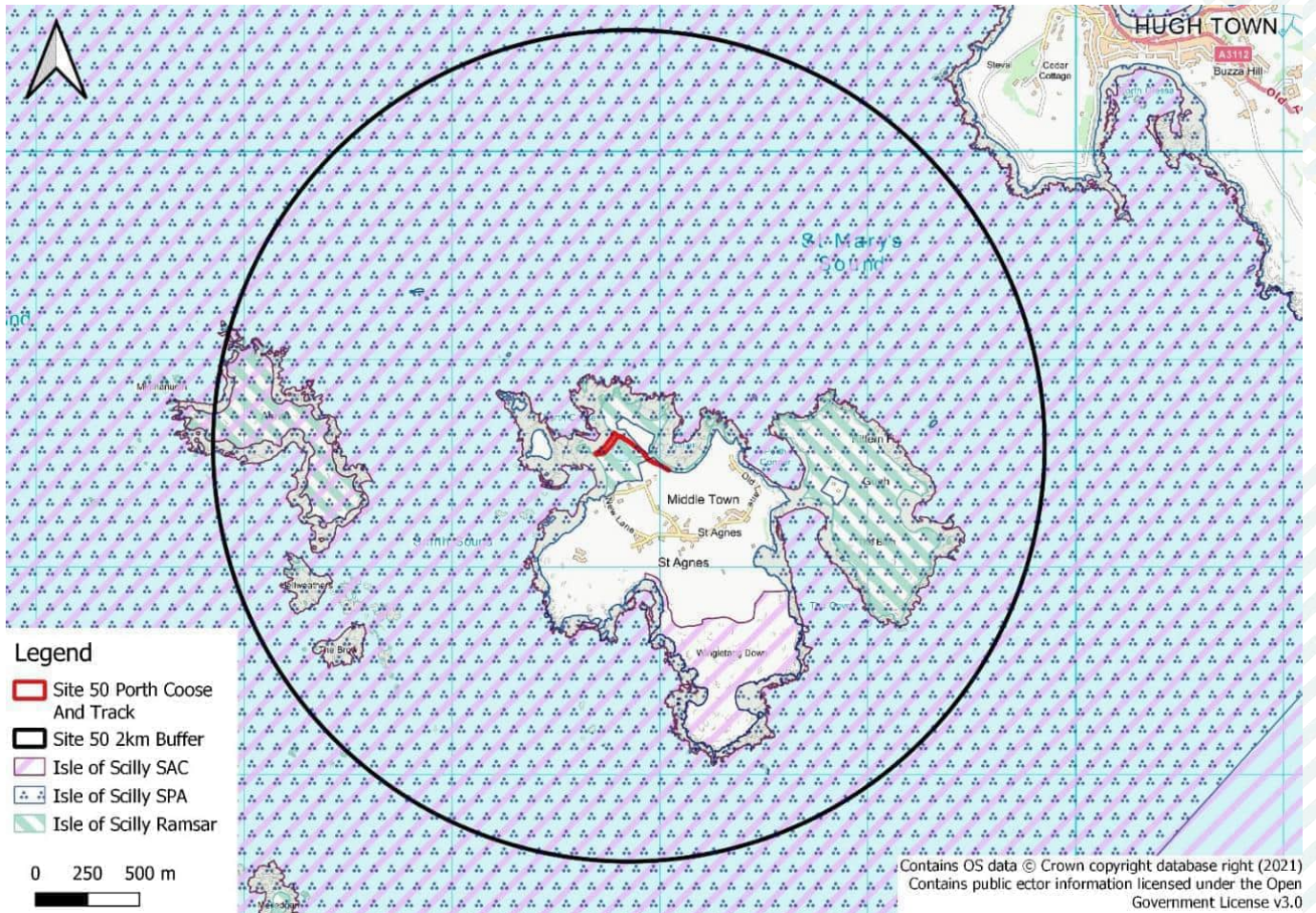


Figure 4-1 Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:

- Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull
 - Storm Petrel

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)

- Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)

- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs	Habitat loss	<p>Materials will be delivered by barge using a landing site in the intertidal area at Porth Coose beach or at an alternative site if Porth Coose beach is unsuitable. The intertidal habitat in this area predominantly of boulders and cobbles. However, between the cobbles and in areas closer to the low tide mark intertidal sands are present. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p> <p>The works are confined to the beach and frontage and are therefore not taking place directly on any annex I habitats.</p> <p>The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.</p> <p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to</p>	Yes	<p>There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	No

		restore the Porth Coose frontage and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	Reefs and sandbanks are not present within the works area. They will not be impacted. There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. Materials will be delivered by barge using a landing site in the intertidal area at Porth Coose beach or at an alternative site if Porth Coose beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species	No	No potential for effects in combination with other PPPs have been	No

		likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact the Annex I habitats. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.		identified.	
Annex II species (primary reason for selection): Shore dock	Habitat loss	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the	No	No potential for effects in combination with other PPPs have been	No

		potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.		identified.	
Annex II species (not primary reason for selection): Grey Seal	Direct habitat loss	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in habitat loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in	No	There is no potential for effects in combination with other PPPs.	No

		combination with the other schemes.			
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Grey Seal habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Direct habitat loss	The works area is not known as a breeding or foraging habitat for either Storm Petrel or Lesser Black-backed Gulls. Any habitat loss will be temporary, as the beach will be fully reinstated. There will therefore be no loss of foraging or breeding habitat for Annex I species as result of the proposed scheme.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment.	Yes

	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact Storm Petrel or Lesser Black-backed Gull. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Storm Petrel or Lesser Black-backed Gull. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No
Breeding bird	Direct habitat loss	The works area is not known as a breeding	No	No potential for effects in	No

assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel		or foraging habitat for any of the featured species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of featured species as part of the proposed scheme.		combination with other PPPs have been identified.	
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and visual disturbance to featured bird species in the area.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for featured species. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which	No	No potential for effects in combination with other PPPs have been identified.	No

		would impact the featured species present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on the featured species' habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.			
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Direct habitat loss	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon	No	In combination assessment carried forward to Appropriate Assessment	No

		coastal processes either on its own or in combination with the other schemes.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Grey Seal habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.			

5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Noise and visual disturbance	Both
	Water pollution	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (identified subsequent to designation): Shag Lesser Black-backed Gull Storm Petrel	Noise and visual disturbance	Both
	Water pollution	Both



6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 55m
Isles of Scilly SPA	Within Site
Isles of Scilly Ramsar	Within Site

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site

immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
<p>Annex I habitats:</p> <ul style="list-style-type: none"> -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs 	<p>Habitat Loss: Works are to restore the Porth Coose frontage there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Porth Coose beach or at an alternative site if Porth Coose beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted</p>	Yes	<p>Habitat loss will only be temporary during the construction period, with habitats reinstated after the works.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.</p>	Yes - although potential for small scale temporary negative impact
	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could</p>	Yes	Strict pollution prevention measures will be	Yes

	<p>cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>		<p>implemented on site, as outlined in Section 6.2.1</p>	
	<p>Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during construction.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Porth Coose beach or at an alternative site if Porth Coose beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>	<p>Yes</p>	<p>All habitats will be reinstated once works have been completed.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.</p>	<p>Yes</p>
<p>Annex II species (primary reason for selection): Shore dock</p>	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	<p>Yes</p>

Annex II species (not primary reason for selection): Grey seal	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Western Rocks the southwest of St Agnes. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	Yes
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes

	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrel and Lesser black-backed gull are known to breed within the SPA on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	Yes
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction	Yes	Storm petrel, Lesser black-backed gull and Great	Yes

	activity will cause an increased amount of noise and activity which may disturb breeding bird species.		Black-backed Gull are known to breed within the SPA on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction	Yes	Storm petrel and Lesser black-backed gull are known	Yes

	activity will cause an increased amount of noise and activity which may disturb breeding bird species.		to breed within the Ramsar site on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise	Yes	Shag have not been recorded breeding on St Agnes and therefore it is not considered that the	Yes

	and activity which may disturb breeding bird species.		proposed works will have any significant effect on breeding Shag within the Ramsar site. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
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6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Periglis

Final Report

November 2022

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ISLES OF SCILLY**

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Agnes site Periglis Beach.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any Likely Significant Effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
<p>Stage 1: Screening</p>	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
<p>Stage 2: Appropriate Assessment</p>	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If</p>

HRA stage	Description
	an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p> <p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Periglis is located in the northern extent of the island of St Agnes approximate central OS Grid Reference SV 87737 08452. The beach is composed of both sand and pebbles and there are numerous residential and non-residential properties located at the southern extent of Periglis beach, including St Agnes church. Big Pool and Browarth Point (St Agnes) SSSI and Isles of Scilly Ramsar site are located immediately adjacent to Periglis beach.

Periglis has a natural embankment helping to protect Big Pool, the outfall from which goes beneath the embankment. The seaward face of the embankment

suffers from frequent erosion at higher tides and as such, the geotextile mesh and repairs to the bank after the 2014 storms have not been successful. One tonne dumpy bags filled with shingle form much of the central part of the bank where the bank was breached. Additional rocks and boulders have been added to the defence near the beach entrance



Figure 3-1: Location of proposed scheme.

3.2 Proposed Works

Defences at Periglis provide protection for residential and non-residential properties, infrastructure and Big Pool. As such, there is a need to increase these defences which suffer from frequent erosion.

The proposed development includes:

- Protection of Periglis beach through use of geobags, laid on a geomat and wrapped in geotextile, and covered with excavated cobble/sand material along most of the bay. Part of the existing material at the top of the beach (mix of sand and cobbles) will be excavated, from the seaward face, to allow the positioning of geobags in the existing footprint in the core of the dune/bank. The geobags will be filled with dry sand of density around 1600kg/m³. If sand material is not available, the geobags may be filled with graded local or imported rocks using high performance nets.
- The geobags will be covered/protected by a mix of local sand and cobbles and topped up by locally excavated material where available. As such, the geobags will not be exposed directly to the waves and will not be directly

visible. The fill will be protected with a matting to encourage establishment of vegetation and to provide additional erosion protection. The new reshaped seaward slope will follow the natural slope of the existing dune/bank.

- Crest elevations will be raised to approximately +7.5m, and crest widths increased to reach a minimum of 4m to prevent overtopping. In order to achieve this increase in elevation, the existing dune/bank will be topped up and covered using local materials with biodegradable matting to retain the material whilst the grasses and plants establish. The natural plant fibres will provide a system of erosion control of the material positioned over the top of the dune/bank, while local flora gets naturally established. A local source of recharge sediment will be used for the dunes/banks. If no local material is available, filling material will be imported, possibly from local quarries in Cornwall.
- The slipway already has a stop log fitting and stop logs and therefore no further action is required.
- This approach will enhance the dune/ bank stability and will provide a robust and permanent approach in terms of protection from coastal erosion.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 55m east of the Isles of Scilly Complex Special Area of Conservation (SAC) and is located within the Isles of Scilly Special Protection Area (SPA) Ramsar site.

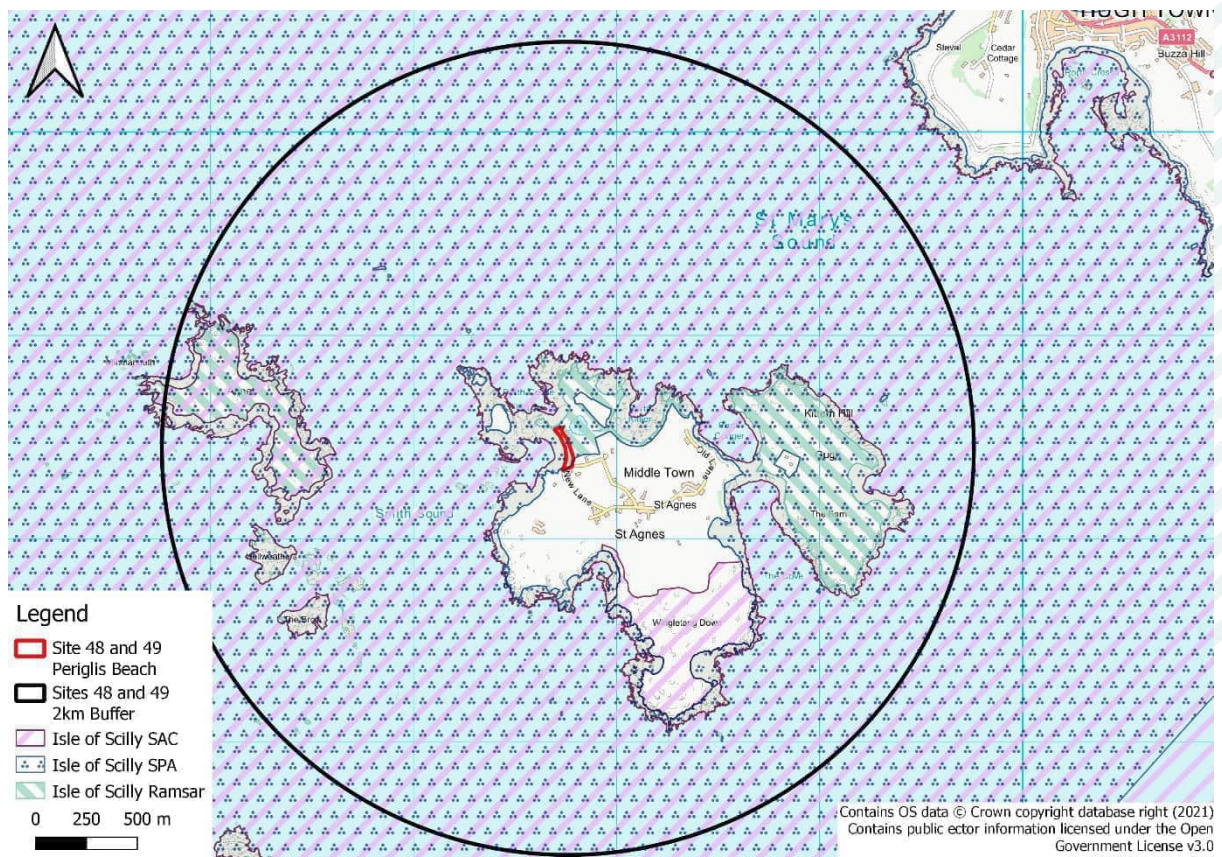


Figure 4-1: Designated Site

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets. Annex I habitats under the Habitat Regulations that are a primary reason for selection:

- Sandbanks which are slightly covered by sea water all the time
- Mudflats and sandflats not covered by seawater at low tide
- Reefs

Annex II species that are a primary reason for selection:

- Shore dock *Rumex rupestris*

Annex II species present as qualifying feature, but not primary reason for selection

- Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:

- Storm Petrel *Hydrobates pelagicus*
- Lesser Black-backed Gull *Larus fuscus*

The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:

- Great Black-backed Gull *Larus marinus*
- Shag *Phalacrocorax aristotelis*
- Lesser Black-backed Gull
- Storm Petrel

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):

- Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

- Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Breeding Birds	Grey Seal	Shore Dock
Direct habitat loss	✓	✓	✓	✓	✓	✓
Noise and visual disturbance	X	X	X	✓	✓	X
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	✓	X
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs	Habitat loss	<p>Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The intertidal habitat in this area predominantly of boulders and cobbles. However, between the cobbles and in areas closer to the low tide mark intertidal sands are present. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p> <p>The works are confined to the beach and sand dunes and are therefore not taking place directly on any annex I habitats.</p> <p>The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides.</p> <p>Similarly, reefs are not present within the works areas.</p> <p>The beach within the site meets the criteria of 'mudflats' as a sandflat. Works are to restore the dunes at the rear of the beach and there will be no permanent loss</p>	Yes	<p>There are no other known projects which overlap with the works areas.</p> <p>As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA.</p> <p>There is no potential for effects in combination with other PPPs.</p>	No

		of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	Reefs and sandbanks are not present within the works area. They will not be impacted. There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. While works are focussed on the crest at the back of the beach, some sand and cobbles will be excavated from lower down, near or within the sandflats. This will then be replaced following the positioning of geocontainers. Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.	Yes	There are no other known projects which overlap with the works areas. As part of this project, there are works in nearby sections of coastline on St Agnes however combination effects for these have been assessed in the Local Plan HRA. There is no potential for effects in combination with other PPPs.	No
	Competition from	The proposed works have the potential to	No	No potential for effects in	No

	invasive non-native species (INNS)	spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact the Annex I habitats. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.		combination with other PPPs have been identified.	
Annex II species (primary reason for selection): Shore dock	Habitat loss	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	A pollution event at another site as part of the same project could act in combination with a pollution spill at this site.	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from	Hottentot Fig was recorded during the	No	No potential for effects in	No

	invasive non-native species (INNS)	survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.		combination with other PPPs have been identified.	
Annex II species (not primary reason for selection): Grey Seal	Direct habitat loss	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in habitat loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is	No	There is no potential for effects in combination with other PPPs.	No

		unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.			
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Grey Seal habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Direct habitat loss	The works area is not known as a breeding or foraging habitat for either Storm Petrel or Lesser Black-backed Gulls. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no loss of foraging or breeding habitat for Annex I species as result of the proposed scheme.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I	Yes	In combination assessment carried forward to Appropriate	Yes

	species within the Isles of Scilly SPA.		Assessment.	
Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact Storm Petrel or Lesser Black-backed Gull. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Storm Petrel or Lesser Black-backed Gull. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No

Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Direct habitat loss	The works area is not known as a breeding or foraging habitat for any of the featured species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of featured species as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and visual disturbance to featured bird species in the area.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	The works areas do not contain any nesting habitat for featured species. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species	No	No potential for effects in combination with other PPPs have been	No

		likely to be introduced or spread which would impact the featured species present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on the featured species' habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.		identified.	
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Direct habitat loss	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is	No	No potential for effects in combination with other PPPs have been identified.	No

		unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact on Grey Seal habitat. Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.	No	No potential for effects in combination with other PPPs have been identified.	No

5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I Habitats: Sandbanks Mudflats Reefs Mudflats Reefs	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Noise and visual disturbance	Both
	Water pollution	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Noise and visual disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Noise and visual disturbance	Both
	Water pollution	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag Lesser Black-backed Gull Storm Petrel		

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 55m
Isles of Scilly SPA	Within Site
Isles of Scilly Ramsar	Within Site

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site

immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
<p>Annex I habitats:</p> <ul style="list-style-type: none"> -Sandbanks which are slightly covered by sea water all the time -Mudflats and sandflats not covered by seawater at low tide -Reefs 	<p>Habitat Loss: Works are to restore the dunes at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat.</p> <p>Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the</p>	<p>Yes</p>	<p>Habitat loss will only be temporary during the construction period, with habitats reinstated after the works.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.</p>	<p>Yes- although potential for small scale temporary negative impact</p>

	islands and these will not be impacted			
	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats'. While works are focussed on the crest at the back of the beach, some sand and cobbles will be excavated from lower down, near or within the sandflats. Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflat habitat.	Yes	The excavated sand and cobbles from the lower beach will be replaced following the positioning of geocontainers. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.	Yes

	Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.			
Annex II species (primary reason for selection): Shore dock	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
Annex II species (not primary reason for selection): Grey seal	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Western Rocks the southwest of St Agnes. The works area is not a known hauling out spot for seals, although it is possible it is occasionally	Yes

			used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	
Isles f Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrel and Lesser black-backed gull are known to breed within the SPA on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have	Yes

			any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Storm petrel, Lesser black-backed gull and Great Black-backed Gull are known to breed within the SPA on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest	Yes

			proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may	Yes	Storm petrel and Lesser black-backed gull are known to breed within the Ramsar site on St Agnes. However no known breeding sites are in close proximity to any	Yes

	disturb breeding bird species.		proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting. Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will	Yes	Shag have not been recorded breeding on St Agnes and therefore it is	Yes

	cause an increased amount of noise and activity which may disturb breeding bird species.		not considered that the proposed works will have any significant effect on breeding Shag within the Ramsar site. However, this will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
--	--	--	--	--

6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.

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Isles of Scilly Sea Defences Habitats Regulations Assessment (HRA)

Lower Town Beach

Final Report

November 2022

www.jbaconsulting.com



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ISLES OF SCILLY**

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Contract

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
bb	Abbreviation

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Stinking Porth, Great Porth North of Great Carn, Green Bay, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Martin's site Lower Town Beach.

1.2 Legislative Context

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the 'Habitats Directive' was adopted in 1992. The Directive promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore certain natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Directive establishes the requirement for a European ecological network of protected sites by designating SACs for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to SPAs classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network.

The Directive is transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations require that an HRA is undertaken by a Competent Authority prior to the issue of any consent to consider whether a proposed project is likely to have a significant effect on a Natura 2000 site. Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within an HRA. Together, SACs, SPAs and Ramsar sites are known as 'European sites'.

For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, a formal screening for any Likely Significant Effects (either alone or in combination

with other plans or projects) on a European site(s) is required. The screening assessment is based on available ecological information on the designated site(s), other plans, projects, and policies relevant to the area and details of the proposed works.

Following the recent European Court of Justice (ECJ) judgement in the case of “People over Wind & Sweetman” (Case C-323/17), measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, cannot be considered at the screening stage.

If the screening assessment concludes that the project may have a significant adverse effect on the conservation objectives of the site(s), or that such an effect cannot be ruled out (adopting a precautionary approach) an Appropriate Assessment must be carried out. An Appropriate Assessment involves an assessment of the potential effects of a project on the conservation objectives of the site(s). If significant adverse effects are identified, mitigation or avoidance measures can be applied.

If it cannot be concluded that the works will not adversely impact upon the integrity of the site(s), the project will not be able to proceed without further conditions and/or assessment.

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species</p>

HRA stage	Description
	within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site. If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.
Stage 3: Assessment where no alternatives and adverse impacts remain	Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified. If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed. If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.
Stage 4: Compensatory measures	Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Consultation

This report will be submitted to The Council of the Isles of Scilly. HRA is an iterative process and further consultations may be required.

2.4 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Lower Town Beach is located on the northwest boarder of St Martins Island on the central north margins of the Isles of Scilly archipelago. The site extends from the northeast corner of Lower Town to the beach and footpaths on the west, the approximate central OS Grid Reference is SV 91508 16145. This is the only island with sand dunes on its southern coast and they are under possible threat from climate change. However, they have been showing positive signs of self-repair

with increasing successional grass coverage, following the 2014 storms that hit the isles of Scilly. There are signs of erosion due to human activity from access to the beach and from cabling that has become exposed at the Lower Town Beach. The location of the proposed work can be seen in Figure 3-1.

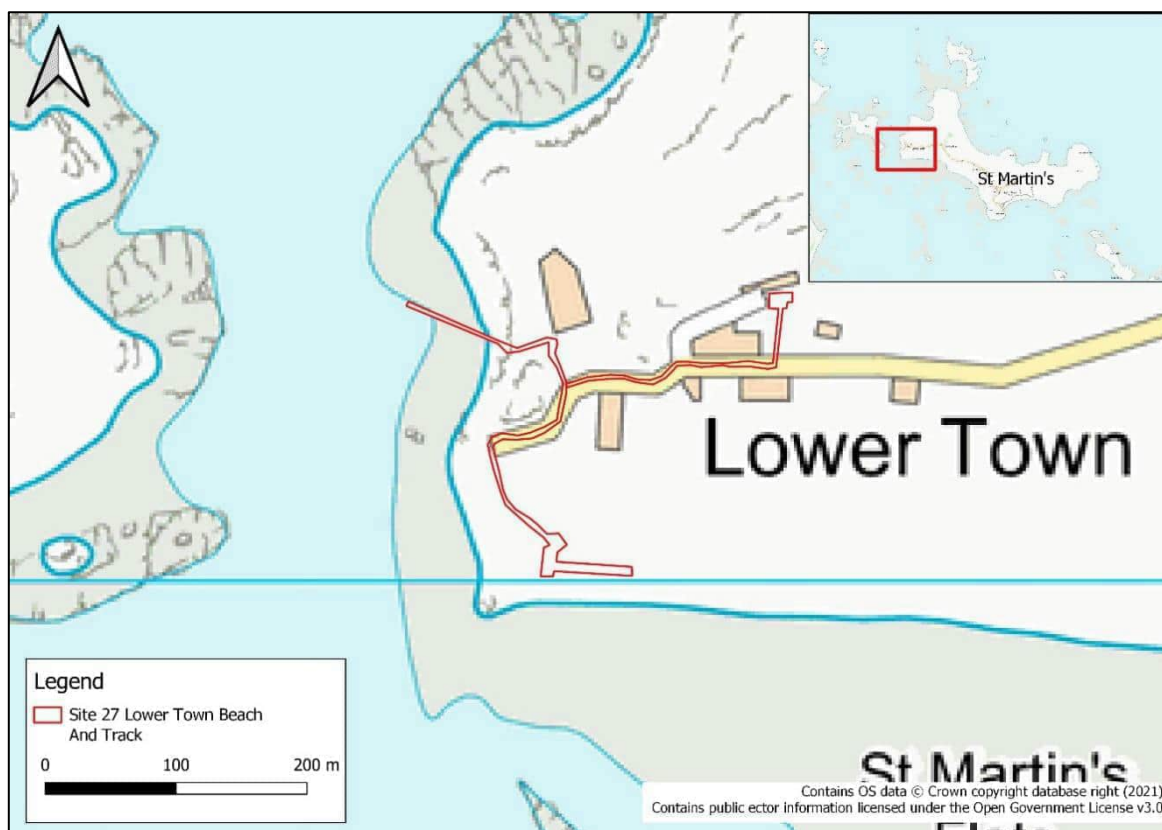


Figure 3-1 Location of proposed scheme

3.2 Proposed Works

The main objective of the proposed works at Lower Town Beach are to prevent further erosion caused by human activity which may erode and weaken dune defences.

The proposed works include:

- Fencing off the most sensitive area of dunes at the rear of the beach, including the area to the east of the access track where cabling has become exposed to help recovery by limiting access to this area and encouraging accretion of sand at the foot of the dunes.
- Additional erosion protection for the beach access at the west of the beach. This is proposed to be an open grid product appropriate for vehicle loading that will fill with sand to match the existing appearance whilst providing erosion protection to this area.
- General pedestrian footpath management to limit and control access to the beach through provision of signage and short sections of fencing to allow access locations through the dunes along the beach time to recover, whilst still providing different access points through the dunes, without the need for any restoration or other intervention.
- Provision of removable slipway that can be lain as needed and removed and stored during winter to enhance beach access. This will be an aluminium mat

that can be rolled out and back up as required with a maximum axle load of 13 tonnes to meet the requirements of the tractors and boat trailers typically used here.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located 30m north of the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA). The Isles of Scilly Ramsar sites is approximately 370m west of the proposed scheme on the island of Tean.

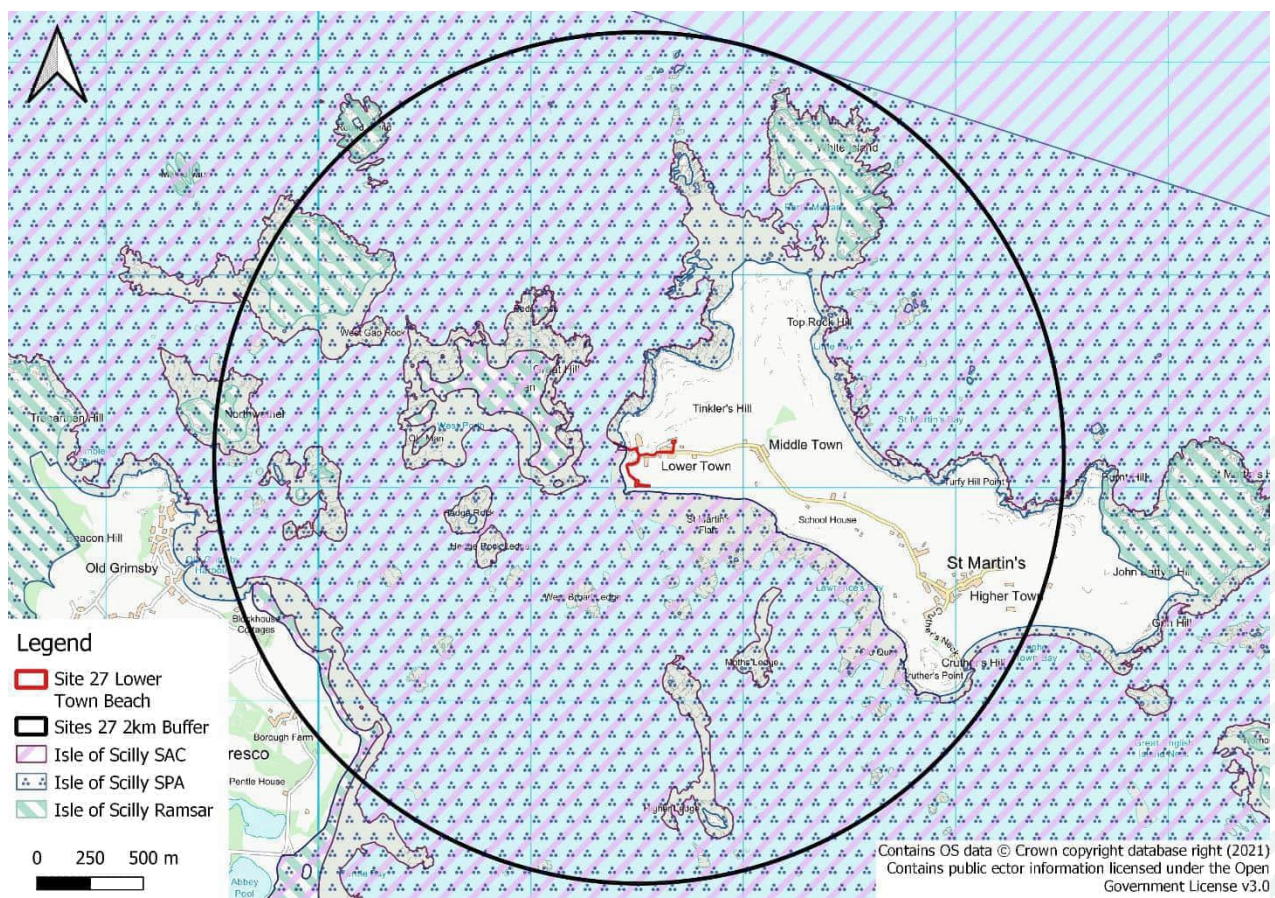


Figure 4-1 Designated Sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection: Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time

- Mudflats and sandflats not covered by seawater at low tide
- Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies for SPA designation by supporting populations of European importance of the following Annex I species from the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) during the Breeding Season:
 - Storm Petrel *Hydrobates pelagicus*
 - Lesser Black-backed Gull *Larus fuscus*
- The site qualifies for SPA designation under Article 4.2 of the Directive by regularly supporting at least 20,000 seabirds during the breeding season, including:
 - Great Black-backed Gull *Larus marinus*
 - Shag *Phalacrocorax aristotelis*
 - Lesser Black-backed Gull
 - Storm Petrel

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

- Species regularly supported during the breeding season:

- European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
- Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

- Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance

- Water pollution
- Air pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

5.3 Potential in-combination effects

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.4 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 5.3. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I Habitats: Sandbanks Mudflats Reefs	Habitat loss/community simplification	The works are confined to the beach and dunes and are therefore not taking place directly on any annex I habitats. The habitat 'sandbanks' only includes sandbanks which are slightly covered by seawater at all times. Works will be limited to areas of the beach which are dry or inundated only at high tides. Similarly reefs are not present within the works areas.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial	No	There is no potential for effects in	No

		<p>invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS tide. There is therefore negligible risk of spreading or introducing marine INNS.</p>		combination with other PPPs.	
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	N/A

	Alteration to coastal processes	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. A coastal processes assessment was undertaken as part of an EIA; this concluded that the scheme is unlikely to have a significant impact upon coastal processes either on its own or in combination with the other schemes.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage/mortality	Reefs and sandbanks are not present within the works area and will therefore not be impacted. There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during the erosion protection works.	Yes	In combination assessment carried forward to Appropriate Assessment	
Annex II species (primary reason for selection): Shore dock	Habitat loss/community simplification	No Shore Dock was recorded on site during the site survey and it is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No

	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore Dock was recorded on site during the site survey. It is believed to be absent from the works areas.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will	No	No potential for effects in combination with other PPPs have been identified.	No

		<p>result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seals would be negligible. Habitat loss would be temporary for the duration of on-site works.</p> <p>Works will not result in habitat loss of marine habitat</p>			
	Disturbance	<p>Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal that are hauled out.</p> <p>There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals in the sea.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in</p>	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS) tide level. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
Annex I species: Storm Petrel Lesser Black-backed Gull	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for either Annex I species. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of Annex I species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No

	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Annex I species within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Annex I species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Breeding bird assemblage: Great Black-backed Gull Shag	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the SPA. Any habitat loss will be temporary, as the sand dunes and beach	No	No potential for effects in combination with other PPPs have been identified.	No

<p>Lesser Black-backed Gull Storm Petrel</p>		<p>will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.</p>			
	<p>Noise and visual disturbance</p>	<p>Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly SPA.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	<p>Yes</p>
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	<p>Yes</p>

	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm. No Likely significant effect	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Habitat loss/ community simplification	The works area is not known as a breeding habitat for species as qualifying features of the Ramsar. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species qualified under the Ramsar. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Habitat loss/ community simplification	The works area is not known as a breeding habitat for Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully	No	No potential for effects in combination with other PPPs have been identified.	No

		reinstated. There will therefore be no foraging or breeding habitat of breeding Shag lost as part of the proposed scheme.			
	Noise and visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to breeding bird assemblages within the Isles of Scilly Ramsar.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag. Any birds present in the works area can reasonably	No	No potential for effects in combination with other PPPs have been identified.	No

		be expected to move away from harm.			
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5.5 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I Habitats: Sandbanks Mudflats Reefs	Physical damage/mortality	Alone
	Water pollution	Both
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey seal	Water pollution	Both
	Disturbance	Both
Isles of Scilly SPA		
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution	Both
	Disturbance	Both
Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel	Water pollution	Both
	Disturbance	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): Storm Petrel Lesser black-backed gull	Water pollution	Both
	Disturbance	Both
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution	Both
	Disturbance	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 30m
Isles of Scilly SPA	Approximately 30m
Isles of Scilly Ramsar	Approximately 350m

6.2.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m) with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site

immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Construction Environmental Management Plan (CEMP).

6.3 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I Habitats: Sandbanks Mudflats Reefs	Physical damage/mortality: There is the potential for works to damage sandflats, which are included in the annex I habitat 'mudflats' during the erosion protection works.	Yes	All habitats will be reinstated after works have been complete.	Yes
	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that	Yes	The proposed scheme is not located near any known breeding colonies, with the closest main seal breeding area being the Eastern	Yes

	are hauled out in the surrounding area.		Isles to the southeast of St Martins. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seals would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.	
Isles of Scilly SPA				
Annex I species: Storm Petrel Lesser Black-backed Gull	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Annex I species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.	Yes	Storm petrels are not known to nest on St Martins or on the island of Tean (the closest island also designated within the SPA) however Lesser black-backed gulls are known to nest within the SPA to the west of the proposed site on Tean. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is	Yes

			<p>therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.</p> <p>Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds</p>	
<p>Breeding bird assemblage: Great Black-backed Gull Shag Lesser Black-backed Gull Storm Petrel</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
	<p>Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb internationally important bird species.</p>	Yes	<p>Greater black-backed gulls and Shag are known to breed within the SPA on St Martins, whilst Lesser black-backed gulls are known to nest within the SPA to west of the proposed site on Tean. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the SPA and it is therefore not considered that the works will result in disturbance to these</p>	Yes

			<p>species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.</p> <p>Coastal works will be timed, where possible, to avoid the winter period in order to avoid visual and noise impacts to wintering birds</p>	
Isles of Scilly Ramsar				
<p>Species regularly supported during the breeding season (as identified at designation):</p> <p>Storm Petrel</p> <p>Lesser black-backed gull</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
	<p>Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.</p>	Yes	<p>Storm petrels are not known to nest on St Martins or on the island of Tean (the closest island designated within the Ramsar) however Lesser black-backed gulls are known to nest within the Ramsar site to west of the proposed site on Tean.</p> <p>The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in</p>	Yes

			disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	
Species regularly supported during the breeding season (identified subsequent to designation): Shag	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species.	Yes	Shag are known to breed within the SPA on the outer isles of St Martins (Pernagie and Guther's). The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar and it is therefore not considered that the works will result in disturbance to these species. This will continue to be reviewed in line with the latest survey data and on site prior to any works starting.	Yes

6.4 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.

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Appendices 6A to 6C: Landscape and Visual Appendices

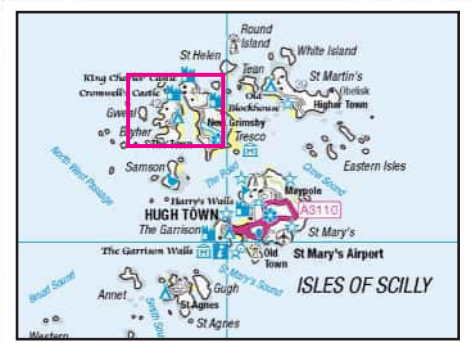
6A Figures

Figures 6.1a-c	The Site and Study Area, Bryher, St. Agnes and St. Martin's
Figures 6.2a-c	Landscape Character Types, 1996 Historic Landscape Character Assessment (Land Use Consultants)
Figures 6.2d-f	Landscape Character Types, 2006 Design Guide and 2015 Consultation Draft Conservation Area Character Statement
Figures 6.3a-c	Topography, access and locations of context photographs
Figures 6.4.1-6.4.28	Viewpoint photographs

Appendices
6B Photographs illustrating landscape context



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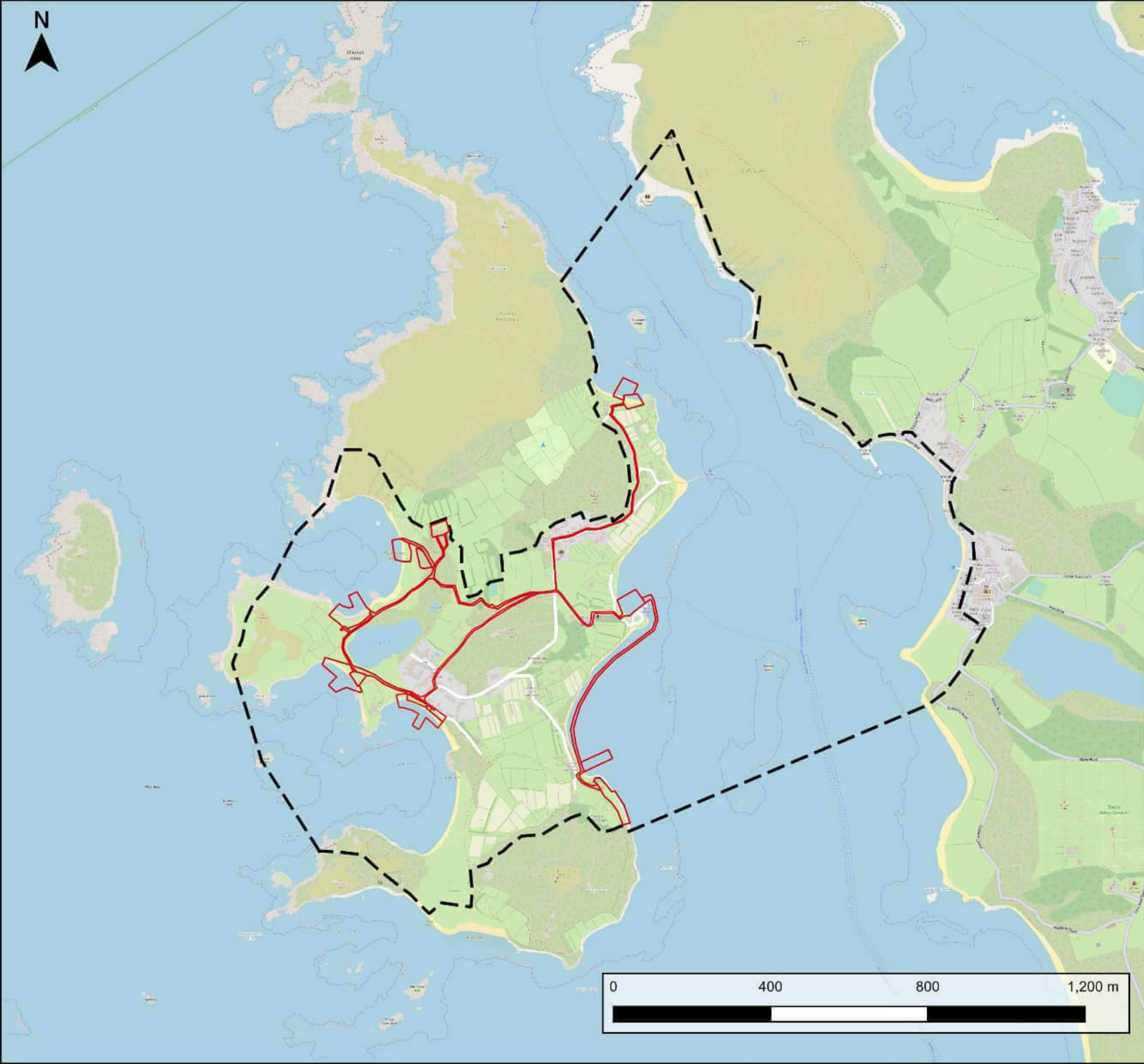
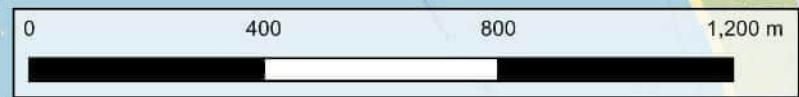
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Isles of Scilly - Bryher

Legend

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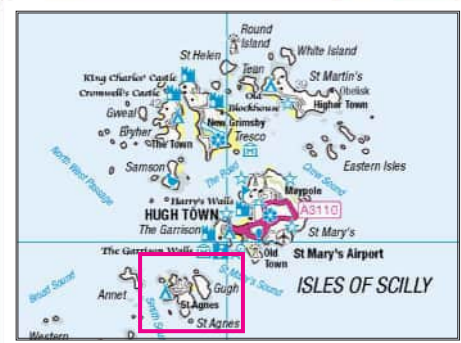
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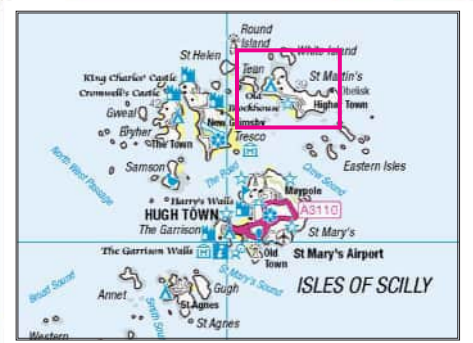
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Photograph 1 (Bryher): relationship between Bryher and Tresco at Kitchen Porth on Bryher



Photograph 2 (Bryher): low-lying coastal topography at Great Pool



Photograph 3 (Bryher): irregular rocky headlands, beaches with sand and natural cobbles



Photograph 4 (Bryher): introduced species dominating vegetation



Photograph 5 (Bryher): bulb strips arranged around settlements



Photograph 6 (Bryher): building materials compounds



Photograph 7 (St. Agnes): undulating hillscape falling to rocky coastal bays



Photograph 8 (St. Agnes): low-lying marsh, pool and dunes



Photograph 9 (St. Agnes): rocky coastal margin



Photograph 10 (St. Agnes): dispersed settlement



Photograph 11 (St. Agnes): St. Agnes Church



Photograph 12 (St. Martin's): extensive, gradually sloping intertidal areas



Photograph 13: vegetation dominated by introduced species



Photograph 14: buildings of mixed styles and materials



Photographs illustrating landscape change

Photograph 15: displaced rock and soil revealing concrete face of Great Popplestone coastal defences



Photograph 16: desire line paths across dunes on St Agnes



Photograph 17: trees likely to be removed at Porth Killier on St Agnes



Appendices

6C Assessment Tables

Table C1a: Landscape receptors within the study area – Exposed headland heaths

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Sheer rugged granite cliffs and headlands covered with thin, skeletal soils	null	medium
	<i>Landform</i>	Rounded, undulating, ending abruptly at cliffs.	null	medium
Landcover	<i>Vegetation</i>	Wind-pruned 'waved heath', maritime grasses, bracken and gorse.	null	low
	<i>Water</i>	No surface water present.	null	low
	<i>Other surfaces</i>	None.	n/a	n/a
Human influence	<i>Land use</i>	Unintrusive leisure uses.	low	low
	<i>Pattern</i>	Open, simple.	null	low
	<i>Settlement</i>	Remnant prehistoric archaeology.	low	medium
	<i>Materials</i>	Natural only.	null	low
Features	<i>Natural or built</i>	Prehistoric settlements, field systems and monuments.	low	medium
AESTHETIC CHARACTERISTICS		Sense of isolation and exposure. Wide vistas providing a sense of connection with the wider archipelago and the open sea and enabling appreciation of the unique topographical characteristics of the islands.	low	medium
Landscape change and stated management priorities if relevant		Incursion of gorse and bracken into heathland. Erosion of foot trafficked routes. Need to integrate conservation and recreation.		
Sensitivity		This landscape type, which coincides only within the Bryher study area and does not overlap site boundary, is of at most low sensitivity to the type of change represented by the proposals.		

Table C1b: Landscape receptors within the study area – Sandy coast with dune and grassland

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Blown sand between granite masses. Sand is most often coarse and usually backs onto pebbles and larger stones.	medium	low

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
	<i>Landform</i>	Strongly indented coastline of curving bays between rocky outcrops, backed by low dunes and plateaux.	low	medium
Landcover	<i>Vegetation</i>	Marram grass and other salt-tolerant vegetation dominates; some areas of bramble, bracken and gorse, with others colonised by exotics such as Hottentot Fig.	low	low
	<i>Water</i>	Large brackish pools on Bryher and St. Agnes (SSSI). Tidal flow of seawater across foreshore.	high	medium
	<i>Other surfaces</i>	Informally worn foot tracks, sometimes reinforced by gravel. Small areas of concrete. Emplaced stones.	high	low
Human influence	<i>Land use</i>	Unintrusive leisure uses.	medium	low
	<i>Pattern</i>	Simple, with sweeping curved bays separated from interior plateaux by shoreline features including dunes and coastal routes.	medium	low
	<i>Settlement</i>	Remnant prehistoric archaeology.	high	medium
	<i>Materials</i>	Exposed engineered fabrics where sea defences have worn or been breached. Small areas of concrete. Emplaced stones.	high	low
Features	<i>Natural or built</i>	Most prominent features are the rocky outcrops between bays; and Big Pool and Great Pool on St. Agnes and Bryher respectively. The exposed sea defence wall at Great Popplestone is noticeable locally.	medium	medium
AESTHETIC CHARACTERISTICS		An attractive, accessible landscape of relatively intimate scale with clear views towards both the open sea and inland features, providing a sense of wildness and enabling an appreciation of its qualities.	high	medium

Physical Characteristics	Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Landscape change and stated management priorities if relevant	Threat of coastal erosion breaching dunes and disrupting existing characteristics; incursion of bracken, bramble and exotic species; recreational pressure leading to footpath erosion.		
Sensitivity	This is a landscape of significant local value coinciding with the majority of the intrusive works proposed and highly susceptible to change. However, since the nature of the changes proposed is not substantially different to the existing landscape and are designed to protect its most sensitive characteristics it is of at most medium sensitivity to these changes.		

Table C1c: Landscape receptors within the study area – Rocky coast with heathland

Physical Characteristics	Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>	
Foundations	<i>Geology & soils</i>	Small-scale granite edges.	null	medium
	<i>Landform</i>	Undulating hill slopes falling to rocky shorelines.	low	high
Land cover	<i>Vegetation</i>	Heathland, dense shelterbelts mainly comprised of introduced shrub species, areas of bracken and bramble, grassland and limited cultivated bulb areas.	low	medium
	<i>Water</i>	No surface water present.	n/a	n/a
	<i>Other surfaces</i>	Areas of rocky shoreline. Concrete sea wall at Porth Killier. Some hard-surfaced routes, and others surfaced with self-binding gravel.	low	low
Human influence	<i>Land use</i>	Limited pasture and bulb cultivation; most dominant land use is local access, including Porthconger Quay at St. Agnes.	low	medium
	<i>Pattern</i>	Irregular, including some enclosure but mostly open areas falling to shoreline.	null	low
	<i>Settlement</i>	Some settlement around Porthconger Quay at St. Agnes; remnant archaeology.	null	medium
	<i>Materials</i>	Mainly natural, some tarmac and concrete roads. Concrete sea-wall at Porth Killier and Porthconger Quay at St. Agnes. Small numbers of buildings, including rendered stone with tiled roofs on St. Agnes.	low	low
Features	<i>Natural or built</i>	Main features of interest are rocky headlands and tall shelterbelts.	null	low

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
		Porthconger Quay at St. Agnes also forms a prominent local feature.		
AESTHETIC CHARACTERISTICS		An attractive, accessible landscape of relatively intimate scale with intermittent views towards both the open sea and inland features. Visual and sensory interest is high due to the diversity of spaces and textures encountered while moving through the area.	low	low
Landscape change and stated management priorities if relevant		Encroachment of bracken and bramble on heathland and abandoned fields, loss of former grazing practices; erosion of footpaths; and localised clutter from machinery and buildings materials (cited in draft Conservation Area Character Statement).		
Sensitivity		This character type coincides with access routes and materials compounds on St. Agnes only and is therefore only potentially affected by changes of a temporary nature associated with the proposals. It is of at most low sensitivity to these types of change.		

Table C1d: Landscape receptors within the study area – Sandy coastal strip with bulb fields

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Blown sand of a finer texture than many other places in the archipelago; light, sandy acid soils.	high	low
	<i>Landform</i>	Long, sweeping beaches backing onto relatively high dunes and low-lying flat areas.	low	low
Land cover	<i>Vegetation</i>	Marram grass, hedgerows of mainly introduced shrub species, arable weeds and grassland.	low	low
	<i>Water</i>	Tidal flow of seawater across foreshore.	null	low
	<i>Other surfaces</i>	Fine sand, boulders and large areas of seaweed on foreshore. Informally surfaced lanes, including areas near to beach covered with fine sand; occasional built structures.	low	medium
Human influence	<i>Land use</i>	Light pastoral management, recreation ground, isolated settlement.	low	low
	<i>Pattern</i>	Semi-regular, small-scale broken arrangement of field boundaries and traces of former boundaries, contrasting with continuous lines of dunes and open beaches along shoreline.	low	low
	<i>Settlement</i>	Outlying dwellings and farm buildings.	null	low

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
	<i>Materials</i>	Mainly natural; some timber structures and stored building and maritime materials and boats.	null	low
Features	<i>Natural or built</i>	The dunes are a striking and dominant feature of the southern regions of St. Martin's, as are the rockscapes in many areas of the shoreline.	medium	low
AESTHETIC CHARACTERISTICS		Contrasting enclosed and open spaces straddling within a short distance the transition from small-scale rural landscape to impressive wide sandy bays. Wide vistas looking out across the inner sound of the archipelago providing a sense of connection with the other islands.	medium	low
Landscape change and stated management priorities if relevant		Encroachment of bracken within abandoned fields and consequent loss of rare arable weeds; loss of hedge structure and deterioration of stone boundaries. Threat of coastal erosion and potential for 'desire-line' routes across dunes to create weak points vulnerable to storm surges and additional wind erosion.		
Sensitivity		This landscape type is present only on St. Martin's and coincides with the main area of works for that island as well as a separate area of management concern at Higher Town Bay. It is therefore susceptible to the nature of the changes proposed but since these changes are designed to protect rather than amend its main characteristics, is considered to be of low sensitivity to those changes.		

Table C1e: Landscape receptors within the study area – Unenclosed hills

PHYSICAL CHARACTERISTICS		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Granite hills with acid soils.	null	low
	<i>Landform</i>	Gently rounded hills rising to between 30 and 40m.	null	low
Land cover	<i>Vegetation</i>	Acid grassland, heath and gorse scrub with fringes of bracken.	null	low
	<i>Water</i>	No surface water present.	n/a	n/a
	<i>Other surfaces</i>	None significant.	n/a	n/a
Human influence	<i>Land use</i>	Unintrusive leisure uses.	null	low
	<i>Pattern</i>	Small-scale, simple.	null	low
	<i>Settlement</i>	Remnant archaeology.	null	medium
	<i>Materials</i>	Vegetation only.	null	low
Features	<i>Natural or built</i>	None significant.	n/a	n/a
AESTHETIC CHARACTERISTICS		Locally unusually enclosed areas of blanket heath and scrub vegetation sometimes crossed with foot tracks, providing contrast with more open or complex spaces; otherwise lacking in outstanding sensory characteristics.	null	low
Landscape change and stated management priorities if relevant		Encroachment of bracken and gorse including over footpaths and archaeological sites resulting from decline in grazing.		
Sensitivity		This character type is not susceptible to the type of changes represented by the proposals and is therefore not considered sensitive in any way. It is included in the baseline assessment for context only.		

Table C1f: Landscape receptors within the study area – Valley and hillslopes with fields

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Discernible geology limited to stone and earth field boundaries.	null	low
	<i>Landform</i>	Gently sloping hillsides.	null	low
Land cover	<i>Vegetation</i>	Grassland with some bracken and gorse. Dense hedgerows comprised of introduced shrub species and surrounding cultivated bulb areas including arable weeds.	low	medium
	<i>Water</i>	No surface water present.	n/a	n/a
	<i>Other surfaces</i>	Informally worn foot tracks, sometimes reinforced by gravel.	n/a	n/a
Human influence	<i>Land use</i>	Grazing, settlement, managed bulb cultivation.	low	medium

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
	<i>Pattern</i>	Small-scale tight parcels of enclosed land around irregularly arrangement settlement.	null	low
	<i>Settlement</i>	Small-scale, mainly detached housing in traditional form in a variety styles and ages with occasional auxiliary buildings such as the community centre on Bryher. Arranged around a simple network of lanes and footways.	null	low
	<i>Materials</i>	Stone, rendered and timber buildings with tile or metal roofing. Mainly concrete roads with some tarmac.	null	low
Features	<i>Natural or built</i>	Striking buildings including the lighthouse on St. Agnes, St. Agnes' church, Hell Bay Hotel on Bryher.	null	medium
AESTHETIC CHARACTERISTICS		An intimate, attractive environment of constantly evolving views and textures, occasionally opening out to provide a sense of connection with the wider landscape.	null	medium
Landscape change and stated management priorities if relevant		Declining grazing and management of field boundaries and bulb strips.		
Sensitivity		This character type coincides with access routes and materials compounds and is therefore only potentially affected by changes of a temporary nature associated with the proposals. It is of at most low sensitivity to these types of change.		

Table C1g: Landscape receptors within the study area – Valley and hillslopes with bulb strips

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Cultivated free draining acid sandy-loam soils.	null	low
	<i>Landform</i>	Gentle slopes.	null	low
Land cover	<i>Vegetation</i>	Dense hedgerows comprised of exotic shrub species and surrounding cultivated bulb areas including arable weeds.	null	medium
	<i>Water</i>	No surface water present.	n/a	n/a
	<i>Other surfaces</i>	Minor roads and building footprints.	null	low
Human influence	<i>Land use</i>	Settlement, managed bulb cultivation.	low	medium
	<i>Pattern</i>	Small-scale tight parcels of enclosed land around irregularly arrangement settlement.	null	low

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
	<i>Settlement</i>	Small-scale, mainly detached housing in traditional form in a variety styles and ages with occasional auxiliary buildings such as the community centre on Bryher. Arranged around a simple network of lanes and footways.	null	low
	<i>Materials</i>	Stone, rendered and timber buildings with tile or metal roofing. Mainly concrete roads with some tarmac.	null	low
Features	<i>Natural or built</i>	The bulb strips are the most striking and characteristic feature of this landscape type, forming a tightly drawn regular pattern across the hillsides.	null	medium
AESTHETIC CHARACTERISTICS		An intimate and attractive environment of distinctive patterning and varied texture and colour.	low	medium
Landscape change and stated management priorities if relevant		Decline in flower farming and hedgerow management leading to a softening of the formerly sharply defined field outlines and encroachment of bracken into fields at the expense of diverse arable weeds.		
Sensitivity		This landscape type is traversed by proposed haulage routes on Bryher and St. Martin's and coincides with one proposed storage compound on Bryher. It is therefore of at most low sensitivity to the nature of the changes represented by the proposals due to the temporary nature of any effects.		

Table C1h: Landscape receptors within the study area – Sheltered sounds and bays

This area of seascape is included to acknowledge the visual coherence between the landscape on opposite sides of the sound between Bryher and Tresco, as well as other parts of the study area incorporating marine areas. Overall, these areas do not constitute a large proportion of the study area and no intrusive works are proposed within them.

Physical Characteristics		Description <i>characteristics, condition / integrity, scale of importance</i>	Susceptibility <i>high to low</i>	Value <i>high to minimal</i>
Foundations	<i>Geology & soils</i>	Shallow, slightly undulating seabed with sandbars and isolated granite islets, framed by rocky shorelines and beaches of fine to coarse sand.	null	high
	<i>Landform</i>	Low-lying bays and headlands, scattered islets.	null	high
Land cover	<i>Vegetation</i>	Coastal grasses and scrub; little marine vegetation.	null	low
	<i>Water</i>	Shallow sea, often sheltered.	null	high
	<i>Other surfaces</i>	n/a	n/a	n/a
	<i>Land use</i>	Transport and recreation.	low	high

Human influence	<i>Pattern</i>	Simple spaces extending into tightly incurved moderately sized bays, for example the single area of water uniting the islands of Bryher and Tresco.	null	low
	<i>Settlement</i>	Small-scale, including the waterfront settlement extending southwards from Tresco harbour and scattered mainly residential settlement on Bryher.	null	low
	<i>Materials</i>	Stone boundaries and buildings with tiled roofs. Some timber structures. Concrete and metalled roadways.	null	low
Features	<i>Natural or built</i>	View to taller headlands and hills inland. New Grimsby harbour forms a prominent feature within the Bryher-Tresco sound. Porthconger Quay at St. Agnes is also prominent. Elsewhere offshore rocky islets and headlands form eye-catching features.	null	low
AESTHETIC CHARACTERISTICS		Highly attractive spaces providing a sense of connection between islands and of transition from the sheltered bays into the more open and exposed waters of the archipelago.	low	high
Landscape change and stated management priorities if relevant		Gradual sea-level rises likely to increase erosion pressure locally. This is predicted to include Church Quay and the region immediately south of Green Bay.		
Sensitivity		This landscape type overlaps slightly with the proposed temporary haulage route around the headland immediately south of Church Quay on Bryher. Hence, in spite of its high value associated with the AONB status and its importance for tourism and amenity, it is of at most low sensitivity to the type of changes proposed.		

Table C2: Landscape receptors impacted by the proposals

Landscape Receptor Drawn from Tables – sensitive receptors only	Effect Description of impacts	Sensitivity considering value and susceptibility to effect	Magnitude see Table 6.7 for definitions
PHYSICAL CHARACTERISTICS			
<i>Geology & soils</i>			
Dunes of blown coarse sand – tables – C1b	Proposals designed to protect this formation – no change.	low	no change
Dunes of blown fine sand – table C1d	Notices on the two 'Island Information' boards at the two public quays and handed out to visitors e.g. as leaflets designed to discourage foot traffic over dunes via 'desire lines'.	medium	small beneficial
Beaches of pebble and larger stones – table C1b	Some areas redistributed or recharged. Stone selected from pink Scilly or white Cornish granites and blended or graded between the two types.	low	small beneficial
Light, sandy acid soils – table C1d	Proposals designed to protect this formation – no change.	low	no change
<i>Landform</i>			
Strongly indented coastline of curving bays between rocky outcrops, backed by low dunes and plateaux – table C1b	Small incursion to rear of dune at Great Popplestone for sand extraction, regraded to naturalistic form around edges.	low	small adverse
Strongly indented coastline of curving bays between rocky outcrops, backed by low dunes and plateaux – table C1b	Minor raising of dune heights at North Green Bay and Great Porth south, Bryher.	low	negligible
Undulating hill slopes falling to rocky shorelines – table C1c	Minor adjustment to coastal defences at Porth Killier resulting in increased volume of rock armour at shoreline.	low	negligible
Long, sweeping beaches – table C1d	Proposals designed to protect this formation – no change.	low	no change
<i>Vegetation</i>			
Marram grass and other salt-tolerant vegetation – tables C1b, d	Localised enhancement to flora by restoration on dune slopes at Porth Coose and Periglis.	low	small beneficial
Encroaching vegetation (bramble, bracken & gorse) – tables C1b, c, f	Small reduction in overall area through sand extraction behind dune at Great Popplestone. Clearance of dominant encroaching vegetation type considered positive.	low	small beneficial
Grass and other salt-tolerant vegetation – table C1b	Strip of approximately 5x70m removed to facilitate raising of dune crest at Bryher North Green Bay; subsequently reinstated/regenerated.	low	negligible

Landscape Receptor Drawn from Tables – sensitive receptors only	Effect Description of impacts	Sensitivity considering value and susceptibility to effect	Magnitude see Table 6.7 for definitions
Exotic colonisers of dune (e.g. Hottentot Fig) – table C1b	No discernible effect.	low	no change
Heathland – table C1c	No effect.	low	no change
Dense shelterbelts comprised of introduced shrub species – tables C1c, d, f	Loss of some tall shrubs at the rear of Kitchen Porth beach to make way for revetment.	low	small adverse
Grassland including pasture – tables C1c, d, f	Proposals designed to protect this vegetation type – no change.	low	no change
Cultivated bulbs – tables C1c, f	Proposals designed to protect this vegetation type – no change.	low	no change
Arable weeds – tables C1d, f	Proposals designed to protect this vegetation type – no change.	low	no change
Water			
Large brackish pools on Bryher and St. Agnes (SSSI) – table C1b	Proposals designed to protect this form of surface water – no change.	medium	no change
Tidal flow of seawater across foreshore – table C1b	Unaffected.	low	no change
Other surfaces			
Informally worn / gravelled foot tracks – table C1b	<p>Unofficial route along top of Porth Coose dune no longer accessible, now formed by rock bag structure slightly at odds with surrounding character.</p> <p>Northern access route on St. Agnes may require localised reinforcement with gravel or temporary matting should conditions become unseasonally wet during haulage operations; although programme will be designed to minimise use during predictably wet periods.</p>	medium	small adverse
Emplaced stones / rocky shoreline – tables C1b, c	<p>Areas of stone on beach rearranged in same location into more formal emplacements and graded from Scillonian to Cornish granite, improving appearance.</p> <p>Additional massing of locally appropriate stones at Great Porth north of Great Carn on Bryher; and at Porth Killier on St. Agnes.</p>	medium	neutral overall

Landscape Receptor Drawn from Tables – sensitive receptors only	Effect Description of impacts	Sensitivity considering value and susceptibility to effect	Magnitude see Table 6.7 for definitions
Hard-surfaced vehicle / pedestrian routes – table C1c	No effect.	low	no change
Fine sand, including covering informally surfaced lanes – table C1d	Addition of erosion control mat at western entrance to Neck of the Pool beach comprising grid filled with 5-20mm aggregate.	low	small adverse
<i>Land use</i>			
Unintrusive leisure uses – tables C1a, b, e	Temporary minor disruption to footpath routes and quality of experience during works. Reinforcement of coastal defence structures removes viable routes along dune tops on St. Agnes whilst improving backdrop to some popular routes on St. Agnes and Bryher by removing or covering existing worn engineered materials.	medium	neutral overall
Pastoral management / grazing – tables C1c, d, f	Proposals designed to protect this land use – no change.	low	no change
Bulb cultivation – tables C1c, f, g	Proposals designed to protect this land use – no change.	low	no change
Local access – table C1c	Temporary minor disruption to transport routes and quality of experience during works.	low	small adverse
Recreation ground – table C1d	Proposals designed to protect this land use – no change.	low	no change
Settlement – tables C1d, f, g	Proposals designed to protect this land use – no change.	low	no change
Transport and recreation – table C1h	Reduction in amenity of Green Bay beach during construction phase involving the use of the haulage route around the Church Quay headland.	low	negligible
<i>Pattern</i>			
Semi-regular, small-scale broken arrangement of field boundaries and traces of former boundaries – table C1d	No effect.	low	no change
Continuous lines of dunes and open beaches along shoreline – table C1d	Addition of dune fencing along approx. 67.5m length of Neck of the Pool beach, becoming absorbed into dune over time.	low	small adverse
<i>Settlement</i>			
Remnant archaeology – tables C1b, c	See Chapter 7 for heritage assessment.	n/a	n/a
<i>Materials</i>			

Landscape Receptor Drawn from Tables – sensitive receptors only	Effect Description of impacts	Sensitivity considering value and susceptibility to effect	Magnitude see Table 6.7 for definitions
Exposed engineered fabrics where sea defences have worn or been breached – table C1b	Proposals will repair or cover existing disrupted materials at Periglis. Addition of 'rock bag' units along length of Porth Coose beach introduces artificial webbing material and artificially regular stone surface, although designed to blend with surroundings.	medium	neutral overall
Small areas of concrete – table C1b, c	See under 'Other surfaces' above.	n/a	n/a
Emplaced stones – table C1b	See under 'Other surfaces' above.	n/a	n/a
Building materials – table C1c	No effect.	low	no change
Features			
Prehistoric settlements, field systems and monuments – table C1a	See Chapter 7 for heritage assessment.	n/a	n/a
Rocky outcrops – table C1b	No effect.	low	no change
Big Pool and Great Pool – table C1b	See under 'Water' above.	n/a	n/a
Dunes and rockscape on St. Martin's – table C1d	Proposals designed to protect these features – no change.	low	no change
AESTHETIC CHARACTERISTICS			
Exposed headland heaths – table C1a	Sense of isolation may reduce appreciably during works only.	low	negligible
Sandy coast with dune and grassland – table C1b	Attractiveness and accessibility may reduce appreciably during works. Permanent effects limited to use of exposed 'rock bag' along length of dune crest at Porth Coose beach, being slightly out of character with prevailing natural environment and materials. This is balanced by the improvement resulting from the tidying or covering of existing worn artificial materials such as the exposed torn engineering fabric at Periglis. Marginal increase to height of rock crest at Great Popplestone is slightly adverse in effect.	medium	small adverse
Rocky coast with heathland – table C1c	No effect to overall experience of character.	low	no change
Sandy coastal strip with bulb fields – table C1d	Temporary reduction in the amenity of this area during the construction phase. The addition of dune fencing along the	medium	negligible

Landscape Receptor Drawn from Tables – sensitive receptors only	Effect Description of impacts	Sensitivity considering value and susceptibility to effect	Magnitude see Table 6.7 for definitions
	<p>length of the Neck of the Pool beach introduces a minor and unobtrusive element to the backdrop of the beach which will in time become absorbed into the dune landscape, as well as being implemented in order to protect the characteristics of the area.</p> <p>Discussions with community members in the area of Higher Town Bay are intended to reduce the frequency of foot trafficking across the dune and the consequent development of localised vulnerabilities. This should increase the resilience of this landscape type’s aesthetic characteristics.</p>		
Valley and hillslopes with bulb strips – table C1g	Effects limited to haulage through this landscape type during the construction phase only.	medium	negligible
Sheltered sounds and bays – table C1h	Effects limited to haulage through a small part of this landscape type on Bryher during the construction phase only.	low	negligible
Overall significance of effects	<p>The very few material and perceptual changes resulting from the proposals include a mixture of small adverse and small beneficial effects. Overall, it is considered that the significance of these effects is slight adverse during construction and thereafter.</p>		

Table C3: Significance of residual landscape effects

The mitigation measures described below are proposed either to address specific negative effects or to offset them by securing enhancements to landscape character achievable within the scope of the development. They address only those impacts identified as adverse in the assessment at **Table C2**.

Characteristic	Effects	Mitigation	Significance		
			Construction	Completion	15 years
PHYSICAL CHARACTERISTICS					
Strongly indented coastline of curving bays between rocky outcrops, backed by low dunes and plateaux – table C1b	Small incursion to rear of dune at Great Popplestone for sand extraction, regraded to naturalistic form around edges.	Shallower extraction over a wider area would enable a more continuous rear dune profile to be achieved in the final landform and result in the control of a larger swathe of encroaching bramble and bracken. Permit natural revegetation with dune flora or seed and plant with pioneer species – the latter requiring ongoing control of dominant and encroaching bramble / bracken.	slight adverse	neutral	neutral
Dense shelterbelts comprised of introduced shrub species – tables C1c, d, f	Loss of some tall shrubs at the rear of Kitchen Porth beach to make way for revetment.	Replant to re-establish continuous line of shrubs behind revetment at Kitchen Porth and to replace any lost shrubs at Green Bay, using locally appropriate species.	slight adverse	negligible	neutral
Informally worn / gravelled foot tracks – table C1b	Unofficial route along top of Porth Coose dune no longer accessible, now formed by rock bag structure slightly at odds with surrounding character.	Use Scillonian or Cornish granite as fill material for rock bags. Over time encroaching vegetation and algal greening will soften the contrast of these materials with natural surroundings.	slight adverse	negligible	neutral
Fine sand, including covering informally surfaced lanes – table C1d	Addition of erosion control mat at western entrance to Neck of the Pool beach comprising grid filled with 5-20mm aggregate.	Ensure aggregate is derived from local sources or pale colour complementary to surrounding surfaces.	slight adverse	negligible	negligible
Local access – table C1c	Temporary minor disruption to transport routes and quality of experience during works.	Carefully programme works to ensure haulage and construction disrupt access at any one location for the minimum period possible. Distribute rather than concentrate haulage	slight adverse	neutral	neutral

Characteristic	Effects	Mitigation	Significance		
			Construction	Completion	15 years
		routes accordingly. Plan to avoid the most popular amenity routes during the tourist season if possible. Effects cannot be wholly mitigated.			
Continuous lines of dunes – table C1d	Addition of dune fencing along approx. 67.5m length of Neck of the Pool beach, becoming absorbed into dune over time.	This effect is sufficiently minor and temporary in nature that mitigation would be disproportionate to the impact.	slight adverse	slight adverse	neutral
AESTHETIC CHARACTERISTICS					
Sandy coast with dune and grassland – table C1b	Marginal increase to height of rock crest at Great Popplestone.	Cover rear of concrete sloping sea wall with small rocks and soil to reduce incongruity and untidiness and partially restore naturally occurring land cover.	slight adverse	neutral	slight beneficial
Significance of beneficial effects listed in Table C2			neutral	slight beneficial	slight beneficial
Overall significance of residual effects			slight adverse	negligible	slight beneficial

Table C4: Visual receptors likely to be affected by changes on the Site.

<i>Receptor</i>	<i>Viewpoint ref. (or closest where no equivalent)</i>	<i>Description of existing view in the direction of the Site</i>	<i>Distance to the Site</i>	<i>Visibility of the Site (how visible and what)</i>	<i>Susceptibility</i>	<i>Value</i>	<i>Sensitivity</i>
PEOPLE USING FOOTPATHS AND PEDESTRIANS ON ROADS							
Walkers at Kitchen Porth	Bryher 1	Pleasant view of a sandy beach with scattered rocks backed by tall evergreen shrubs and large boulders. The sloped roof and upper section of a single house is visible above this backdrop.	0-20m	Kitchen Porth works fully visible, including clearance and construction phase as well as the completed installation. The site takes up the majority of the view, although the viewer will also be aware of the more open and dramatic view towards the bay, water and nearby headlands in the opposite direction.	medium	high	high
Walkers at Church Quay	Bryher 2	Pleasant and interesting view across sandy bay taking in open water, boats, quayside and waiting room and distant views of Tresco shore. Occasionally partially obscured by shrubby vegetation.	0-50m	Church Quay landing and haulage routes fully visible. View develops along length of beach-side road.	low	high	medium
Walkers on Brow Ledge Bay beach	Bryher 4	Very pleasant view of long sandy beach opening onto narrow stretch of open water to Tresco shoreline opposite.	0-20m	Construction vehicles when tide allows during part of programme.	low	high	medium
Walkers beside Green Bay	Bryher 5	Pleasant views with grassy footpath in foreground, adjacent scrubby vegetation	20-50m	Clearance of ground vegetation, construction phase and completed works.	low	medium	low

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		with scattered rocks and distant views across narrow stretch of open water to Tresco shoreline opposite.					
Walkers passing Stinking Porth	Bryher 7	Open view across gently sloping area of grassland, beach and open sea, framed by tall headland to right and isolated house to left.	20m	Back of dune only, appearing as a continuation of grassland. Construction phase, landing, haulage and any completed works visible to rear of dune.	low	high	medium
Walkers on Gweal Hill	Bryher 8	Stunning panoramic view across Bryher towards Tresco and St. Mary's in the far distance. Provides a unique appreciation of the Scillonian landscape and seascape.	150-750m	Clear view of all Great Popplestone, Stinking Porth and Great Porth sites within a much wider landscape context. Construction phase, landing, haulage and any completed works fully visible.	low	very high	high
Walkers passing north of Great Pool	Bryher 9	Uninspiring view to rear of existing concrete sea wall and eroded ground, framed by mass of Gweal Hill and Shipman Head Down. Wider context of grassland, heath and bracken/bramble.	20m	Site fully visible including area of wall to be enhanced, construction, landing and haulage.	medium	medium	medium
Walkers passing behind Great Popplestone	Bryher 11	Unremarkable view of bracken and bramble covered dunescape, backed by Shipman Head Down in middle distance.	5-50m	Area proposed for clearance and sand extraction fully visible. Construction, clearance, landing and haulage.	medium	low	low

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Walkers and residents using New Road, Bryher	Bryher 12	Intricate and pleasant streetscape comprising a narrow residential road passing between attractive individual houses, domestic outbuildings and ornamental garden vegetation. Terminated by trimmed hedgerows, mature exotic planting and sloping hillside.	0m	Haulage only.	medium	high	high
Walkers on road near Tresco harbour	Bryher 13	Attractive sheltered seascape comprising sound between Bryher and Tresco, foreground and distant shore. Near distance includes sea-wall and at the time of visit, stored construction materials. Middle distance occupied by harbour, associated buildings and low headlands, boats on water and islets. Distant shore includes striking outline of Bryher. Beaches on Bryher appear as a thin line in centre of view, albeit clearly.	750m	Church Quay landing and haulage route around adjacent headland are fully visible.	low	high	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Walkers passing the Turk's Head	St. Agnes 1	Dramatic, attractive view across Porth Congar bay towards northern Gugh, open sea and more distant Scillonian islands. Framed by vegetation and in places incorporating built structures including the Turk's Head beer garden platform, the quay and associated toilet block. Walkers also pass a compound of stored building materials.	0m	Haulage routes only.	low	medium	low
Walkers on north coastal route, St. Agnes	St. Agnes 2	Pleasant, open view towards gently sloping hillside terminated by tall vegetation and crest of hill. Bulk of view comprised of fields with hedgerows. St. Agnes' lighthouse forms a striking focal point to the right. View is framed by tall shrubs on left.	0m	Storage compound and haulage only, pending reinstatement on completion.	medium	high	medium
Walkers passing Porth Killier	St. Agnes 3, 4	Quickly evolving, constrained but interesting view framed by tall evergreen shrubs adjacent to viewer. Surfaced path and rear of concrete sea-wall are prominent in centre of view;	0m	Porth Killier site fully visible, including construction, any clearance, haulage and the completed works.	medium	medium	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		however, eye is drawn to rocky shore and curving bay beyond.					
Walkers passing Porth Coose	St. Agnes 5	Pleasant, if curtailed view to tall shrubs, framed by rear of dune to left and higher ground inland to right. Big Pool is also visible to right.	0m	Haulage and materials compound only, pending reinstatement on completion.	medium	medium	medium
Walkers using New Road, St. Agnes	St. Agnes 9	Small-scale, pleasant streetscape comprising a narrow residential road passing between vegetated garden boundaries, paddocks and interesting individual buildings. Open space draws the eye in the direction of the site in the middle distance and the sea beyond.	500m	Distant view of construction at Porth Coose bay only; finished works not perceptible.	low	high	medium
Walkers and hotel guests passing by the Karma Hotel	St. Martin's 1	Partially constrained, attractive view along lanes, framed by gardenesque vegetation and stone walls, opening out in the middle distance to an intriguing seascape of sheltered waters and small, low-lying islands.	0m	Haulage route only.	low	high	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Residents walking on main route through Lower Town	St. Martin's 3	Attractive, near-distance views of houses, gardens and the lane threading between. Views to one side are terminated by tall garden hedgerow; to the other the line of sight is drawn upwards along sloping gardens towards houses at the next level.	0m	Haulage route and building materials compound only, pending reinstatement on completion.	medium	high	medium
BEACH USERS							
Kitchen Porth	Bryher 1	Pleasant view of a sandy beach with scattered rocks backed by tall evergreen shrubs and large boulders. The sloped roof and upper section of a single house is visible above this backdrop. Likely to be a popular beach during the tourist season, although most beach users would be oriented towards the shore rather than the rear of the beach.	0-20m	Kitchen Porth works fully visible, including clearance and construction phase as well as the completed installation. The site takes up the majority of the view, although the viewer will also be aware of the more open and dramatic view towards the bay, water and nearby headlands in the opposite direction.	medium	high	high
Church Quay	Bryher 2	Pleasant and interesting view across sandy bay taking in open water, boats, quayside and waiting room and distant	0-50m	Landing and haulage of construction materials via Church Quay would be fully visible. View	low	medium	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		views of Tresco shore. Most beach users would be oriented towards the shore rather than the rear of the beach.		develops along length of beach-side road.			
Brow Ledge Bay	Bryher 4	Very pleasant view of long sandy beach opening onto narrow stretch of open water to Tresco shoreline opposite. Likely to be a popular beach during the tourist season	0-20m	Haulage vehicles when tide allows during part of programme.	medium	high	high
Great Porth north	Bryher 6	Expansive view of the bay, the eye being drawn to the open sea framed by headlands and rocky islets. Nearer at hand, the beach forms an attractive sweeping band which also encompasses the viewer. However, in this location, the existing rock armour forms a slightly stark area of uniformly textured, albeit natural material at the periphery of the view. Rocky beach, less likely to be popular for stationary leisure pursuits.	0-50m	Construction, landing of materials and the completed works would be clearly visible.	low	high	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Stinking Porth	Bryher 7	Open view across gently sloping area of grassland, beach and open sea, framed by tall headland to right and isolated house to left. Narrow and steeply sloping beach, less likely to be popular for stationary leisure pursuits.	0-50m	Construction, landing, haulage and the completed works would be clearly visible.	low	high	medium
Great Popplestone	Bryher 10	Dramatic, expansive view of the bay, the eye being drawn to the open sea framed by headlands and rocky islets. Nearer at hand, the beach forms an attractive sweeping band which also encompasses the viewer. Secluded yet spacious beach likely to be popular during the tourist season, although most beach users would be oriented towards the shore rather than the rear of the beach.	0-100m	Construction, landing and completed works clearly visible.	medium	high	high
Porth Coose	St. Agnes 6	Panoramic, open view taking in the bay and open sea beyond. Likely to be popular during the tourist season, although most beach users would be oriented	0-130m	Construction and completed works clearly visible.	medium	high	high

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		towards the shore rather than the rear of the beach.					
Perigris	St. Agnes 7	Dramatic view along the length of this curved beach taking in coast, islets and open sea to horizon. Sweeping parallel lines of dune vegetation, large pebbles and seaweed forms an interesting array of textures and colours. Likely to be popular during the tourist season.	0-200m	Construction, landing, haulage and the finished installation would all be clearly visible.	medium	high	high
Perigris	St. Agnes 8	Dramatic view along the length of this curved beach taking in St. Agnes' lighthouse and church tower inland and open sea and rocky islets to seaward side. Sweeping parallel lines of dune vegetation, large pebbles and seaweed forms an interesting array of textures and colours. Existing degraded erosion protection fabric detracts significantly from the quality of the view. Likely to be popular during the tourist season, although most beach	0-200m	Construction, landing, haulage and the finished installation would all be clearly visible.	medium	high	high

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		users would be oriented towards the shore rather than the rear of the beach.					
west of Lower Town	St. Martin's 2	Attractive view of wide, white sandy beach and narrow quay, falling to a narrow area of water and low-lying islands. View framed to left by low rocky dunes and tall vegetation.	0-100m	Delivery of materials to quayside and haulage.	medium	high	high
Neck of the Pool	St. Martin's 4	Stunning, expansive views across a wide stretch of sand, sloping down towards shallow intertidal area and backed by a high grass-covered dune. Rocks in foreground and distant headlands at the east of St. Martin's bookend the view.	0m	Construction and the completed works would be fully visible.	low	high	medium
GUESTS AND PATRONS OF HOSPITALITY							
guests at Hell Bay Hotel	Bryher 7, 9	Pleasing views across Great Pool towards the dramatic bulk of Gweal Hill and the linear dunes to either side.	160-170m	Construction, haulage and part of the completed works would be fully visible.	medium	high	medium
Outdoor patrons of	St. Agnes 1	Dramatic, attractive view across Porth Congar bay towards northern Gugh, open	10-75m	Haulage only would be visible, including across beach directly in front of beer garden area	medium	medium	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Turk's Head Inn		sea and more distant Scillonian islands. Porthconger quay protrudes from the left as the only significant artificial component and is in keeping with the context.					
Guests at Karma Hotel	St. Martin's 1, 2	Partially constrained, attractive view along lanes, framed by gardenesque vegetation and stone walls, opening out in the middle distance to an intriguing seascape of sheltered waters and small, low-lying islands.	0-5m	Haulage only would be visible.	medium	high	high
BOAT PASSENGERS (COMMUTERS AND TOURISTS)							
Church Quay	Bryher 3	Pleasant and engaging views from quayside across beach and bay to island landscape including attractive cluster of dwellings and surrounding vegetated rolling hills. The ancient All Saints church forms an appealing focal point at the periphery of the view. The quay infrastructure detracts marginally.	5-10m	Landing and haulage of construction materials via Church Quay would be fully visible.	low	medium	low

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Porthconger Quay	(St. Agnes 1)	Attractive, dramatic views along length of quay towards sweeping, deeply incurved bay to one side, open sea and distant islands to the other.	0m	Haulage using quay and beach clearly visible.	low	high	medium
Quay at Lower Town	St. Martin's 2	Attractive view of wide, white sandy beach and narrow quay, falling to a narrow area of water and low-lying islands. View framed to left by low rocky dunes and tall vegetation.	0m	Haulage using quay clearly visible.	low	high	medium
Tresco harbour	Bryher 13	Attractive sheltered seascape comprising sound between Bryher and Tresco, foreground and distant shore. Near distance includes sea-wall and at the time of visit, stored construction materials. Boats on water and islets in middle distance. Distant shore includes striking outline of Bryher. Beaches on Bryher appear as a thin line in centre of view, albeit clearly.	800m	Landing of materials at Church Quay and haulage route around adjacent headland would be fully visible.	low	high	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
Passing Green Bay	Bryher 1a	View experienced by boat passengers on the approach to Bryher from St. Mary's. A pleasant, clear view of the shoreline, including low heathland hillside, isolated dwelling and rocky foreshore.	200m	Clearance, construction and completed installation.	low	medium	medium
Approaching Church Quay	Bryher 2a	View experienced by passengers about to land on or leaving Bryher. Pleasant view of sandy, articulated foreshore backed by low lying ground with tall vegetation and individual dwellings. Buoys in the foreground and the quay in the middle distance are prominent, and the tower of All Saints church can be made out amongst the trees.	50-240m	Deliveries and haulage of construction materials via Church Quay would be fully visible.	low	medium	medium
ROAD USERS IN VEHICLES OR ON CYCLES							
Near Church Quay	Bryher 2	Pleasant and interesting view across sandy bay taking in open water, boats, quayside and waiting room and distant views of Tresco shore.	0-50m	Landing and haulage of construction materials via Church Quay would be fully visible. View develops along length of beach-side road.	low	medium	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		Occasionally partially obscured by shrubby vegetation.					
New Road, Bryher	Bryher 12	Intricate and pleasant streetscape comprising a narrow residential road passing between attractive individual houses, domestic outbuildings and ornamental garden vegetation. Terminated by trimmed hedgerows, mature exotic planting and sloping hillside.	0m	Haulage only.	low	medium	medium
New Road, St. Agnes	St. Agnes 9	Small-scale, pleasant streetscape comprising a narrow residential road passing between vegetated garden boundaries, paddocks and interesting individual buildings. Open space draws the eye in the direction of the site in the middle distance and the sea beyond.	500m	Distant, fleeting and peripheral view of construction at Porth Coose bay only; finished works not perceptible.	low	low	low
Road through Lower Town	St. Martin's 3	Attractive, near-distance views of houses, gardens and the lane threading between. Views to one side are terminated by tall garden hedgerow; to the	0m	Haulage route and building materials compound only, pending reinstatement on completion.	low	medium	low

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		other the line of sight is draw upwards along sloping gardens towards houses at the next level.					
OCCUPANTS OF PRIVATE DWELLINGS							
Residents near Kitchen Porth site	Bryher 1	Views from a small number of houses in the vicinity of Kitchen Porth are generally aligned towards the bay, the view dominated by the northern part of Tresco and the intervening water, framed by rocky islets and outcrops, and vegetation alongside the beach. Views are likely to be highly attractive.	20-100m	Forms a small area to the periphery of the view. Clearance and construction phase including landing of materials as well as the completed installation would be at least partially visible from gardens and within the houses, particularly any upper stories.	low	high	medium
Residents near Church Quay site	Bryher 2	Views mainly from upper story windows across garden vegetation to the bay, Tresco and the intervening sound. Views are likely to be highly attractive.	100-200m	Church Quay is likely to be a small component at the periphery of views.	very low	high	low
Residents near Green Bay site	Bryher 5	Pleasant views across nearby vegetation to open water and pastoral landscape of southern Tresco beyond. Walkers using	50m	Visible in the centre of views from the house: clearance, construction and completed installation.	medium	high	high

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
		footpath in near distance likely to be visible.					
Residents of isolated house between Great Porth and Stinking Porth	Bryher 6, 7	Attractive and dramatic views across bays towards headlands and open sea. Views in several directions.	50-60m	Sites on two sides highly visible, including construction, landing of materials, haulage and the completed installations.	medium	high	high
Residents of The Town with west facing prospects	Bryher 7	Attractive and dramatic views across bays towards headlands and open sea.	60-130m	Great Porth North and Stinking Porth sites visible, including construction, haulage and small proportion of the completed installations.	low	high	medium
Residents of Middle Town St. Agnes, near to Periglis	St. Agnes 7	Attractive and dramatic views from upper storey windows above boundary vegetation across bays towards headlands and open sea.	25-80m	Periglis beach forms a small but central component in views. Construction and the completed work would be clearly visible. Porth Coose is also likely to be visible to a very limited extent – construction and the completed work will be visible.	medium	high	high
Residents of Middle Town St. Agnes on higher ground with west	St. Agnes 9	Attractive views from upper storey windows above boundary vegetation across bays towards headlands and open sea.	280-480m	Porth Coose is likely to be visible to a limited extent – construction, haulage and the completed work will be visible.	low	high	medium

Receptor	Viewpoint ref. (or closest where no equivalent)	Description of existing view in the direction of the Site	Distance to the Site	Visibility of the Site (how visible and what)	Susceptibility	Value	Sensitivity
facing prospects							
Residents in private houses and gardens alongside Old Lane and New Lane	St. Agnes 9	Views of quiet rural lane partially bounded by hedgerows.	2-20m	Construction traffic passing between Porthconger Quay and Periglis is likely to be visible during periods when wet ground prevents use of northern haulage route.	high	medium	high
Residents of Lower Town St. Martin's	St. Martin's 3	Attractive, intimate views over sloping gardens to wide bay and open seascape.	5-60m	Site compound and haulage route visible.	medium	medium	medium

Table C5: Effects upon visual receptors susceptible to change or likely to attribute significant value to views towards the Site prior to mitigation.

Receptor	Viewpoint ref.	Sensitivity of receptor	Description of changes likely to be visible	Magnitude of impacts		Significance of effects	
				CONSTRUCTION	COMPLETION	CONSTRUCTION	COMPLETION
PEOPLE USING FOOTPATHS AND PEDESTRIANS ON ROADS							
Walkers at Kitchen Porth	Bryher 1	high	<p>Loss of some existing hedgerow from view. Excavations and construction activities including landing, haulage and any temporary on-site storage of bulk materials.</p> <p>Intrusion of emplaced rock in backdrop to beach, albeit comprised of locally appropriate materials.</p> <p>Overall effect may appear stark in the short-term relative to existing view but will soften over time with the regrowth of vegetation behind revetment.</p>	small adverse	small adverse	slight adverse	slight adverse
Walkers and residents at Church Quay	Bryher 2	medium	Landing of construction materials and haulage to other areas.	small adverse	no change	slight adverse	no change
Walkers on Brow Ledge Bay beach	Bryher 4	medium	Construction vehicle movements along beach and around headland during works to Church Quay.	small adverse	no change	slight adverse	no change

<i>Receptor</i>	<i>Viewpoint ref.</i>	<i>Sensitivity of receptor</i>	<i>Description of changes likely to be visible</i>	<i>Magnitude of impacts</i>		<i>Significance of effects</i>	
				<i>CONSTRUCTION</i>	<i>COMPLETION</i>	<i>CONSTRUCTION</i>	<i>COMPLETION</i>
Walkers beside Green Bay	Bryher 5	low	Excavations and construction vehicles including any temporary on-site storage of bulk materials and vehicle movements visible near to footpath over a 70m length. Regrowth of vegetation will quickly obscure resulting installation.	medium adverse	small adverse	slight adverse	negligible
Walkers passing Stinking Porth	Bryher 6	medium	Construction activities including any temporary on-site storage of bulk materials and vehicle movements and vehicles using haulage and access routes. Rise in vegetated dune height by 1m, partially obscuring nearest areas of foreshore over a short distance.	small adverse	negligible	slight adverse	negligible
Walkers on Gweal Hill	Bryher 10	high	Construction activities at Great Popplestone, Stinking Porth and Great Porth visible sequentially. Landings of materials. Vehicles using haulage and access routes to these sites. Barely perceptible permanent changes in height of vegetated dunes, stone emplacements and revetment structures.	small adverse	negligible	moderate adverse	negligible

<i>Receptor</i>	<i>Viewpoint ref.</i>	<i>Sensitivity of receptor</i>	<i>Description of changes likely to be visible</i>	<i>Magnitude of impacts</i>		<i>Significance of effects</i>	
				<i>CONSTRUCTION</i>	<i>COMPLETION</i>	<i>CONSTRUCTION</i>	<i>COMPLETION</i>
Walkers passing north of Great Pool	Bryher 9	medium	Construction activities at Great Popplestone including any temporary on-site storage of bulk materials and vehicle movements. Raised height of rock crest.	small adverse	negligible	slight adverse	negligible
Walkers passing behind Great Popplestone	Bryher 11	low	Excavations and construction vehicle movements. New areas of exposed sand and gravels replacing blanket bracken and bramble, subsequently revegetating.	small adverse	small adverse	negligible	negligible
Walkers and residents using New Road, Bryher	Bryher 12	high	Construction vehicle movements during part of the construction phase. (This may be for Stinking Porth works only, or also for Great Popplestone.)	small adverse	no change	moderate adverse	negligible
Walkers and residents on road near Tresco harbour	Bryher 13	medium	Construction vehicle movements along beach and around headland during works to Church Quay.	negligible	no change	negligible	no change
Walkers passing the Turk's Head	St. Agnes 1	low	Construction vehicle movements in area of quay and using part of walking route.	small adverse	no change	slight adverse	no change

<i>Receptor</i>	<i>Viewpoint ref.</i>	<i>Sensitivity of receptor</i>	<i>Description of changes likely to be visible</i>	<i>Magnitude of impacts</i>		<i>Significance of effects</i>	
				<i>CONSTRUCTION</i>	<i>COMPLETION</i>	<i>CONSTRUCTION</i>	<i>COMPLETION</i>
Walkers on north coastal route, St. Agnes	St. Agnes 2	medium	Storage of materials and equipment adjacent to track, pending reinstatement on completion. Use of track as a construction haulage route.	small adverse	no change	slight adverse	negligible
Walkers passing Porth Killier	St. Agnes 3, 4	medium	Construction activities including any temporary on-site storage of bulk materials, vehicle movements and vehicles using haulage and access routes. Localised extension of area of emplaced rock at east end of bay, view being framed and partially obscured by existing vegetation. Raised area of emplaced rock over approx. 100m, appearing similar in character to existing rocky foreshore.	small adverse	negligible	slight adverse	negligible
Walkers passing Porth Coose	St. Agnes 5	medium	Storage of materials in large bags near to walking route, pending reinstatement on completion. Use of route for construction haulage.	negligible	no change	negligible	negligible
Walkers using New Road, St. Agnes	St. Agnes 9	medium	Medium-distant restricted views of construction activities.	negligible	no change	negligible	negligible

<i>Receptor</i>	<i>Viewpoint ref.</i>	<i>Sensitivity of receptor</i>	<i>Description of changes likely to be visible</i>	<i>Magnitude of impacts</i>		<i>Significance of effects</i>	
				<i>CONSTRUCTION</i>	<i>COMPLETION</i>	<i>CONSTRUCTION</i>	<i>COMPLETION</i>
Residents walking on main route through Lower Town	St. Martin's 3	medium	Storage of materials and equipment in hedged compound adjacent to road and use of road as a construction haulage route.	small adverse	negligible	slight adverse	negligible
Walkers on lanes near Higher Town	St. Martin's 5	low	No physical construction activities or changes: included in baseline with reference to proposed promotion of altered patterns of access to dunes. Public including residents encouraged to avoid crossing dunes in order to safeguard against creation of structural weaknesses and enable regeneration of stabilising vegetation.	no change	no change	negligible	slight beneficial
BEACH USERS							

Receptor	Viewpoint ref.	Sensitivity of receptor	Description of changes likely to be visible	Magnitude of impacts		Significance of effects	
				CONSTRUCTION	COMPLETION	CONSTRUCTION	COMPLETION
Kitchen Porth	Bryher 1	medium	<p>Loss of some existing hedgerow from view. Excavations and construction activities including landings of materials and any temporary on-site storage of bulk materials.</p> <p>Increased intrusion of placed rock in backdrop to beach, comprised of locally appropriate materials.</p> <p>Overall effect may appear stark in the short-term relative to existing view but will soften over time with the regrowth of vegetation behind revetment.</p>	small adverse	small adverse	negligible	negligible
Church Quay	Bryher 2	medium	Landings and haulage of materials during construction only.	small adverse	no change	slight adverse	no change
Brow Ledge Bay	Bryher 4	high	Construction vehicle movements along beach and around headland during works to Church Quay.	small adverse	no change	slight adverse	no change
Great Porth north	Bryher 6	medium	<p>Construction activities including landings of materials and any temporary on-site storage.</p> <p>Addition of Cornish or Scillonian rock armour extending from existing at north end of beach, and demountable flood barrier.</p>	small adverse	medium adverse	slight adverse	slight adverse

Receptor	Viewpoint ref.	Sensitivity of receptor	Description of changes likely to be visible	Magnitude of impacts		Significance of effects	
				CONSTRUCTION	COMPLETION	CONSTRUCTION	COMPLETION
Stinking Porth	Bryher 7	medium	<p>Construction activities including any temporary on-site storage of bulk materials and vehicle movements and vehicles using haulage and access routes.</p> <p>Rise in height of emplaced rock by 2m, softened by regrowth of dune vegetation on back slope.</p>	small adverse	medium adverse	slight adverse	negligible
Great Popplestone	Bryher 10	medium	<p>Construction activities including landings of materials and any temporary on-site storage.</p> <p>Removal of existing scattered rock and concentration in emplacement at far end of beach; recharging with sand won from adjacent dune.</p>	small adverse	small adverse	slight adverse	negligible
Porth Coose	St. Agnes 6	high	<p>Construction activities including any temporary on-site storage of bulk materials.</p> <p>Raised height of dune by approx. 1.2m creating a line of artificially emplaced rock bound within visible webbing. Visible edge may seem slightly at odds with natural form and undulations of surrounding landscape in the view.</p>	medium adverse	small adverse	moderate adverse	slight adverse

Receptor	Viewpoint ref.	Sensitivity of receptor	Description of changes likely to be visible	Magnitude of impacts		Significance of effects	
				CONSTRUCTION	COMPLETION	CONSTRUCTION	COMPLETION
Periglis	St. Agnes 7, 8	high	Construction activities including any temporary on-site storage of bulk materials. Removal from view of degraded erosion control fabrics currently visible at dune surface.	medium adverse	small beneficial	moderate adverse	moderate beneficial
West of Lower Town	St. Martin's 2	high	Delivery of materials to quayside and haulage.	small adverse	no change	slight adverse	n/a
Neck of the Pool	St. Martin's 4	medium	Construction activities including any temporary on-site storage. Introduction of small area of aggregate surface at entrance to beach and approx. 67.5m of visually permeable timber fencing – this is assumed to be slightly negative; however, responses are likely to be subjective and varied.	small adverse	small adverse	slight adverse	slight adverse
GUESTS AND PATRONS OF HOSPITALITY							
Guests at Hell Bay Hotel	Bryher 6, 8	medium	Construction activities including haulage and any temporary on-site storage. Barely perceptible increase in height to rear of Stinking Porth dune. Clear but insignificant view of the top of the slightly raised rock crest near to the degraded area of the Great Popplestone sea wall.	medium adverse	negligible	moderate adverse	negligible

Receptor	Viewpoint ref.	Sensitivity of receptor	Description of changes likely to be visible	Magnitude of impacts		Significance of effects	
				CONSTRUCTION	COMPLETION	CONSTRUCTION	COMPLETION
Patrons of Turk's Head Inn	St. Agnes 1	low	Haulage vehicles accessing quayside.	small adverse	no change	slight adverse	n/a
Guests at Karma Hotel	St. Martin's 1, 2	high	Haulage vehicles accessing quayside.	small adverse	no change	slight adverse	n/a
BOAT PASSENGERS (COMMUTERS AND TOURISTS)							
Church Quay	Bryher 3	low	Landings and haulage of materials only.	small adverse	no change	slight adverse	no change
Quay at Porth Congar	St. Agnes 1	medium	Haulage vehicles accessing quayside.	small adverse	no change	slight adverse	n/a
Quay at Lower Town	St. Martin's 2	medium	Haulage using quay clearly visible.	small adverse	no change	slight adverse	n/a
Tresco harbour	Bryher 12	medium	Landings and haulage of construction materials via Church Quay and haulage route around adjacent headland would be fully visible but distant.	negligible	no change	negligible	no change
Passing Green Bay	Bryher 14	medium	Clearance and construction for the Green Bay works would be visible, as would the completed installation.	small adverse	small adverse	slight adverse	slight adverse
Approaching Church Quay	Bryher 15	medium	Landings and haulage of construction materials via Church Quay and around adjacent headland would be fully visible.	small adverse	no change	slight adverse	no change

Receptor	Viewpoint ref.	Sensitivity of receptor	Description of changes likely to be visible	Magnitude of impacts		Significance of effects	
				CONSTRUCTION	COMPLETION	CONSTRUCTION	COMPLETION
ROAD USERS IN VEHICLES							
Near Church Quay	Bryher 2	low	Landings and haulage of construction materials via Church Quay and around adjacent headland would be fully visible.	small adverse	no change	slight adverse	no change
New Road, Bryher	Bryher 11	low	Haulage only.	small adverse	no change	slight adverse	n/a
New Road, St. Agnes	St. Agnes 9	low	Distant, fleeting and peripheral view of construction at Porth Coose bay only; finished works not perceptible.	negligible	no change	negligible	n/a
Road through Lower Town	St. Martin's 3	low	Haulage route and building materials compound only, pending reinstatement on completion.	small adverse	negligible	slight adverse	negligible
OCCUPANTS OF PRIVATE DWELLINGS							
Residents near Kitchen Porth site	Bryher 1	medium	Clearance and construction phase in a small area at the periphery of the view, including landings of materials. Completed installation would be at least partially visible from gardens and within the houses, particularly any upper stories.	medium adverse	small adverse	moderate adverse	slight adverse
Residents near Church Quay site	Bryher 2	low	Landings and haulage of materials via quay would be visible during construction phase only.	small adverse	no change	slight adverse	no change
Residents near Green Bay site	Bryher 5	medium	Clearance, construction and completed installation.	medium adverse	small adverse	moderate adverse	slight adverse

<i>Receptor</i>	<i>Viewpoint ref.</i>	<i>Sensitivity of receptor</i>	<i>Description of changes likely to be visible</i>	<i>Magnitude of impacts</i>		<i>Significance of effects</i>	
				<i>CONSTRUCTION</i>	<i>COMPLETION</i>	<i>CONSTRUCTION</i>	<i>COMPLETION</i>
Residents of isolated house between Great Porth and Stinking Porth	Bryher 6, 7	high	Construction and haulage highly visible on two sides (assumed sequential). Increased area of rock emplacements in views to south and north, comprising locally appropriate stone of relatively uniform sizes. Slightly raised dune height in views to north.	medium adverse	negligible	moderate adverse	negligible
Residents of The Town with west facing prospects	Bryher 7	medium	Great Porth North and Stinking Porth sites visible, including construction, haulage and small proportion of the completed installations.	small adverse	neutral	slight adverse	neutral
Residents of Middle Town St. Agnes, near to Periglis	St. Agnes 7	high	Construction including any temporary on-site storage of bulk materials and haulage at Periglis and Porth Coose. Slightly raised dune height along length of both bays, revegetating after a short period.	medium adverse	neutral	moderate adverse	neutral
Residents of Middle Town St. Agnes on higher ground with west facing prospects	St. Agnes 9	medium	Construction and haulage during the construction phase. Barely perceptible raised dune height, revegetating after a short period.	small adverse	neutral	slight adverse	neutral

<i>Receptor</i>	<i>Viewpoint ref.</i>	<i>Sensitivity of receptor</i>	<i>Description of changes likely to be visible</i>	<i>Magnitude of impacts</i>		<i>Significance of effects</i>	
				<i>CONSTRUCTION</i>	<i>COMPLETION</i>	<i>CONSTRUCTION</i>	<i>COMPLETION</i>
Residents in houses and gardens lining Old Lane and New Lane	St. Agnes 9	high	Construction traffic passing between Porthconger Quay and Periglis is likely to be visible during periods when wet ground prevents use of northern haulage route.	medium adverse	neutral	moderate adverse	neutral
Residents of Lower Town St. Martin's	St. Martin's 3	medium	Haulage and site compound, pending reinstatement on completion.	small adverse	no change	slight adverse	n/a

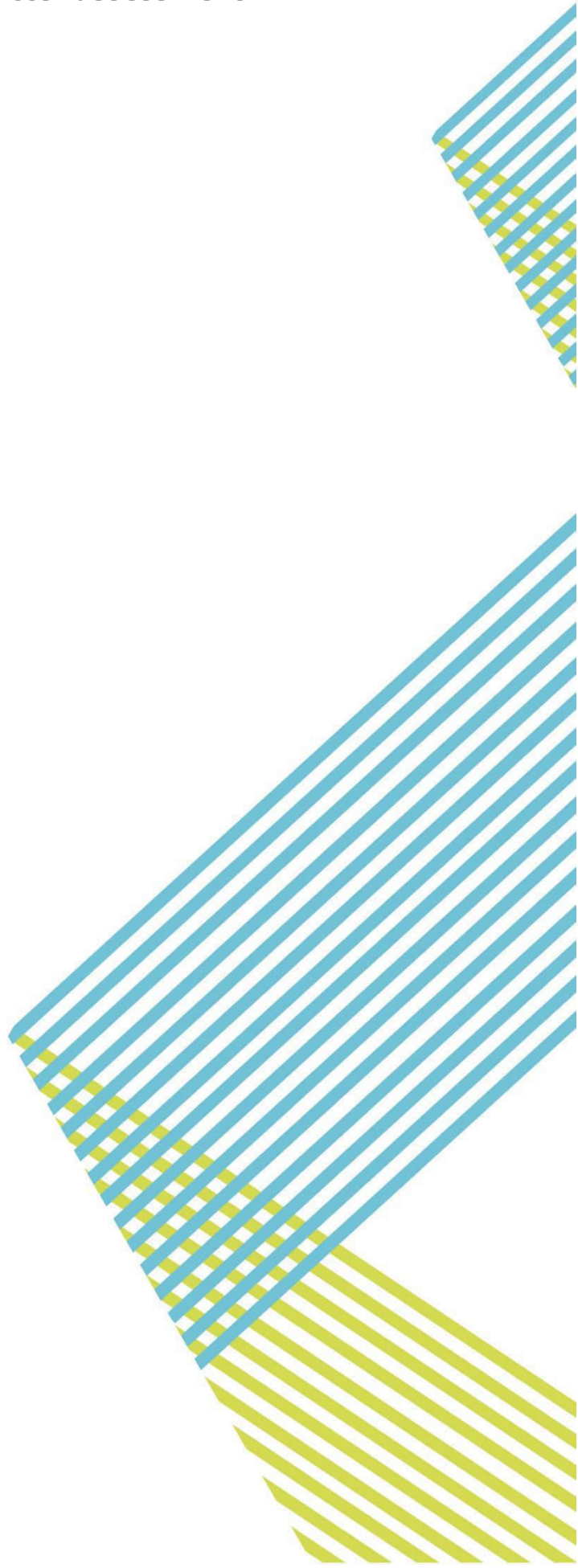
Table C6: Residual visual impacts after mitigation of significant effects.

Mitigation measures proposed below are intended to address significant effects relating to the most sensitive receptors – at least moderate adverse during construction or slight adverse on completion.

Receptor	Viewpoint ref.	Significant effects	Mitigation	Residual significance		
				Construction	Opening	15 years
Walkers, beach users and residents at Kitchen Porth	Bryher 1	Loss of some existing hedgerow from view. Excavations and construction activities including landings and any temporary on-site storage of bulk materials. Intrusion of emplaced rock in backdrop to beach, albeit comprised of locally appropriate materials. Overall effect may appear stark in the short-term relative to existing view but will soften over time with the regrowth of vegetation behind revetment.	Replant to re-establish shelterbelt behind revetment, using locally appropriate species.	slight adverse	slight adverse	negligible
Residents near Green Bay site	Bryher 5	Clearance, construction and potentially a small section of the completed work.	Replant any areas of lost vegetation using locally appropriate species.	slight adverse	slight adverse	neutral
Boat passengers passing Green Bay	Bryher 12	Clearance and construction for the Green Bay works would be visible, as would the completed installation. Loss of small area of trees and shrubs from the view.	Replant any areas of lost vegetation using locally appropriate species.	slight adverse	negligible	neutral
Beach users at Great Porth North	Bryher 6	Construction activities including landings of materials and any temporary on-site storage. Addition of Cornish or Scillonian rock armour extending from existing at north end of beach, and demountable flood barrier.	Use Scillonian granite where possible and grade any new rock into existing rock emplacement to the north of the bay to create gradual transition.	slight adverse	slight adverse	negligible
Walkers on Gweal Hill	Bryher 8	Construction activities at Great Popplestone, Stinking Porth and Great Porth visible sequentially. Landings of	Carefully programme works to ensure haulage and	slight adverse	negligible	neutral

Receptor	Viewpoint ref.	Significant effects	Mitigation	Residual significance		
				Construction	Opening	15 years
		<p>materials and vehicles using haulage and access routes to these sites.</p> <p>Barely perceptible permanent changes in height of vegetated dunes, stone emplacements and revetment structures.</p>	<p>construction disrupts views in one direction only at any one time.</p>			
<p>People accessing the beach at Porth Coose</p>	<p>St. Agnes 6</p>	<p>Construction activities including any temporary on-site storage of bulk materials.</p> <p>Raised height of dune by approx. 1.2m creating a line of artificially emplaced rock bound within visible webbing. Visible edge may seem slightly at odds with natural form and undulations of surrounding landscape in the view.</p>	<p>Use Scillonian or Cornish granite as fill material for rock bags.</p>	<p>slight adverse</p>	<p>slight adverse</p>	<p>negligible</p>
<p>Beach users at Neck of the Pool</p>		<p>Construction activities including any temporary on-site storage.</p> <p>Introduction of small area of aggregate surface at entrance to beach and approx. 67.5m of visually permeable timber fencing – this is assumed to be slightly negative; however, responses are likely to be subjective and varied.</p>	<p>Ensure aggregate is derived from local sources or pale colour complementary to surrounding surfaces.</p>	<p>slight adverse</p>	<p>negligible</p>	<p>neutral</p>
Overall significance of visual effects				<p>slight adverse</p>	<p>negligible</p>	<p>neutral</p>

Appendix 6.2: Existing landscape character assessment



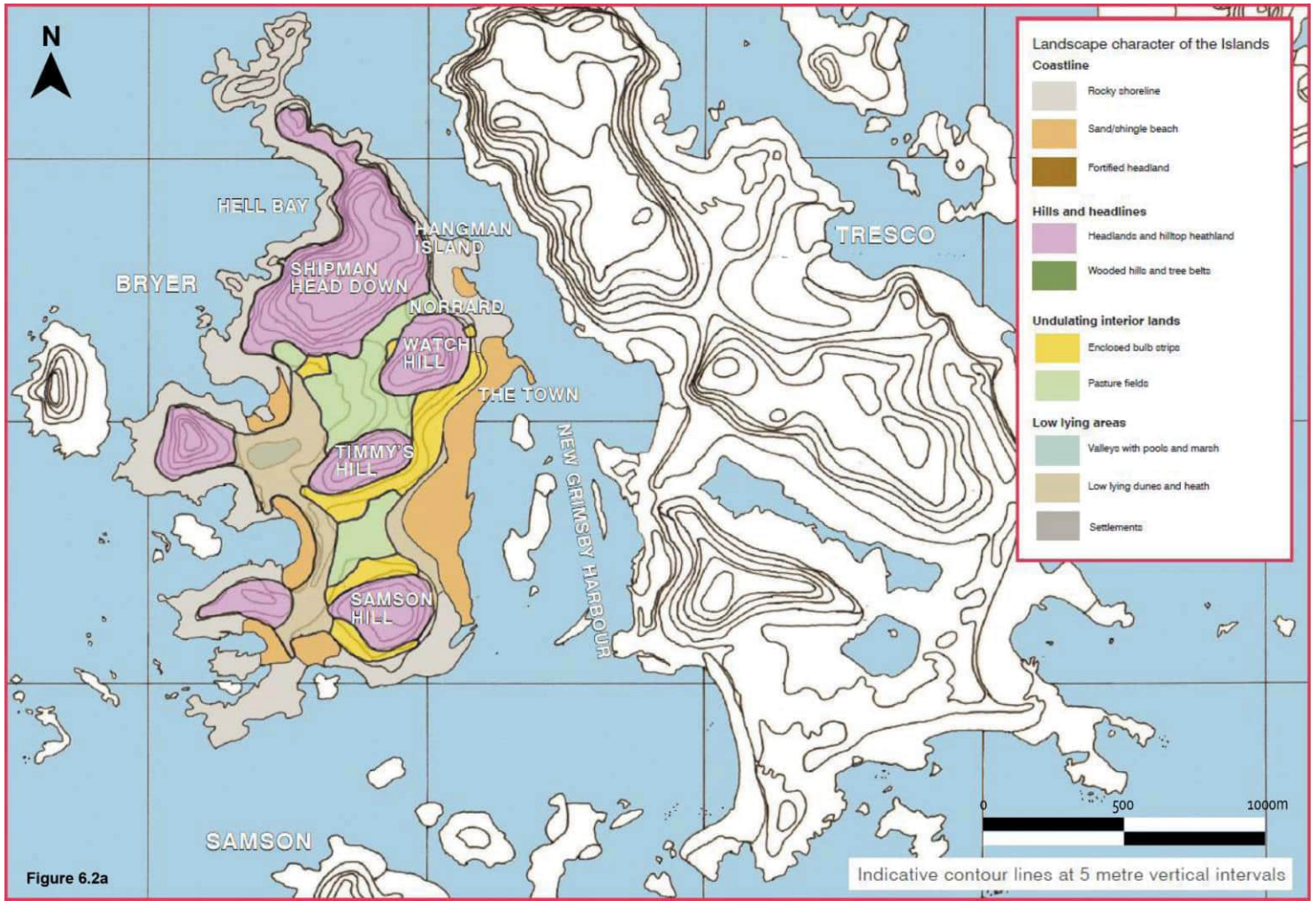


Figure 6.2a

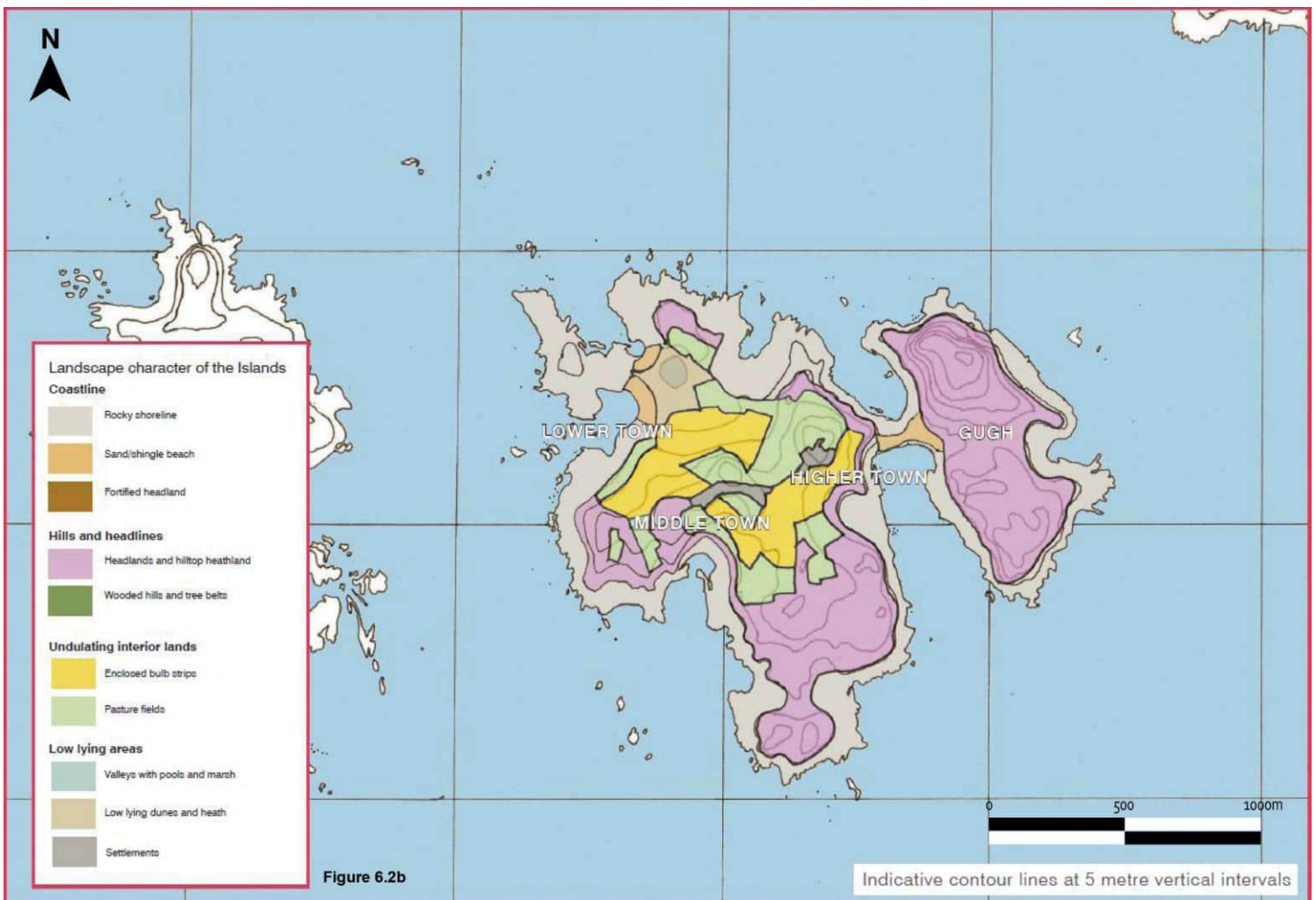


Figure 6.2b

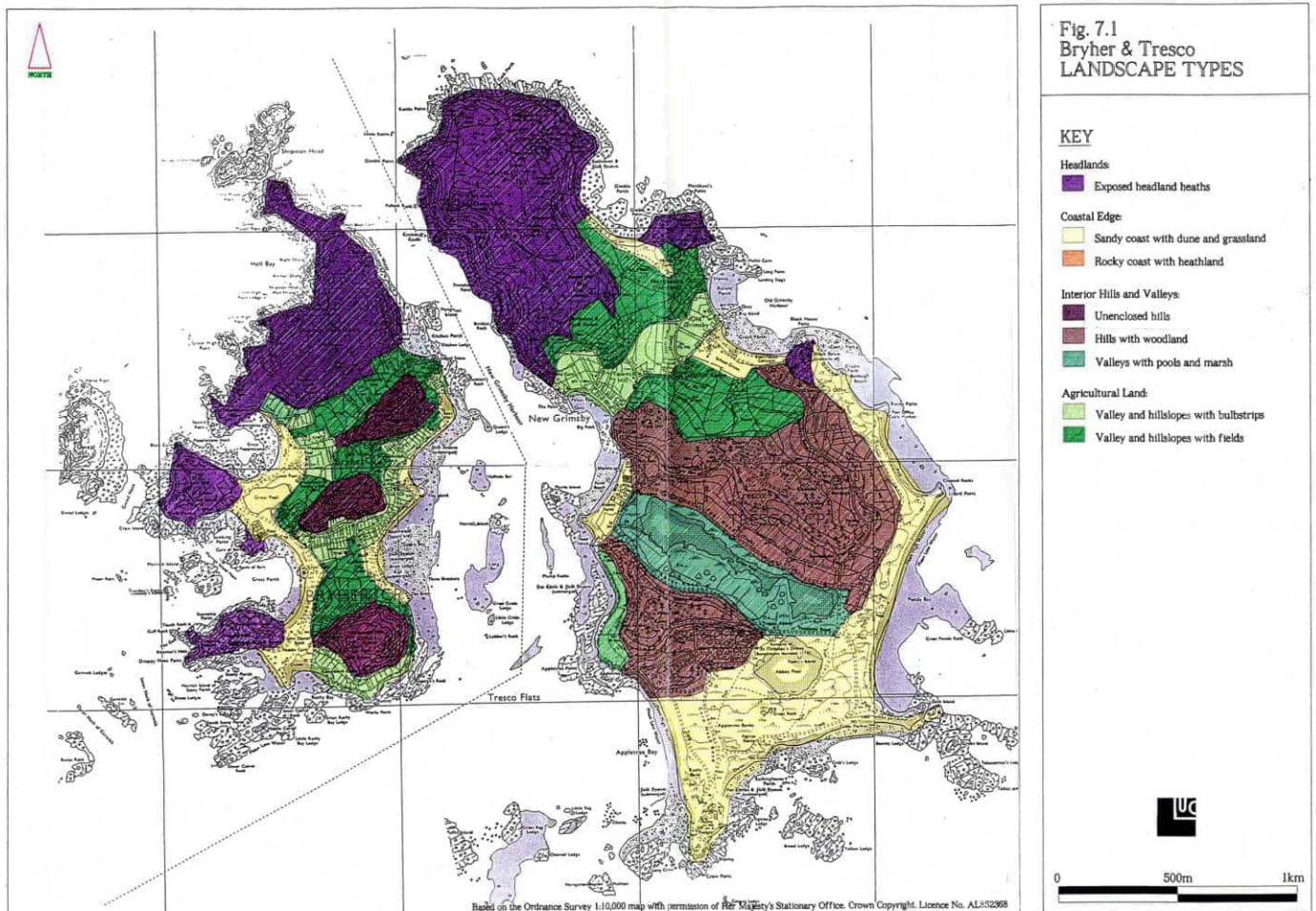
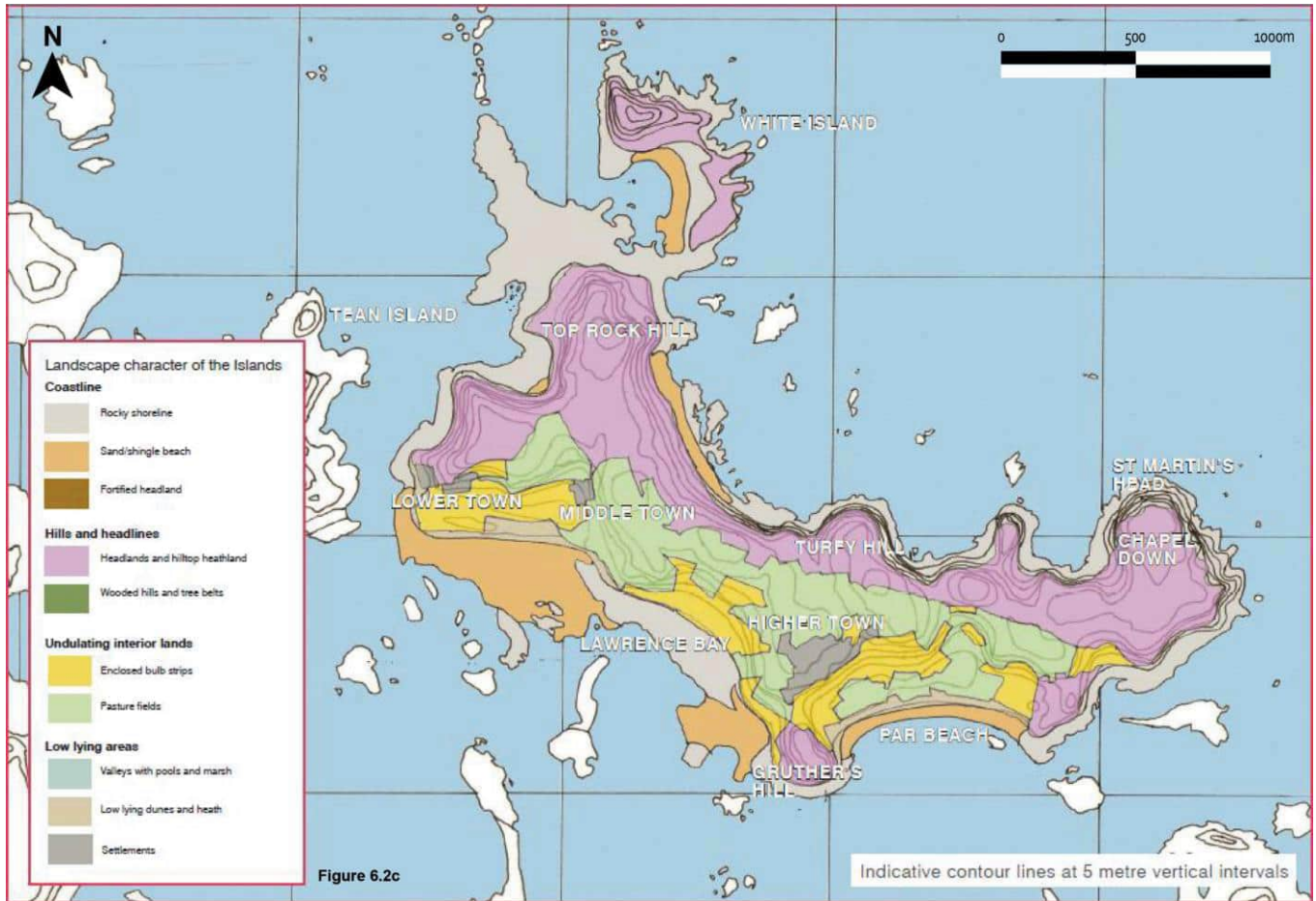


Figure 6.2d

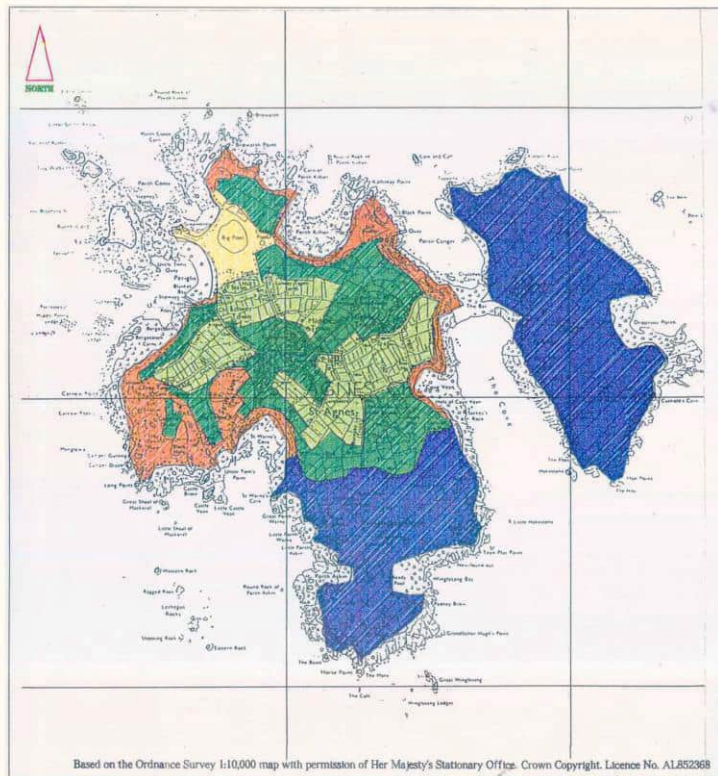


Figure 6.2e

Fig. 7.2
St. Agnes:
LANDSCAPE TYPES

KEY

Headlands:

Low-lying southern headlands

Coastal Edge:

Sandy coast with dune and grassland

Rocky coast with heathland

Agricultural Land:

Valley and hillslopes with bulbstrips

Valley and hillslopes with fields



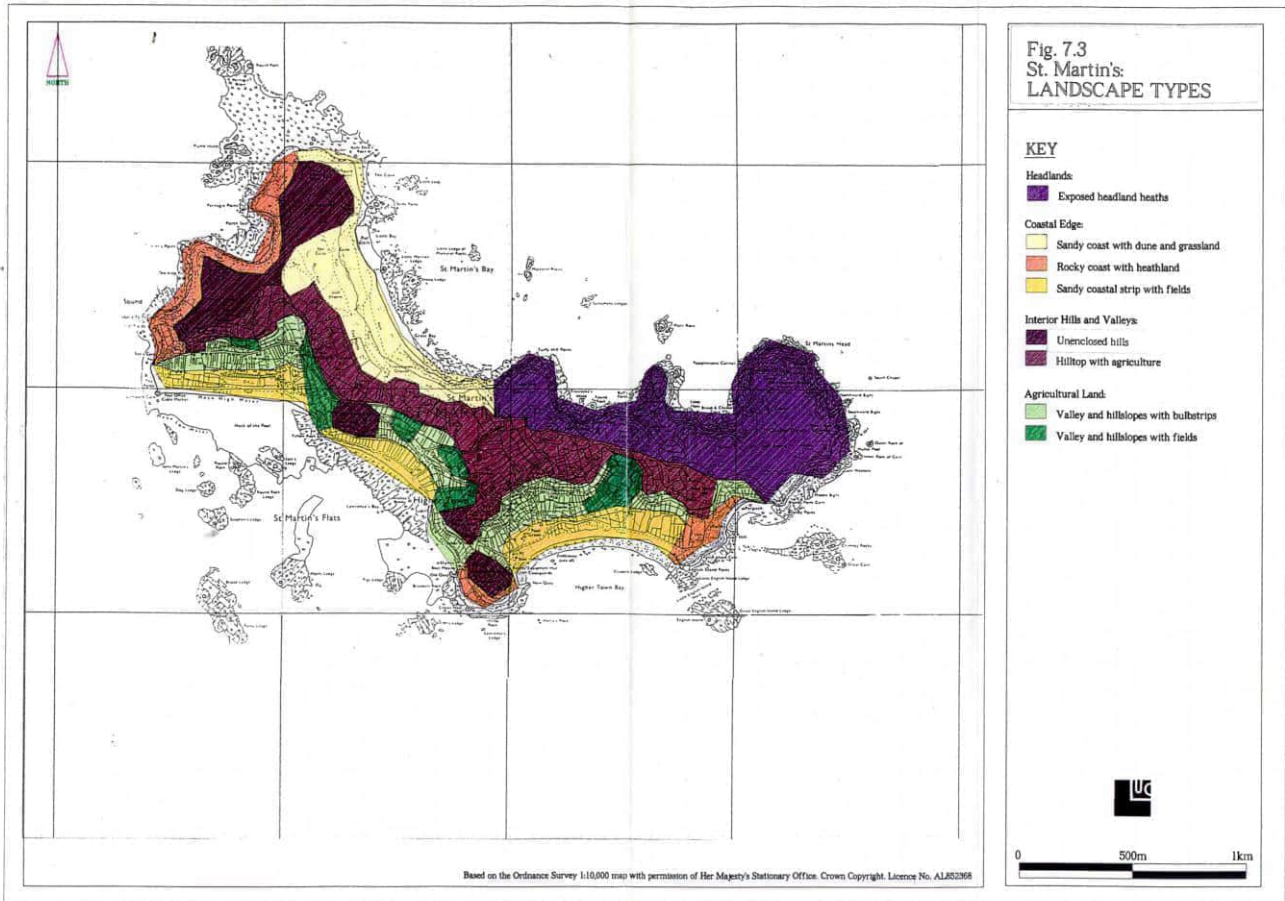
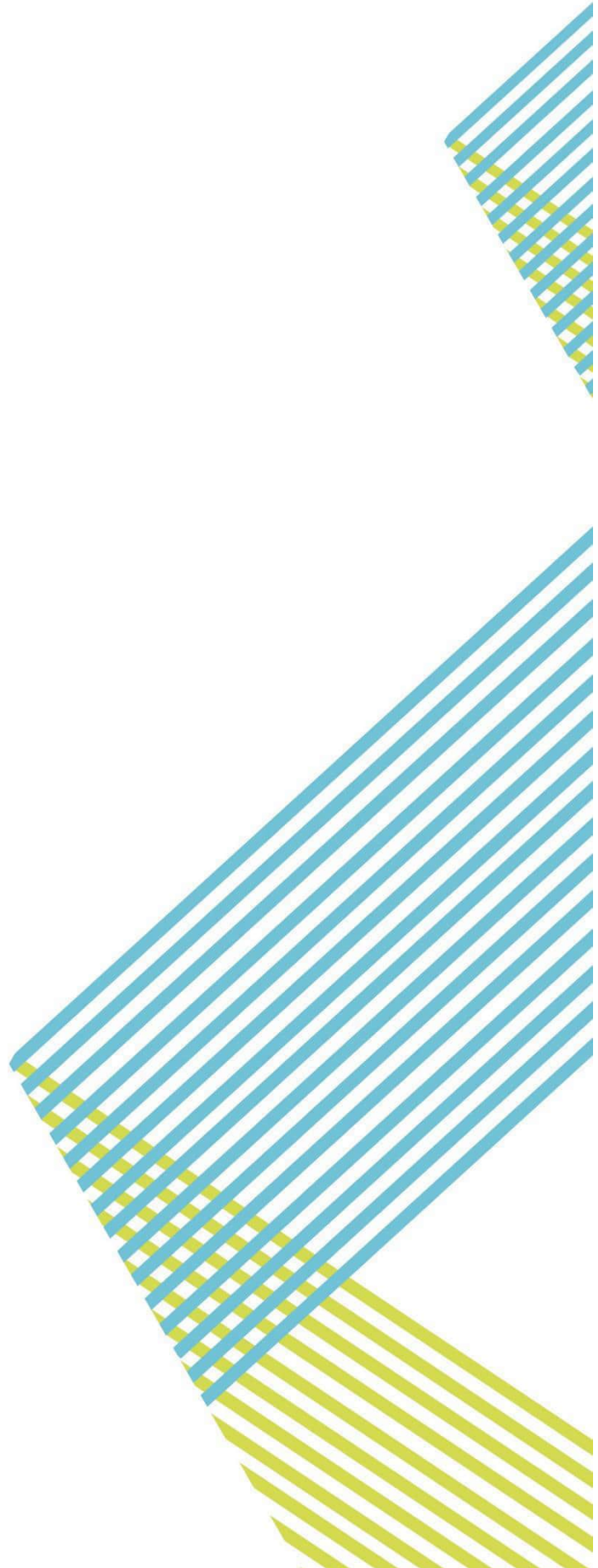


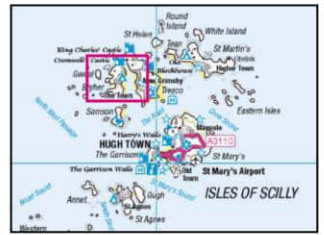
Figure 6.2f

Appendix 6.3: Topography





Kings Chambers
8 High Street
NEWPORT
NP20 1FQ
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info@jbaconsulting.com



**TOPOGRAPHY, ACCESS,
AND LOCATION OF
CONTEXT PHOTOGRAPHS**
Isles of Scilly - Bryher

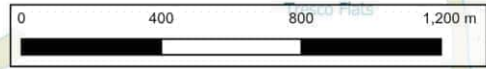
Legend

- Development Red Line Boundary
 - Contour lines (10m interval)
 - Study Area
 - Main Road
 - Footpath and track
 - Context photograph location
- *See Environmental Statement Section 6.4.1 - Survey Observations Overview and Landscape change

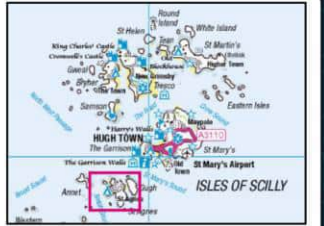
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Checked By: SW Date: 06-12-2021
Approved By: PH Date: 02-12-2021
Status: S3 Revision: P04

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**TOPOGRAPHY, ACCESS,
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Isles of Scilly - St. Agnes

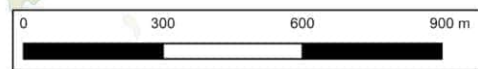
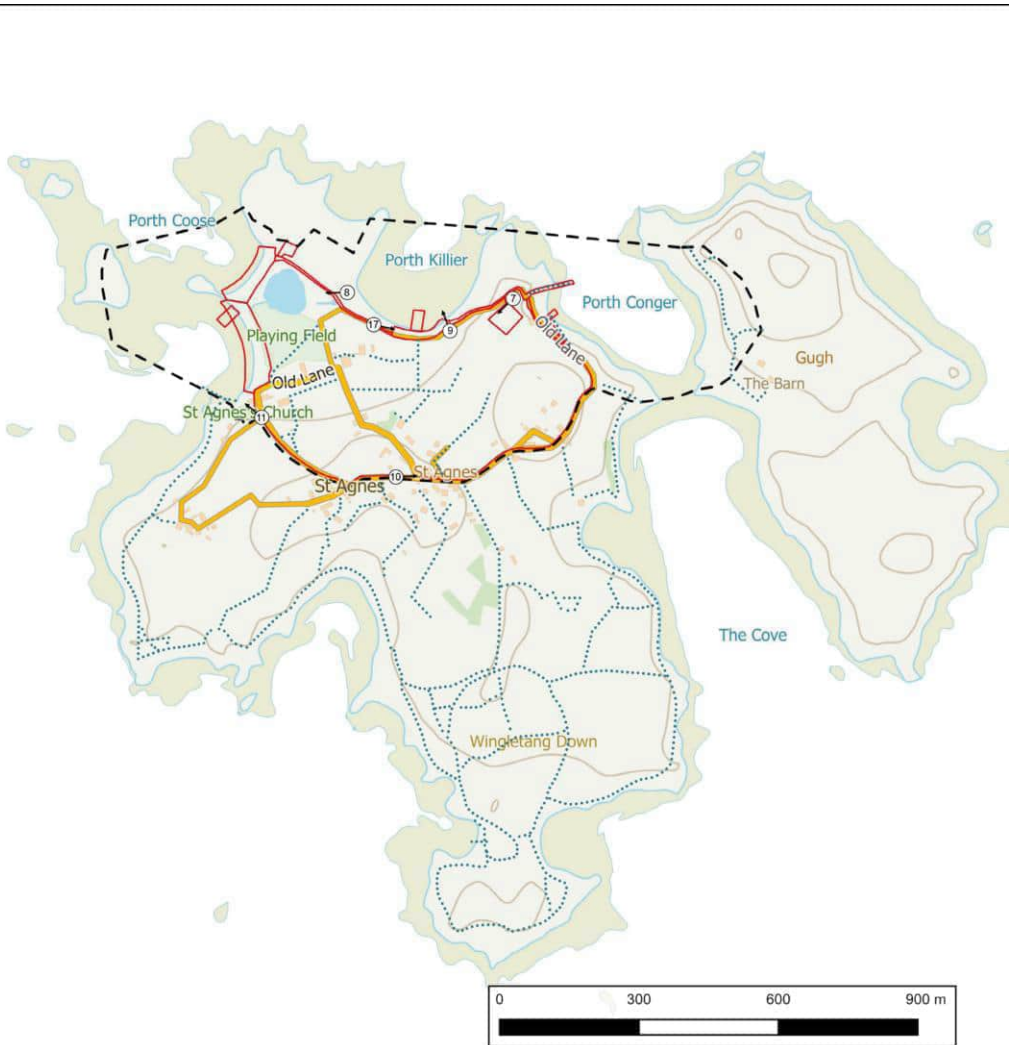
Legend

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 - Main Road
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Status: S3 Revision: P04

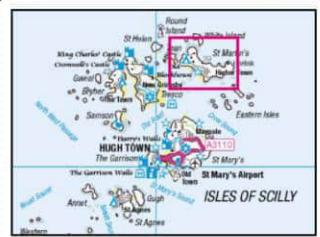
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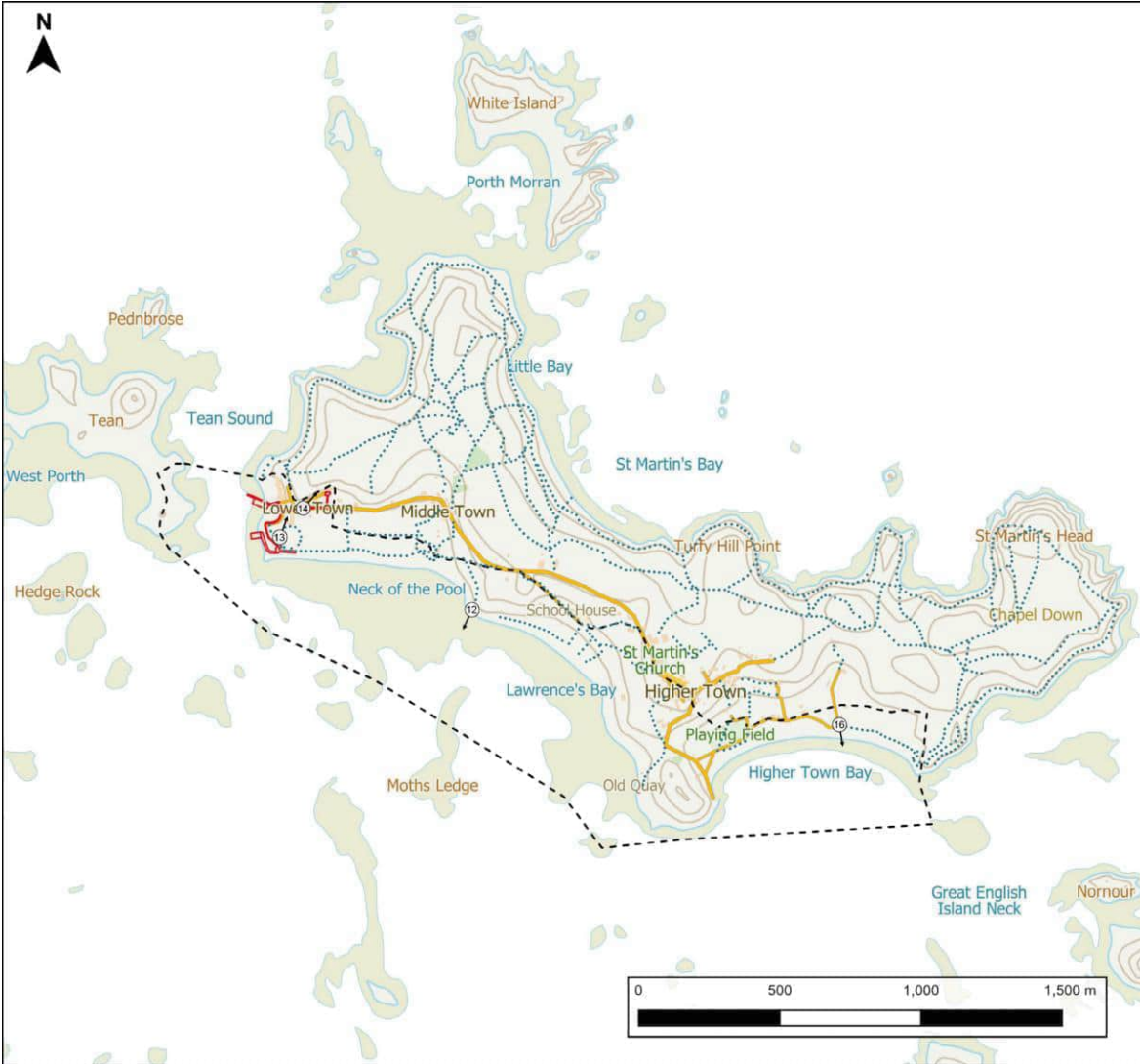
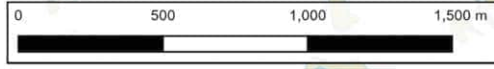
**TOPOGRAPHY, ACCESS,
 AND LOCATION OF
 CONTEXT PHOTOGRAPHS
 Isles of Scilly - St. Martin's**

Legend

- Development Red Line Boundary
 - Contour lines (10m interval)
 - Study Area
 - Main Road
 - Footpath and track
 - Context photograph location
- *See Environmental Statement
 Section 6.4.1 - Survey Observations
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Drawn By: CL Date: 30-11-2021
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 Status: S3 Revision: P04

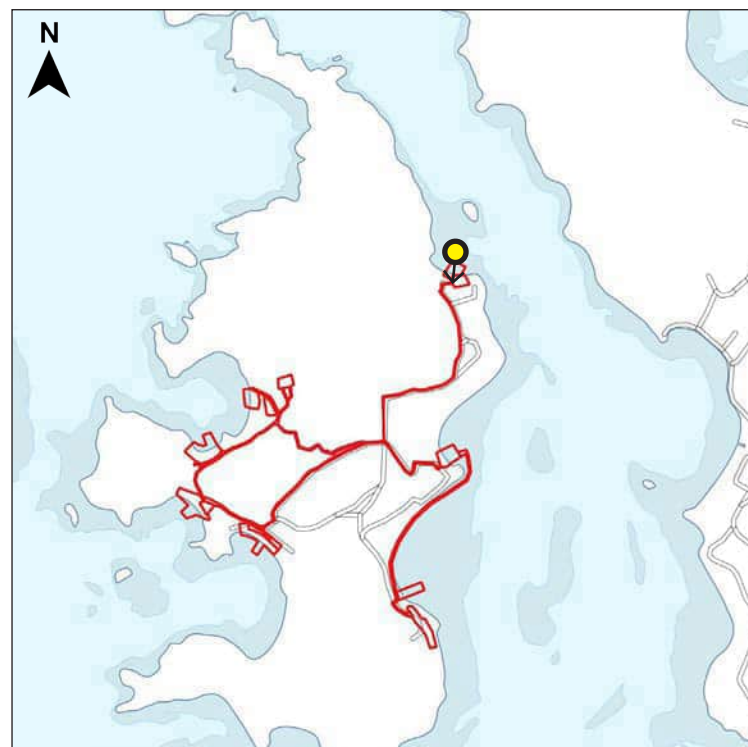
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Viewpoint location plan

 Proposed development location  Viewpoint location



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Viewpoint description

Pleasant view of a sandy beach with scattered rocks backed by tall evergreen shrubs and large boulders. The sloped roof and upper section of a single house is visible above this backdrop. Kitchen Porth works fully visible, including clearance and construction works as well as the completed construction. The site takes up the majority of the view, although the viewer will also be aware of the more open and dramatic view towards the bay, water and nearby headlands in the opposite direction.

Visible changes from this location

Loss of some existing hedgerow from view. Excavations and construction activities including any temporary on-site storage of bulk materials. Intrusion of emplaced rock in backdrop to beach, albeit comprised of locally appropriate materials. Overall effect may appear stark in the short-term relative to existing view but will soften over time with the regrowth of vegetation behind revetment.

OS Grid Reference: SV 88116 15460
Distance to site: 0.02 km
Camera direction: S
Viewpoint elevation: 2m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Project: 2021s1204

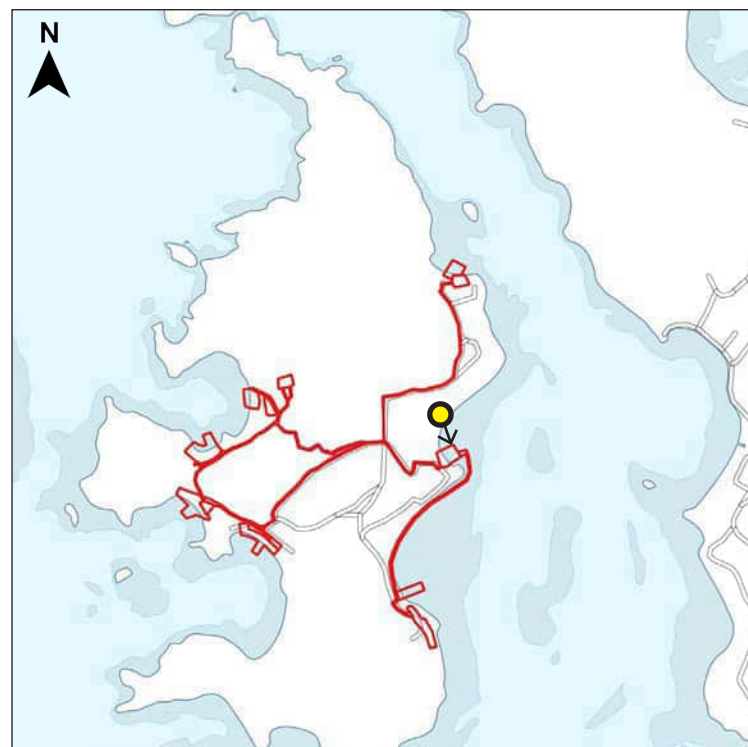
Figure 6.4.1:
**Viewpoint Bryher 1:
Kitchen Porth**



Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Pleasant and interesting view across sandy bay taking in open water, boats, quayside and waiting room and distant views of Tresco shore. Occasionally partially obscured by shrubby vegetation. View develops along length of beachside road.

Visible changes from this location

Landing and haulage of materials during construction.

OS Grid Reference: SV 88030 14966
Distance to site: 0.00 km
Camera direction: S
Viewpoint elevation: 6m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.2:
**Viewpoint Bryher 2:
Lane opposite Church Quay**

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Salts Mill, Victoria Road
Saltire, Shipley
BD18 3LF

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Fax (01274) 714272
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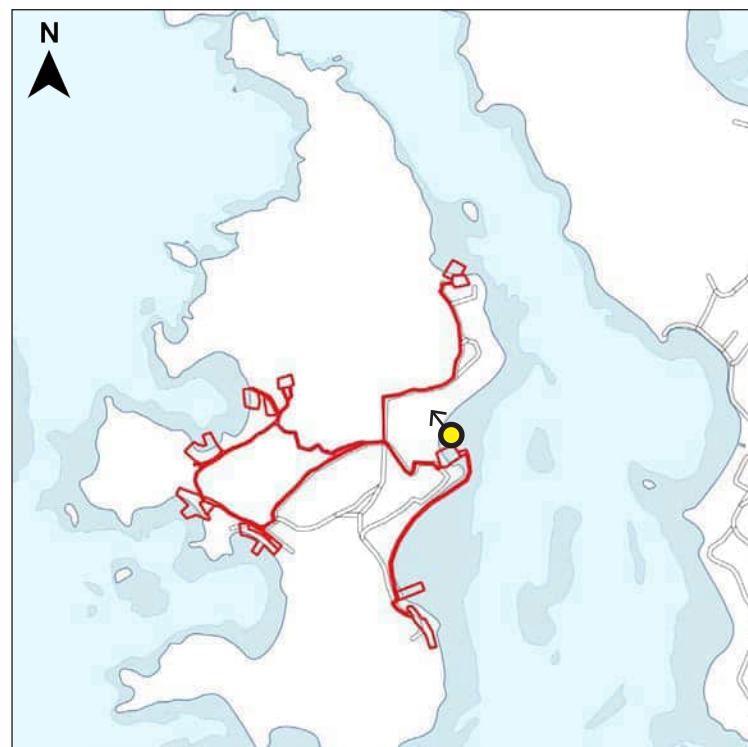


Landing and Haulage Only



Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

Pleasant and engaging views from quayside across beach and bay to island landscape including attractive cluster of dwellings and surrounding vegetated rolling hills. The ancient All Saints church forms an appealing focal point at the periphery of the view. The quay infrastructure detracts marginally.

Visible changes from this location

Landing and haulage of materials during construction.

OS Grid Reference: SV 88078 14901
Distance to site: 0.00 km
Camera direction: NW
Viewpoint elevation: 6m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.3:
Viewpoint Bryher 3:
Church Quay

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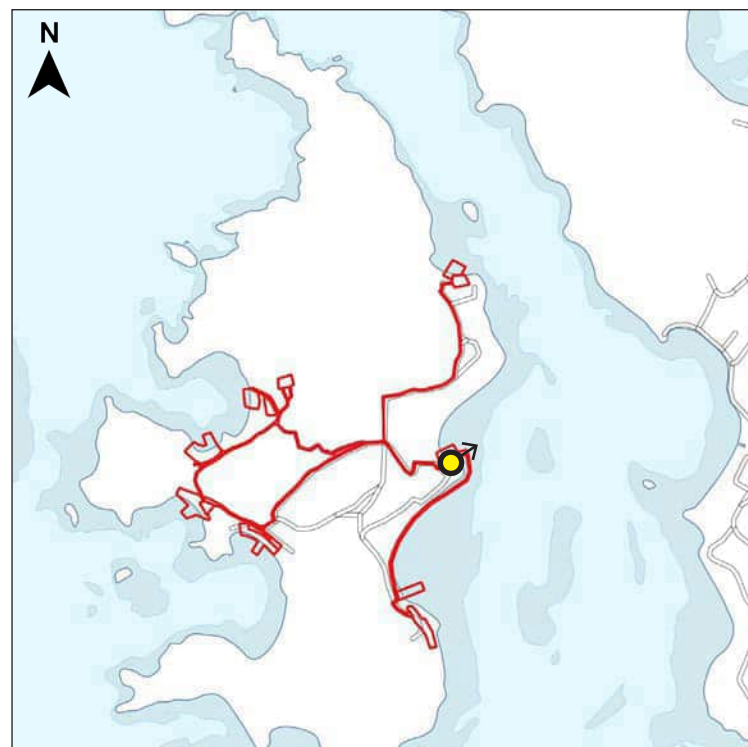




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Very pleasant view of long sandy beach opening onto narrow stretch of open water to Tresco shoreline opposite. Construction vehicles would be visible from this location when tide allows during part of programme.

Visible changes from this location

Construction vehicle movements along beach and around headland during works to Church Quay.

OS Grid Reference: SV 88045 14818
 Distance to site: 0.00 km
 Camera direction: NE
 Viewpoint elevation: 0m AOD
 Camera model: Nikon D7000
 Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: slightly overcast

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Figure 6.4.4:
**Viewpoint Bryher 4:
Brow Ledge Bay**

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 Approximate extent of completed development

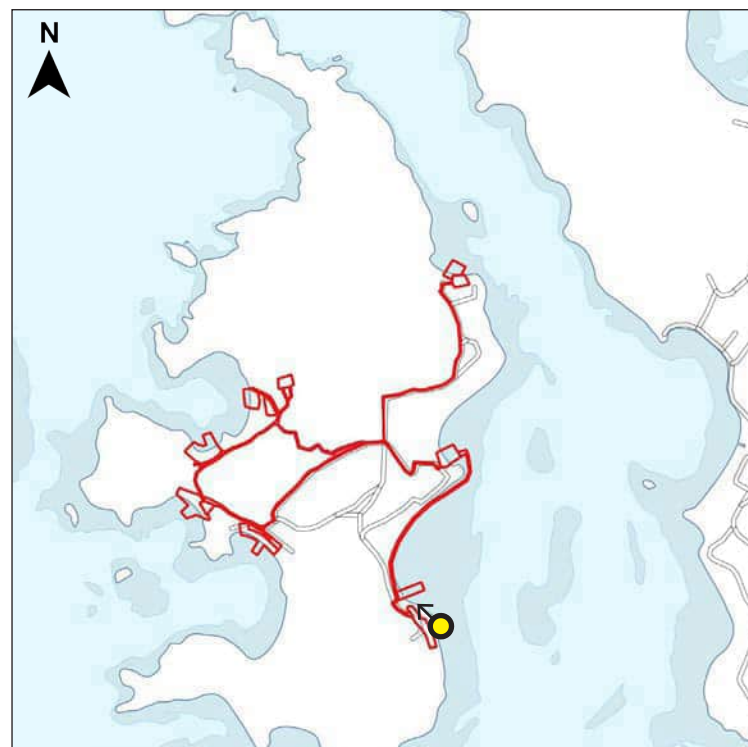
Images for landscape visual assessment

The images contained on this page are not representative of scale and distance from the actual viewpoint and show the proposed development in its wider landscape context only for landscape and visual assessment.



Viewpoint location plan

 Proposed development location  Viewpoint location



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Viewpoint description

Pleasant views with grassy footpath in foreground, adjacent scrubby vegetation with scattered rocks and distant views across narrow stretch of open water to Tresco shoreline opposite. The site is currently barely visible due to intervening tall shrubs and small trees. Clearance, construction works and potentially some of the completed works would be visible from this location.

Visible changes from this location

Clearance of existing groundcover vegetation. Any temporary on-site storage of bulk materials and vehicle movements over a 70m length of shoreline close to footpath. Growth of planted and re-emergent vegetation will quickly obscure the resulting installation.

OS Grid Reference: SV 88013 14418
Distance to site: 0.02 km
Camera direction: NE
Viewpoint elevation: 2m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: overcast

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Figure 6.4.5:
**Viewpoint Bryher 5:
Green Bay**

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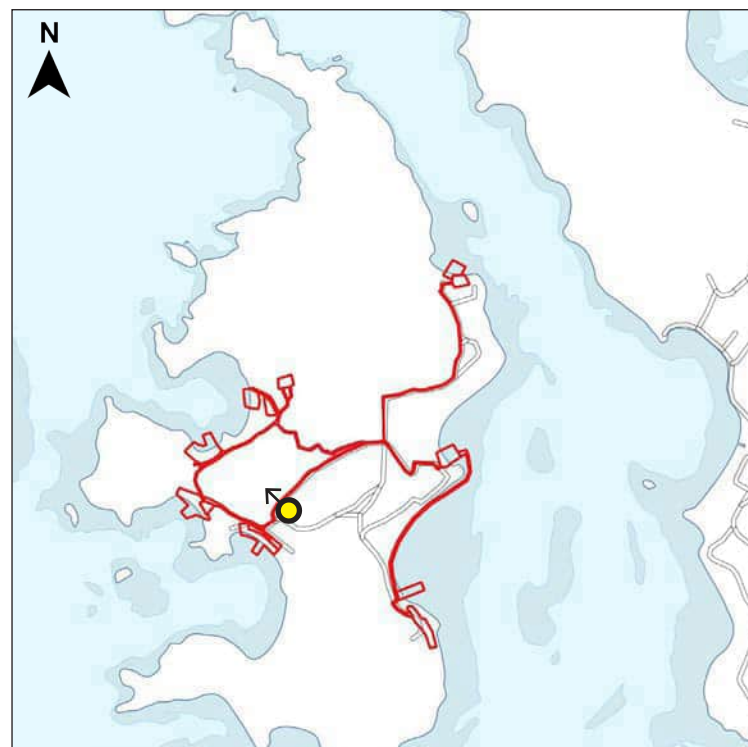
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Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

An expansive view of the bay, the eye being drawn to the open sea framed by headlands and rocky islets. Closer to, the beach forms an attractive sweeping band which also encompasses the viewer. However, in this location, the existing rock armour forms a slightly stark area of uniformly textured, albeit natural material at the periphery of the view. The works and the completed construction for this part of the site would be fully visible.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Addition of Cornish or Scillonian rock armour extending from existing at north end of beach, and demountable flood barrier. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87562 14674
Distance to site: 0.02 km
Camera direction: NW
Viewpoint elevation: 6m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: semi-overcast, broken cloud

BLOOM –
Off islands of Isles of Scilly
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Project: 2021s1204

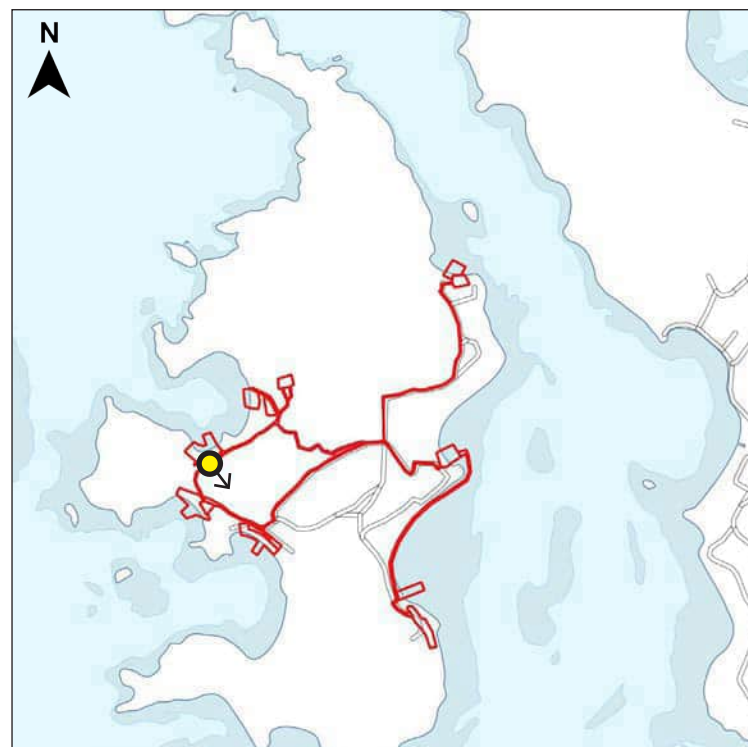
Figure 6.4.6:
**Viewpoint Bryher 6:
Great Porth Beach North**





Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

Open view across gently sloping area of grassland, beach and open sea, framed by tall headland to right and isolated house to left. The site is visible in the form of the back of the dune and part of the beach. Construction works, haulage and any completed works would be clearly visible.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials and vehicle movements and vehicles using haulage and access routes.
Rise in height of emplaced rock by 2m, softened by regrowth of dune vegetation on back slope.
Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87337 14822
Distance to site: 0.00 km
Camera direction: SE
Viewpoint elevation: 3m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: semi-overcast, broken cloud

BLOOM –
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Figure 6.4.7:
**Viewpoint Bryher 7:
Stinking Porth**





Approximate extent of completed development within this part of the view

Images for landscape visual assessment

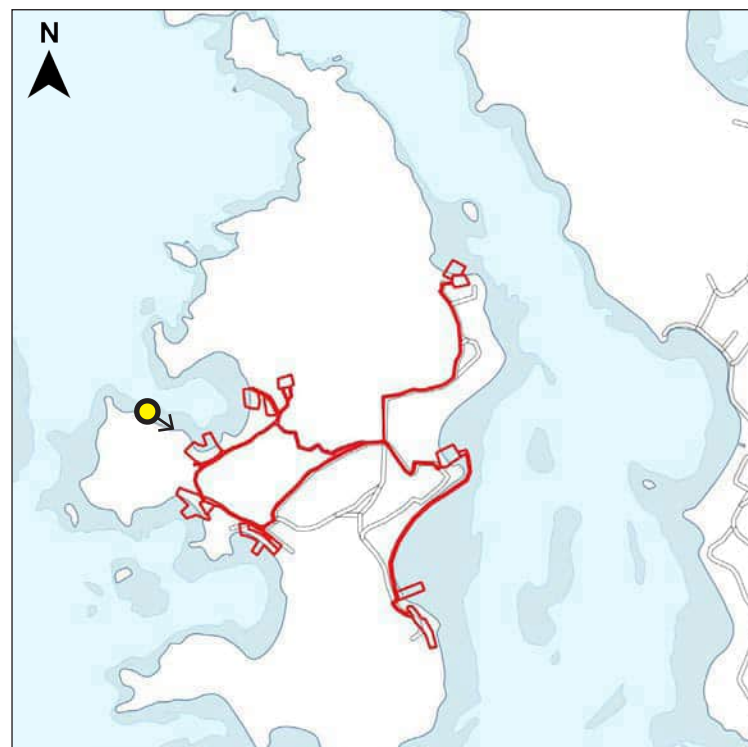
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Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Stunning panoramic view across Bryher towards Tresco and St. Mary's in the far distance. Provides a unique appreciation of the Scillonian landscape and seascape. Clear view of all Great Popplestone, Stinking Porth and Great Porth sites within a much wider landscape context. Construction works, haulage and any completed works would be fully visible.

Visible changes from this location

Construction activities at Great Popplestone, Stinking Porth and Great Porth visible sequentially. Vehicles using haulage and access routes to these sites. Barely perceptible permanent changes in height of vegetated dunes, stone emplacements and revetment structures. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87138 14963

Distance to site: 0.17 km

Camera direction: SE

Viewpoint elevation: 11m AOD

Camera model: Nikon D7000

Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens

Crop factor: 1.5x

35mm equivalent: 50mm fixed lens

Horizontal field of view: 65.5°

Height of Camera above ground: 1.55m

Weather Conditions: semi-overcast, broken cloud

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Figure 6.4.8:
**Viewpoint Bryher 8:
Gweal Hill**

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 Approximate extent of completed development

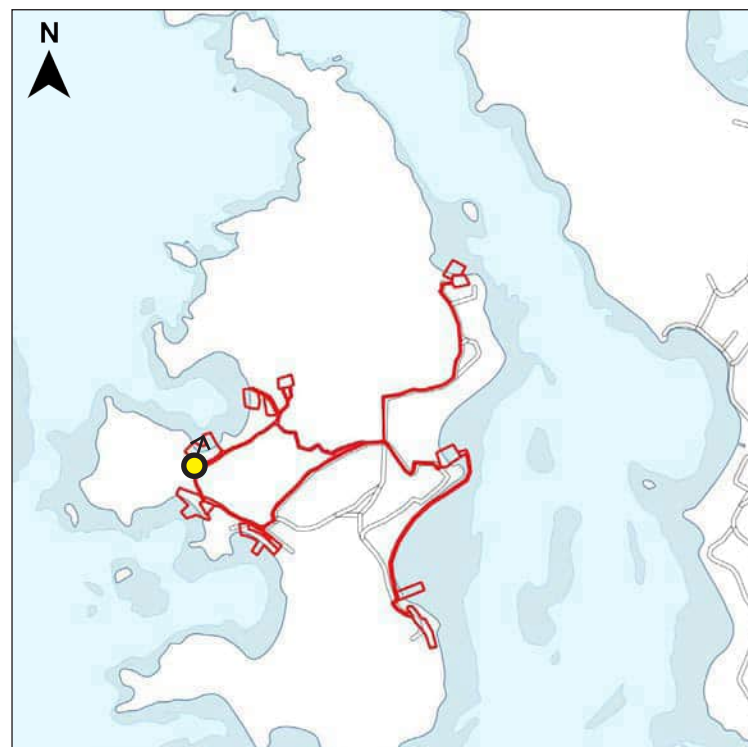
Images for landscape visual assessment

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Viewpoint location plan

 Proposed development location  Viewpoint location



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Viewpoint description

Uninspiring view to rear of existing concrete sea-wall and eroded ground, framed by mass of Gweal Hill and Shipman Head Down. Wider context of grassland, heath and bracken/bramble. The Great Popplestone site would be visible including the area of wall to be enhanced, construction and haulage.

Visible changes from this location

Construction activities at Great Popplestone including any temporary on-site storage of bulk materials and vehicle movements.
Raised height of mortared masonry wall; tidying of unsightly rubble and exposed concrete into more formalised structure and subsequent re-establishment of natural vegetation over worked area.
Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87350 14905
Distance to site: 0.00 km
Camera direction: N
Viewpoint elevation: 2m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: broken cloud

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Figure 6.4.9:
**Viewpoint Bryher 9:
South of Great Popplestone**

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 Approximate extent of completed development

Images for landscape visual assessment

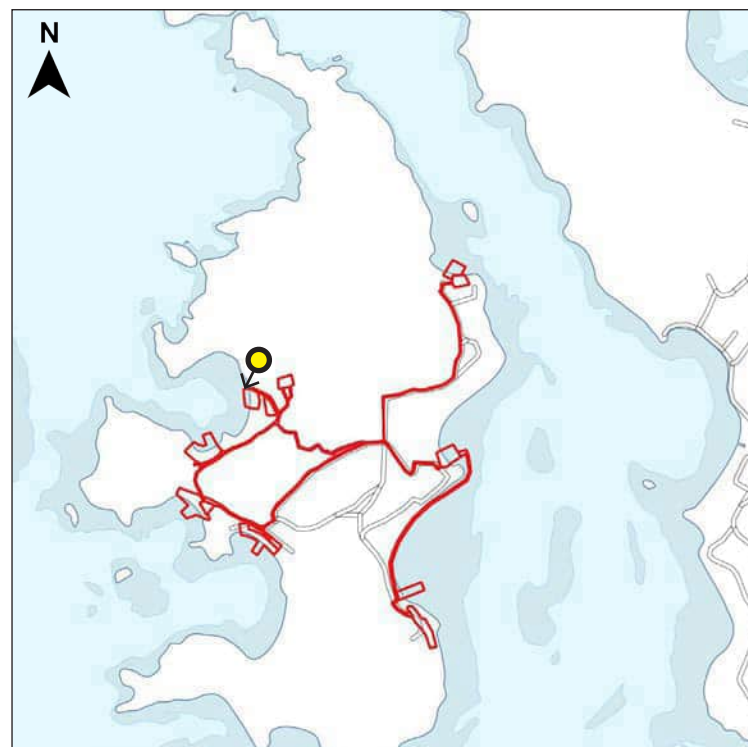
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Viewpoint location plan

 Proposed development location

 Viewpoint location



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Viewpoint description

Dramatic expansive view of the bay, the eye being drawn to the open sea framed by headlands and rocky islets. Closer to, the beach forms an attractive sweeping band which also encompasses the viewer. A scattering of small to medium sized rocks of grey (Cornish) granite and natural pebbles are significant in the foreground of the view. The works and the completed construction for this part of the site would be fully visible.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Removal of existing scattered rock and recharging with sand won from adjacent dune. The majority of the Cornish granite will be removed entirely for reuse in other locations on Bryher forming part of the proposals; some will be visible in the mid-distance of this view forming part of the emplacement at the southern end of the beach. However, this is unlikely to result in a noticeable change to that part of the view.

OS Grid Reference: SV 87511 15133
Distance to site: 0.00 km
Camera direction: S
Viewpoint elevation: 8m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: semi-overcast, broken cloud

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Figure 6.4.10:
**Viewpoint Bryher 10:
East of Great Popplestone**

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 Approximate extent of completed development

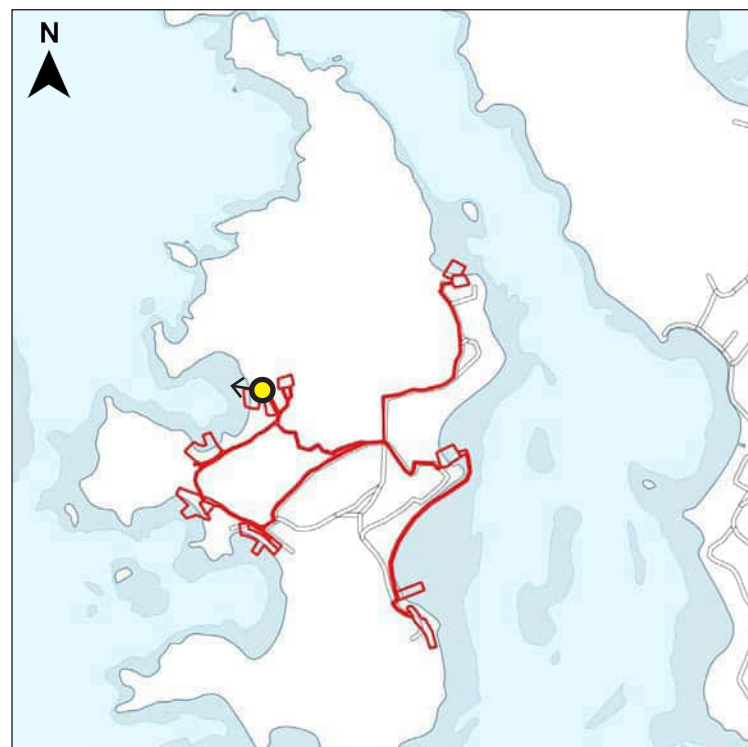
Images for landscape visual assessment

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Viewpoint location plan

 Proposed development location  Viewpoint location



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Viewpoint description

Unremarkable view of bracken and bramble covered dunescape, backed by Shipman Head Down in middle distance. Area proposed for clearance and sand extraction would be fully visible, as would construction, clearance and haulage.

Visible changes from this location

Excavations and construction vehicle movements. New areas of exposed sand and gravels replacing blanket bracken and bramble, subsequently revegetating.

OS Grid Reference: SV 87579 15051
Distance to site: 0.08 km
Camera direction: W
Viewpoint elevation: 4m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: semi-overcast, broken cloud

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Figure 6.4.11:
**Viewpoint Bryher 11
Track East of Great Popplestone**

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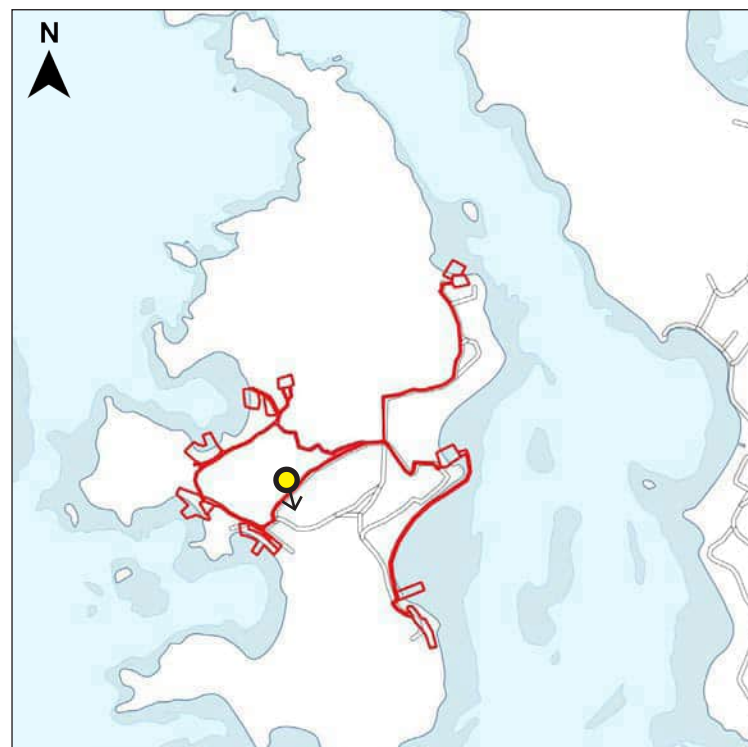




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Intricate and pleasant streetscape comprising a narrow residential road passing between attractive individual houses, domestic outbuildings and ornamental garden vegetation. Terminated by trimmed hedgerows, mature exotic planting and sloping hillside. Haulage only would be visible from this location.

Visible changes from this location

Construction vehicle movements during part of the construction phase. This is likely to include the Great Porth sites (North and South), as well as Stinking Porth and Great Popplestone.

OS Grid Reference: SV 87564 14767
 Distance to site: 0.00 km
 Camera direction: S
 Viewpoint elevation: 6m AOD
 Camera model: Nikon D7000
 Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: overcast but bright

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Figure 6.4.12:
**Viewpoint Bryher 12:
 New Road above Hell Bay Hotel**

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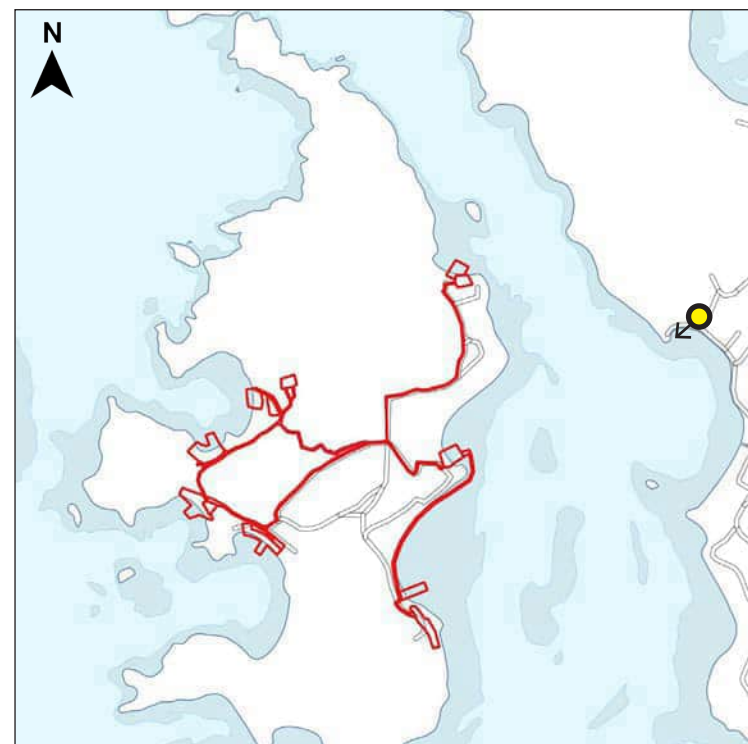
Landing and Haulage Only



Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Attractive sheltered seascape comprising sound between Bryher and Tresco, foreground and distant shore. Near distance includes sea-wall and at the time of visit, stored construction materials. Middle distance occupied by harbour, associated buildings and low headlands, boats on water and islets. Distant shore includes striking outline of Bryher. Beaches on Bryher appear as a thin line in centre of view, albeit clearly.

Visible changes from this location

Distant view of landing and haulage of materials during construction.

OS Grid Reference: SV 88860 15273
Distance to site: 0.75 km
Camera direction: SW
Viewpoint elevation: 10m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair, broken cloud

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Figure 6.4.13:
**Viewpoint Bryher 13:
Opposite New Grimsby Quay, Tresco**

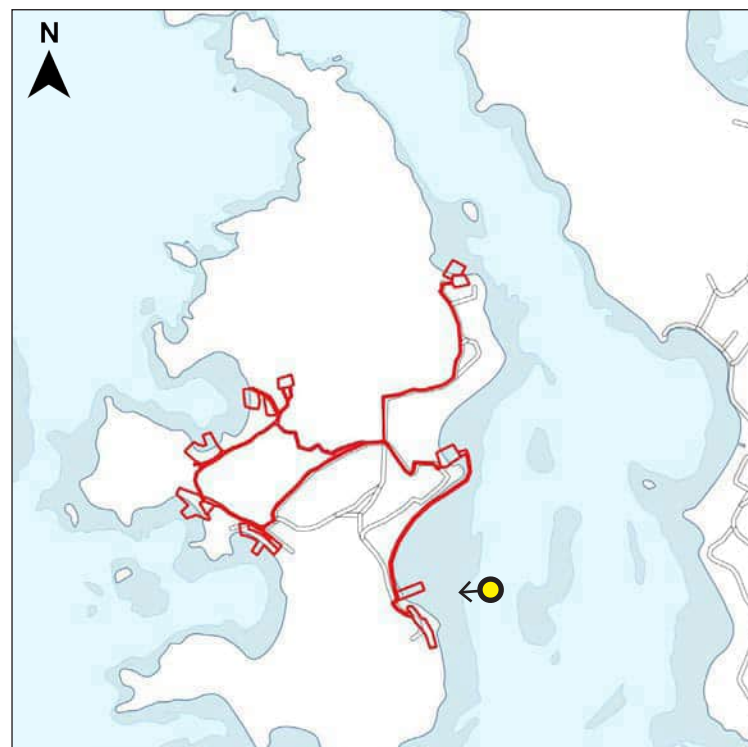
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Viewpoint location plan

 Proposed development location  Viewpoint location



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Viewpoint description

View experienced by boat passengers on the approach to Bryher from St. Mary's. A pleasant, clear view of the shoreline, including low heathland hillside, isolated dwelling and rocky foreshore. Clearance and construction for the Green Bay works would be visible, as would the completed installation. Due to the movement of the boat it was not feasible to apply the normal photographic techniques and standards in preparing this viewpoint.

Visible changes from this location

Clearance, temporary on-site storage of bulk materials and vehicle movements along a short stretch of the shoreline. Growth of planted and re-emergent vegetation will quickly obscure the resulting installation.

OS Grid Reference: SV 88180 14444
Distance to site: 0.02 km
Camera direction: W
Viewpoint elevation: 1m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 54.4°
Height of Camera above ground: N/A
Weather Conditions: fair, almost clear sky

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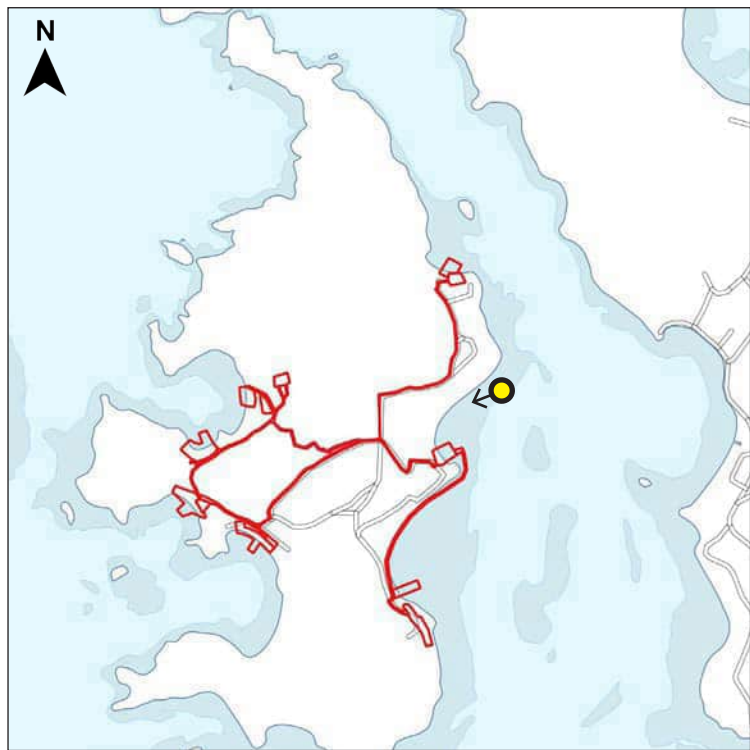
Figure 6.4.14:
**Viewpoint Bryher 14:
From Water
Passing Green Bay**

Landing and Haulage Only



Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

View experienced by passengers about to land on or leaving Bryher. Pleasant view of sandy, articulated foreshore backed by low lying ground with tall vegetation and individual dwellings. Mooring buoys in the foreground are likely to be occupied by boats during the summer season. The quay in the middle distance is also prominent, and the tower of All Saints church can be made out amongst the trees.

Visible changes from this location

Landing and haulage of materials during construction.

OS Grid Reference: SV 88204 15007
 Distance to site: 0.02 km
 Camera direction: W
 Viewpoint elevation: 1m AOD
 Camera model: Nikon D7000
 Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 54.4°
 Height of Camera above ground: N/A
 Weather Conditions: fair, almost clear sky

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Figure 6.4.15:
**Viewpoint Bryher 15:
 From Water
 on Approach to Church Quay**

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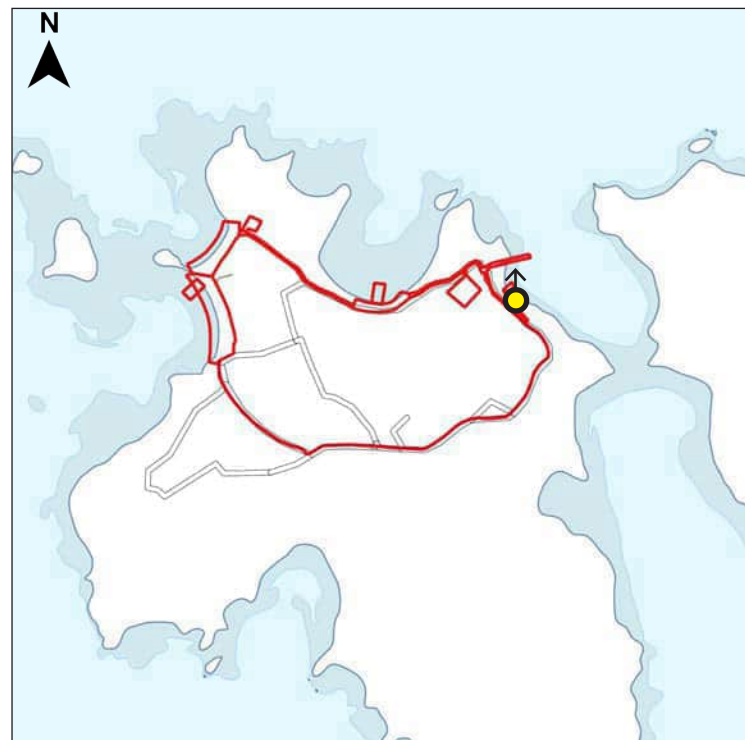




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Dramatic, attractive view across Porth Conger bay towards northern Gugh, open sea and more distant Scillonian islands. Framed by vegetation and in places incorporating built structures including the Turk’s Head beer garden platform, the quay and associated toilet block. Walkers also pass a compound of stored building materials. Haulage routes only would be visible from this location.

Visible changes from this location

Haulage during construction would be visible, including loading from the quay and across the beach directly in front of the Turk’s Head beer garden area.

OS Grid Reference: SV 88387 08469
Distance to site: 0.08 km
Camera direction: N
Viewpoint elevation: 13m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.16:
**Viewpoint St. Agnes 1:
Turk’s Head Beer Garden**

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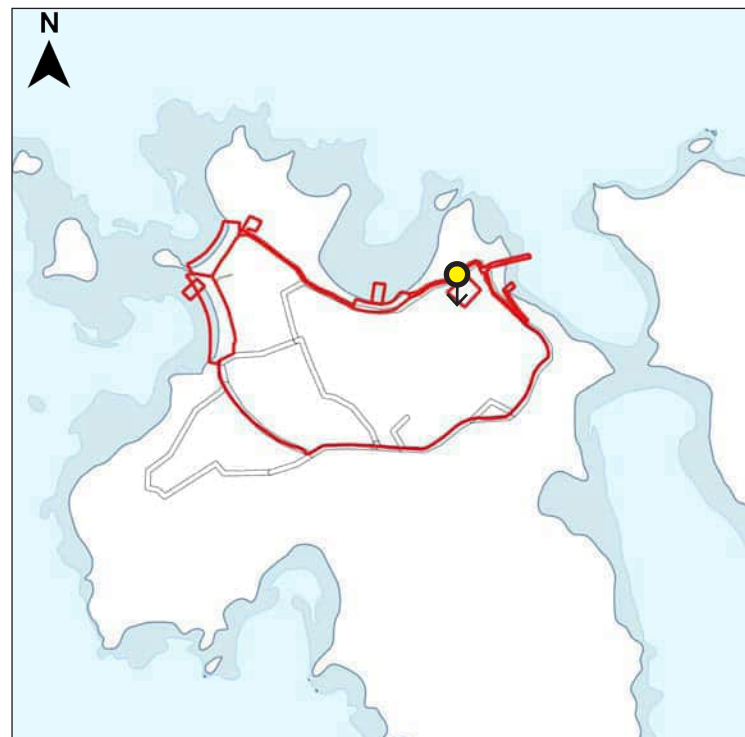
Site compound Only



Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Pleasant, open view towards gently sloping hillside terminated by tall vegetation and crest of hill. Bulk of view comprised of fields with hedgerows. St. Agnes' lighthouse forms a striking focal point to the right. View is framed by tall shrubs on left. Storage compound and haulage only would be visible; bare areas pending reinstatement upon completion of works.

Visible changes from this location

Storage of materials and equipment adjacent to track, pending reinstatement on completion. Use of track as a construction haulage route.

OS Grid Reference: SV 88289 08544
Distance to site: 0.00 km
Camera direction: S
Viewpoint elevation: 13m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.17:
**Viewpoint St. Agnes 2:
Compound Field West of Quay**

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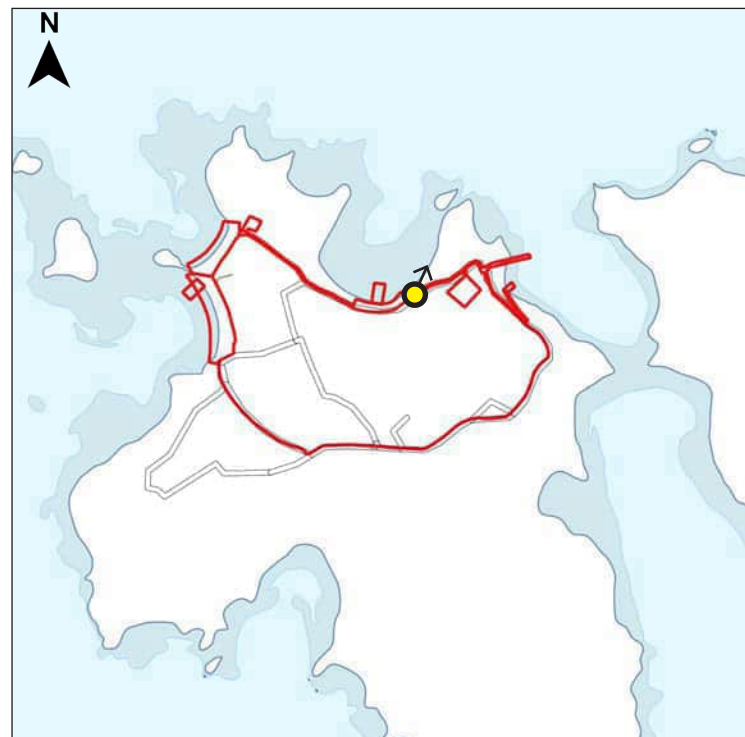




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Quickly evolving, constrained but interesting view framed by tall evergreen shrubs adjacent to viewer. The viewpoint is selected because the vegetation frames a clear view towards part of the area which would be affected by the proposals, drawing the eye into this area. However, the proposals themselves would occur below the normal line of sight of most viewers; hence, this viewpoint is taken at a downward angle to take in the area likely to be affected. Construction works and the completed installation would be visible.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials, vehicle movements and vehicles using haulage and access routes. Localised extension of area of emplaced rock. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 88172 08494
 Distance to site: 0.00 km
 Camera direction: NE
 Viewpoint elevation: 13m AOD
 Camera model: Nikon D7000
 Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: fair with broken cloud

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Figure 6.4.18:
**Viewpoint St. Agnes 3:
Porth Killier (looking north-east)**

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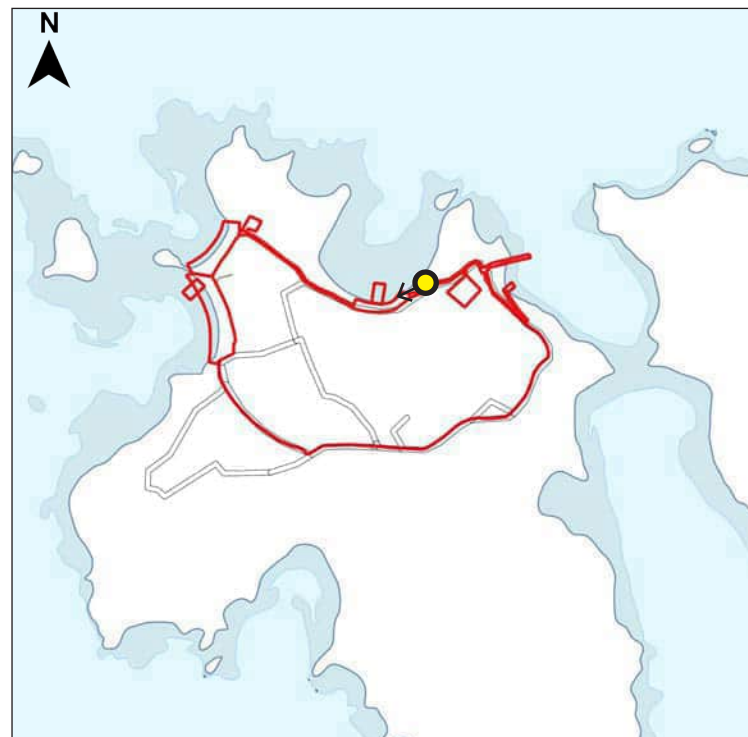




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Quickly evolving, constrained but interesting view framed by tall evergreen shrubs adjacent to viewer. Surfaced path and rear of concrete sea-wall are prominent in centre of view; however, eye is drawn to rocky shore and curving bay beyond. The Porth Killier site would be fully visible, including construction, any clearance, haulage and the completed works.

Visible changes from this location

Construction activities including any temporary on-site storage, vehicle movements and vehicles using haulage and access routes. Raised area of emplaced rock over approx. 100m, appearing similar in character to existing rocky foreshore. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 88151 08478
Distance to site: 0.00 km
Camera direction: W
Viewpoint elevation: 1m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.19:
**Viewpoint St. Agnes 4:
Porth Killier (looking south-west)**

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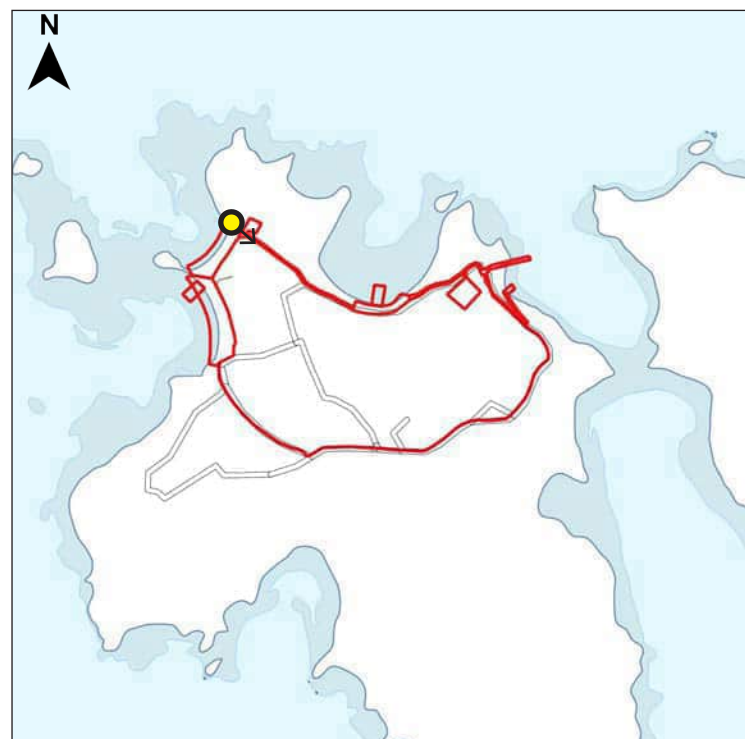
Proposed construction materials storage area



Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Pleasant, if undistinguished and curtailed view to tall shrubs and rough ground. Panning left, view is curtailed by rear of dune. To further right out of the panorama, Big Pool and associated marshland are visible, beyond which is the low rise of the centre of the island, with the lighthouse as its focal point.

Visible changes from this location

Haulage and storage of bulk materials during construction.

OS Grid Reference: SV 87802 08632
Distance to site: 0.00 km
Camera direction: SE
Viewpoint elevation: 3m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.20:
**Viewpoint St. Agnes 5:
Porth Coose (looking north)**

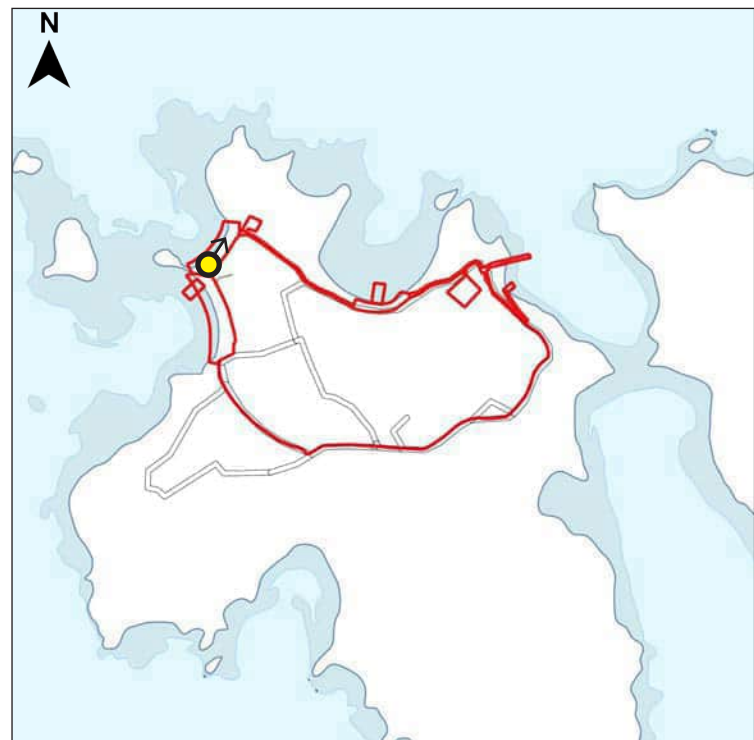
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Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

Panoramic, open view taking in the bay and open sea beyond, the sweeping curve of the cobble embankment, rocky islets and low headlands, the bowl of land below the embankment including Big Pool and higher ground inland. Visually interesting contrast of colours and textures between the landward and seaward elements. Construction, haulage and the finished installation would all be clearly visible.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Raised height of embankment by approx. 1.2m creating a line of artificially emplaced rock bound within visible webbing. Visible edge may seem slightly at odds with natural form and undulations of surrounding landscape in the view.

OS Grid Reference: SV 87711 08552
Distance to site: 0.00 km
Camera direction: NE
Viewpoint elevation: 1m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.21:
**Viewpoint St. Agnes 6:
Porth Coose from Dune**

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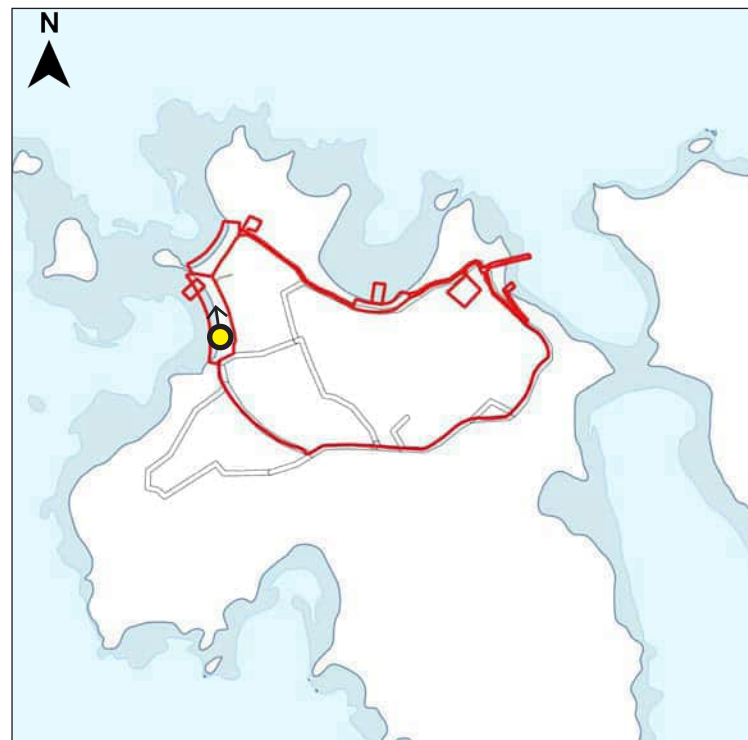




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Panoramic, open view taking in the bay and open sea beyond, the sweeping curve of the dune, rocky islets and low headlands and the bowl of land below the dune including Big Pool. Visually interesting contrast of colours and textures between the landward and seaward elements. Artificial rock revetment connecting mainland to outlying rocky outcrop and islets are interesting focal points in the view. Construction, haulage and the finished installation would all be clearly visible from this location.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Removal from view of degraded erosion control fabrics currently visible at dune surface. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87754 08391
Distance to site: 0.00 km
Camera direction: N
Viewpoint elevation: 1m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.22:
**Viewpoint St. Agnes 7:
Periglis from Dune**

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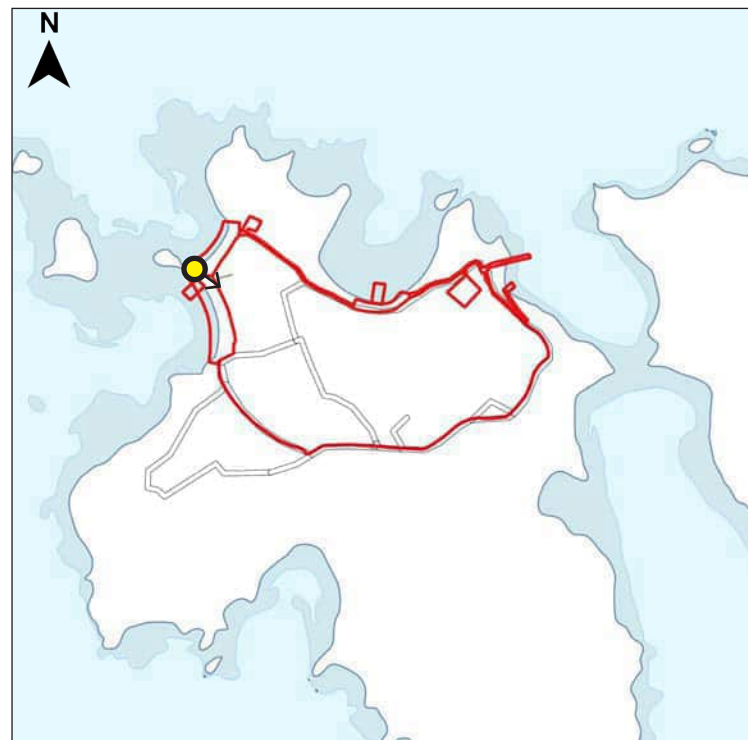




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

View along beach-side of the dune looking south towards Middle Town and the St. Agnes lighthouse, which forms an appealing visual focus left of centre. St. Agnes' Church tower is a secondary focal point to the right. Sweeping parallel lines of dune vegetation, large pebbles and seaweed forms an interesting array of textures and colours. Existing degraded erosion protection fabric detracts significantly from the quality of the view. Construction, haulage and the finished installation would all be clearly visible from this location.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Removal from view of degraded erosion control fabrics currently visible at dune surface. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87693 08533
 Distance to site: 0.00 km
 Camera direction: SE
 Viewpoint elevation: 0m AOD
 Camera model: Nikon D7000
 Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: fair with broken cloud

BLOOM –
Off islands of Isles of Scilly
EIA - Landscape Viewpoints
Project: 2021s1204

Figure 6.4.23:
**Viewpoint St. Agnes 8:
Periglis Beach from North End**

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Saltaire, Shipley
BD18 3LF
Tel. (01274) 714269
Fax (01274) 714272
www.jbaconsulting.com

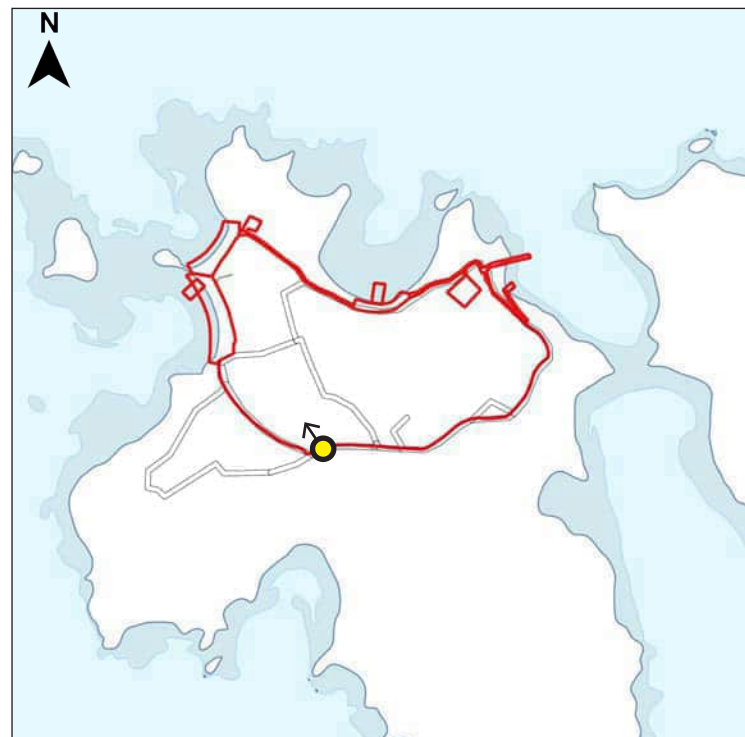




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Small-scale, pleasant streetscape comprising a narrow residential road passing between vegetated garden boundaries, paddocks and interesting individual buildings. Open space draws the eye in the direction of the site in the middle distance and the sea beyond. Distant view of construction at Port Coose bay only; finished works not perceptible.

Visible changes from this location

Medium-distant restricted views of construction activities.

OS Grid Reference: SV 87978 08158
 Distance to site: 0.30 km
 Camera direction: NW
 Viewpoint elevation: 13m AOD
 Camera model: Nikon D7000
 Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: fair with broken cloud

BLOOM –
Off islands of Isles of Scilly
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Project: 2021s1204

Figure 6.4.24:
**Viewpoint St. Agnes 9:
New Road, Middle Town**

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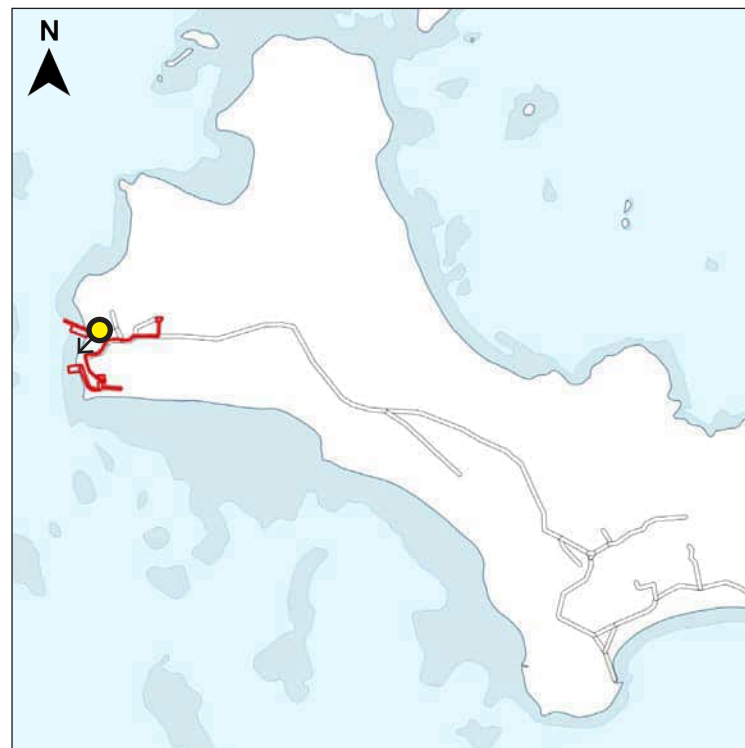




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Partially constrained, attractive view along lanes, framed by gardenesque vegetation and stone walls, opening out in the middle distance to an intriguing seascape of sheltered waters and small, low-lying islands. Haulage only would be visible from this location.

Visible changes from this location

Haulage vehicles accessing quayside.

OS Grid Reference: SV 91496 16181
Distance to site: 0.00 km
Camera direction: SW
Viewpoint elevation: 11m AOD
Camera model: Nikon D7000
Date of Photography: 04/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: sun behind broken cloud

BLOOM –
Off islands of Isles of Scilly
EIA - Landscape Viewpoints
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Figure 6.4.25:
**Viewpoint St. Martin's 1:
Karma Hotel**

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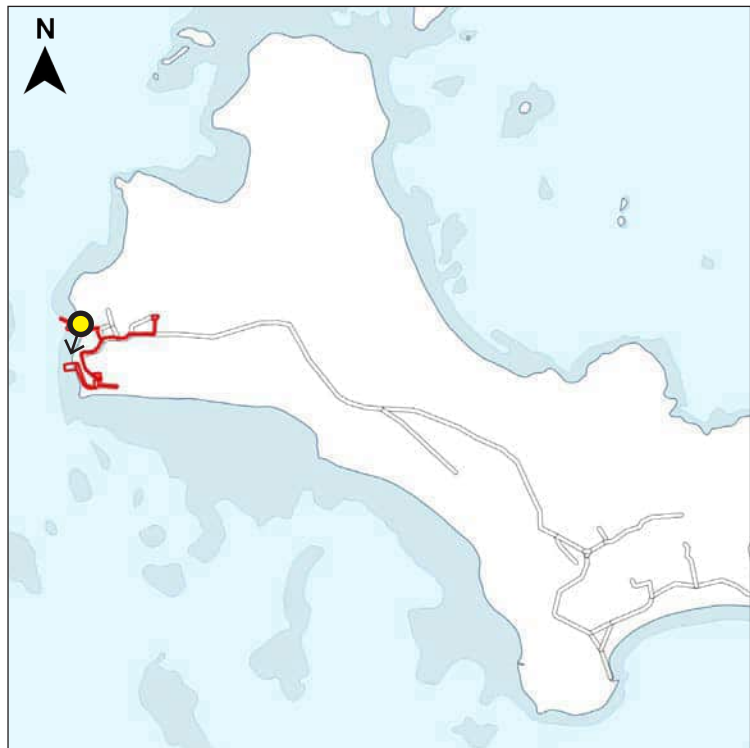


Haulage Only



Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

Attractive view of wide, white sandy beach and narrow quay, falling to a narrow area of water and low-lying islands. View framed to left by low rocky dunes and tall vegetation. Haulage using the quay only would be visible from this location.

Visible changes from this location

Haulage using quay clearly visible.

OS Grid Reference: SV 91455 16179
 Distance to site: 0.00 km
 Camera direction: S
 Viewpoint elevation: 11m AOD
 Camera model: Nikon D7000
 Date of Photography: 04/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: fair, broken cloud

BLOOM –
 Off islands of Isles of Scilly
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 Project: 2021s1204

Figure 6.4.26:
**Viewpoint St. Martin’s 2:
 Quay below Karma Hotel**

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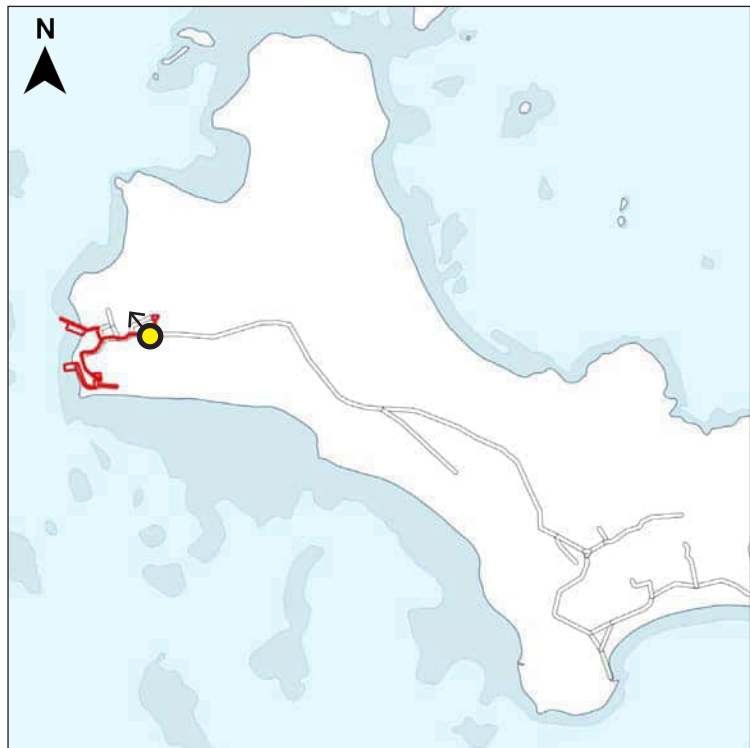


Site compound Only



Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

Attractive, near-distance views of houses, gardens and the lane threading between. Views to one side are terminated by tall garden hedgerow; to the other the line of sight is drawn upwards along sloping gardens towards houses at the next level. Haulage route and building materials compound only would be visible from this location.

Visible changes from this location

Storage of materials and equipment in hedged compound adjacent to road and use of road as a construction haulage route.

OS Grid Reference: SV 91667 16161
 Distance to site: 0.00 km
 Camera direction: NW
 Viewpoint elevation: 6m AOD
 Camera model: Nikon D7000
 Date of Photography: 04/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: fair, broken cloud

BLOOM –
 Off islands of Isles of Scilly
 EIA - Landscape Viewpoints
 Project: 2021s1204

Figure 6.4.27:
**Viewpoint St. Martin's 3:
 Lower Town**



 Approximate extent of completed development

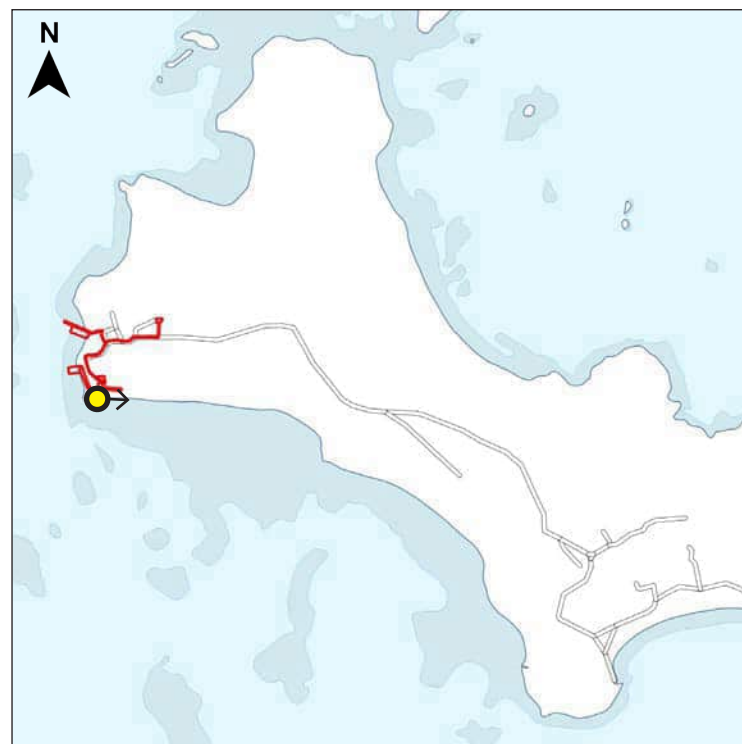
Images for landscape visual assessment

The images contained on this page are not representative of scale and distance from the actual viewpoint and show the proposed development in its wider landscape context only for landscape and visual assessment.



Viewpoint location plan

 Proposed development location  Viewpoint location



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Elevation Courtesy of OpenStreetMap © OpenStreetMap contributors

Viewpoint description

Stunning, expansive views across a wide stretch of sand, sloping down towards shallow intertidal area and backed by a high grass-covered dune. Rocks in foreground and distant headlands at the east of St. Martin's bookend the view. Construction and the completed works would be fully visible.

Visible changes from this location

Construction activities including any temporary on-site storage. Introduction of small area of aggregate surface at entrance to beach and approx. 67.5m of visually permeable timber fencing. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 91479 15997
Distance to site: 0.02 km
Camera direction: E
Viewpoint elevation: 0m AOD
Camera model: Nikon D7000
Date of Photography: 04/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair, broken cloud

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Figure 6.4.28:
**Viewpoint St. Martin's 4:
Neck of the Pool beach**

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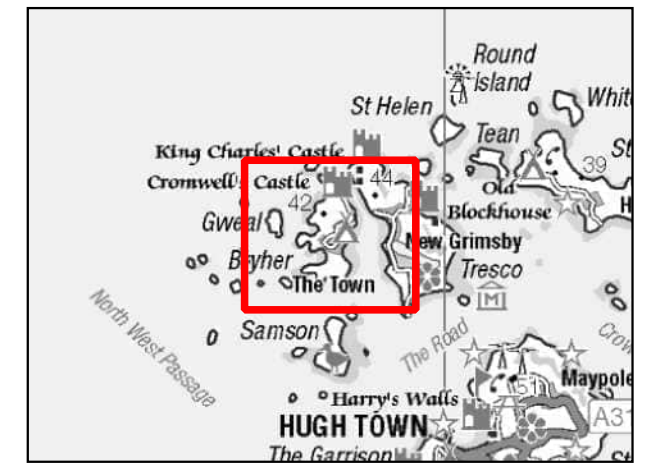


Appendix 7.1 – Historic Landscape Character Figures











1 Broughton Park
 Old Lane North
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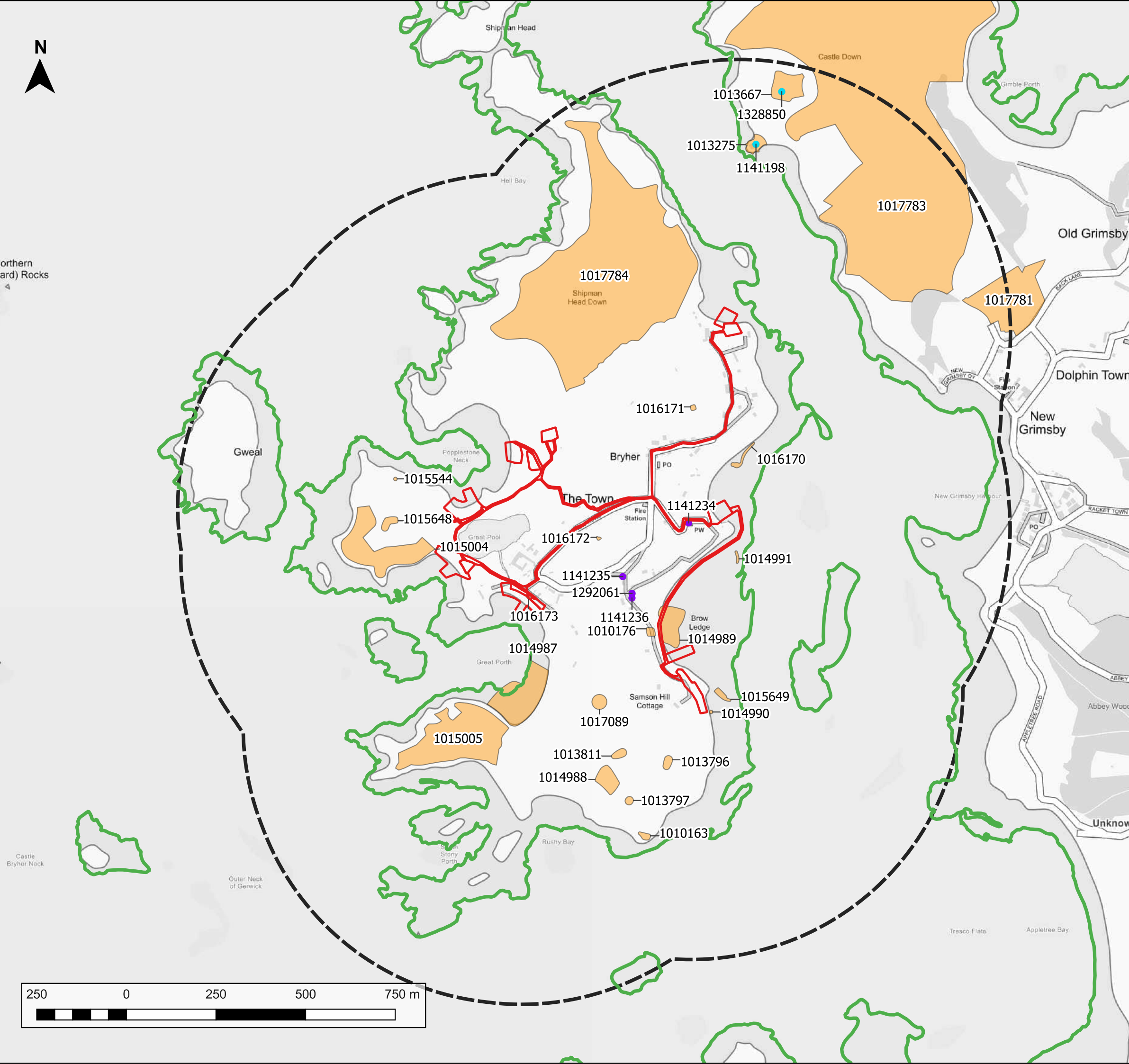
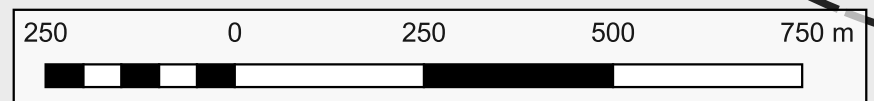
2021s1204: Isles of Scilly: Bryher

-  Bryher Red Line Boundary
-  750m Study Area
-  Conservation Area
- Listed Buildings
 -  II
 -  II*
-  Scheduled Monuments

Drawn By: KE **Date:** 21/09/2022 **Scale:**
Checked By: KH **Date:** 21/09/2022 1:10,000
Approved By: KH **Date:** 21/09/2022 Original at A3

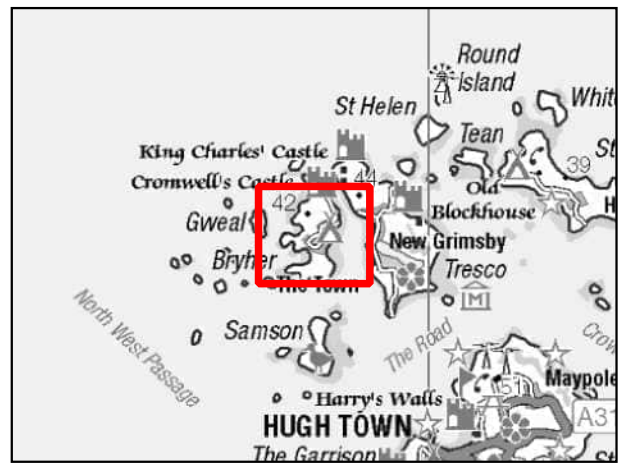
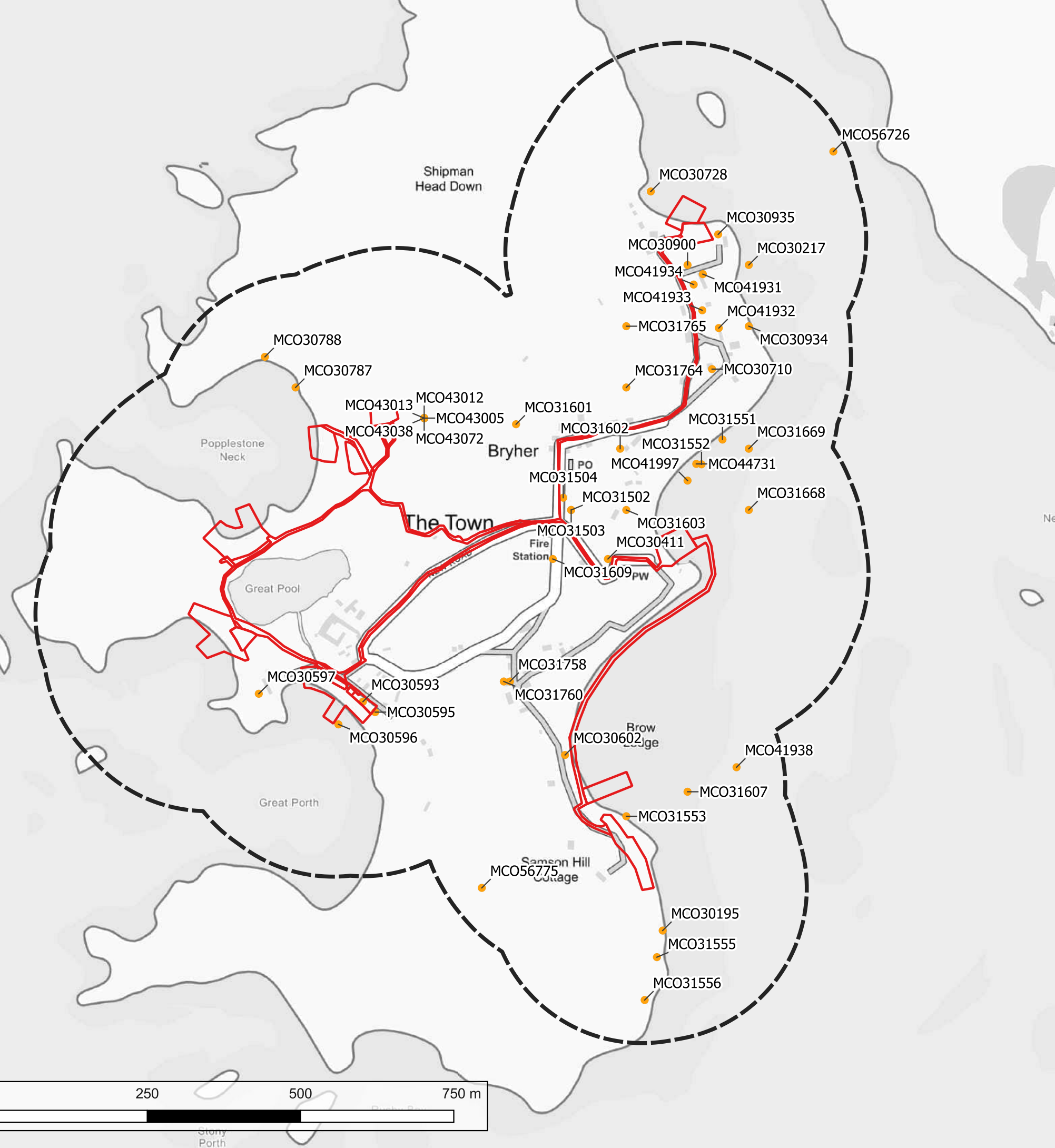
Figure Title: Figure 1: Designated Assets

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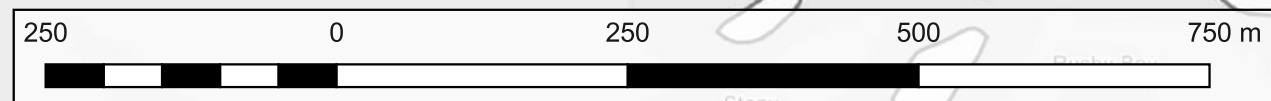


2021s1204: Isles of Scilly: Bryher

-  Red Line Boundary
-  250m Study Area
-  Non-Designated Assets

Drawn By: KE	Date: 21/09/2022	Scale:
Checked By: KH	Date: 21/09/2022	1:6,500
Approved By: KH	Date: 21/09/2022	Original at A3

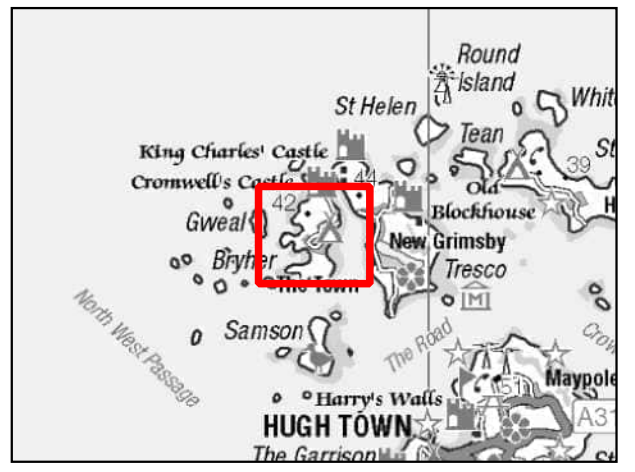
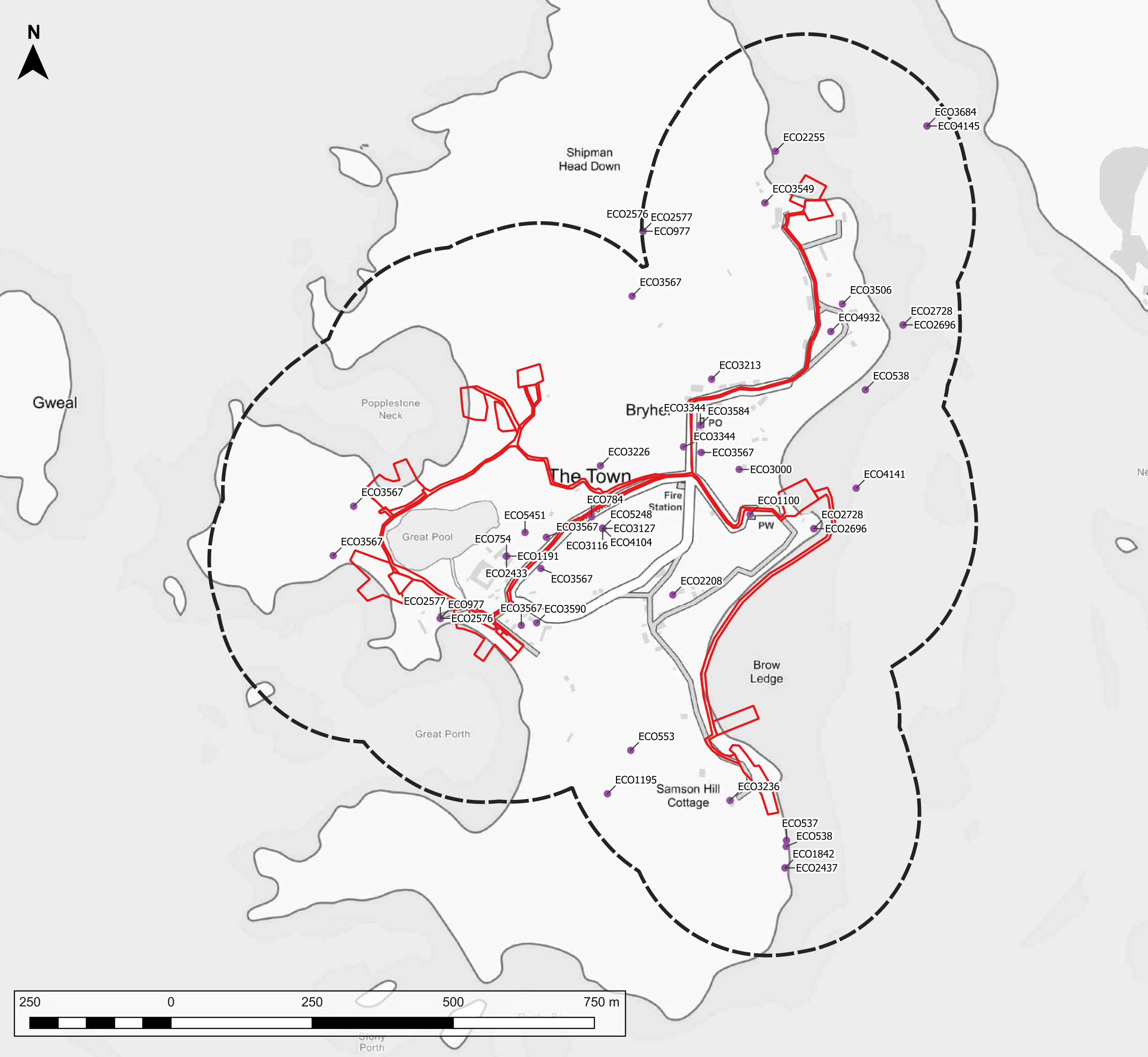
Figure Title: Figure 2: Non-designated Assets



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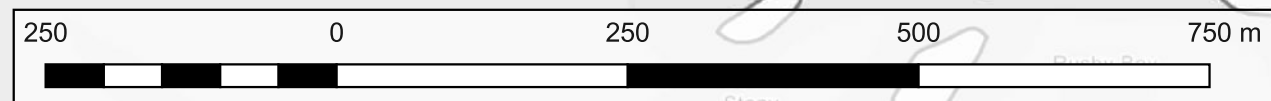


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2021s1204: Isles of Scilly: Bryher

- Red Line Boundary
- 250m Study Area
- Event Records



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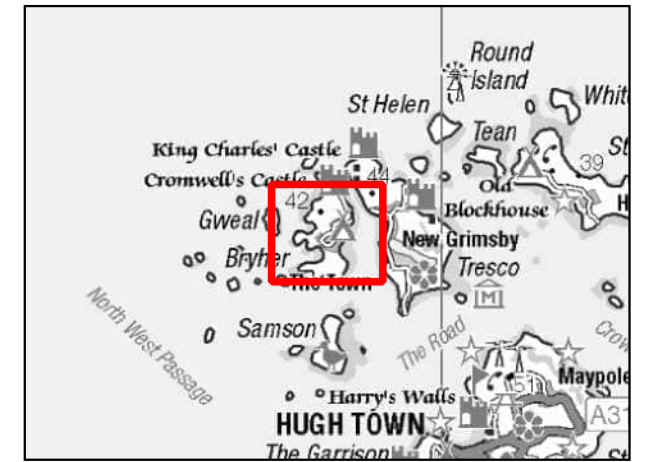
Figure Title: Figure 3: Events

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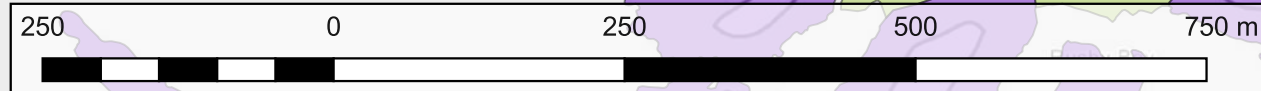
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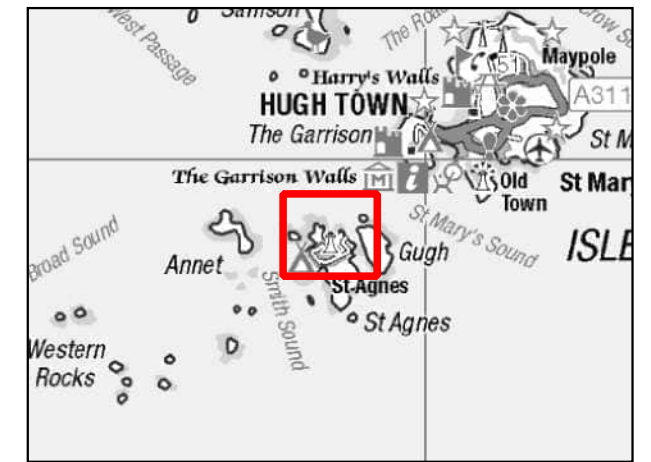
- Red Line Boundary
- 250m Study Area
- Communications
- Farmland: anciently enclosed land (prehistoric to early post-medieval)
- Farmland: bulb strips, late C19/C20
- Farmland: late post-medieval enclosures (C19)
- Farmland: modern enclosures (post 1908), excluding bulb strips
- Foreshore: rocky foreshore and offshore rocks
- Foreshore: sandy forshore (beach and intertidal flats)
- Rough Ground: blown sand/dunes
- Rough Ground: heathland
- Settlements
- Water: natural and artificial pools
- Woodland: conifers

Drawn By: KE	Date: 21/09/2022	Scale:
Checked By: KH	Date: 21/09/2022	1:6,500
Approved By: KH	Date: 21/09/2022	Original at A3

Figure Title: Figure 4: Historic Landscape Characterisation

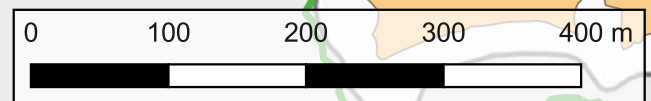
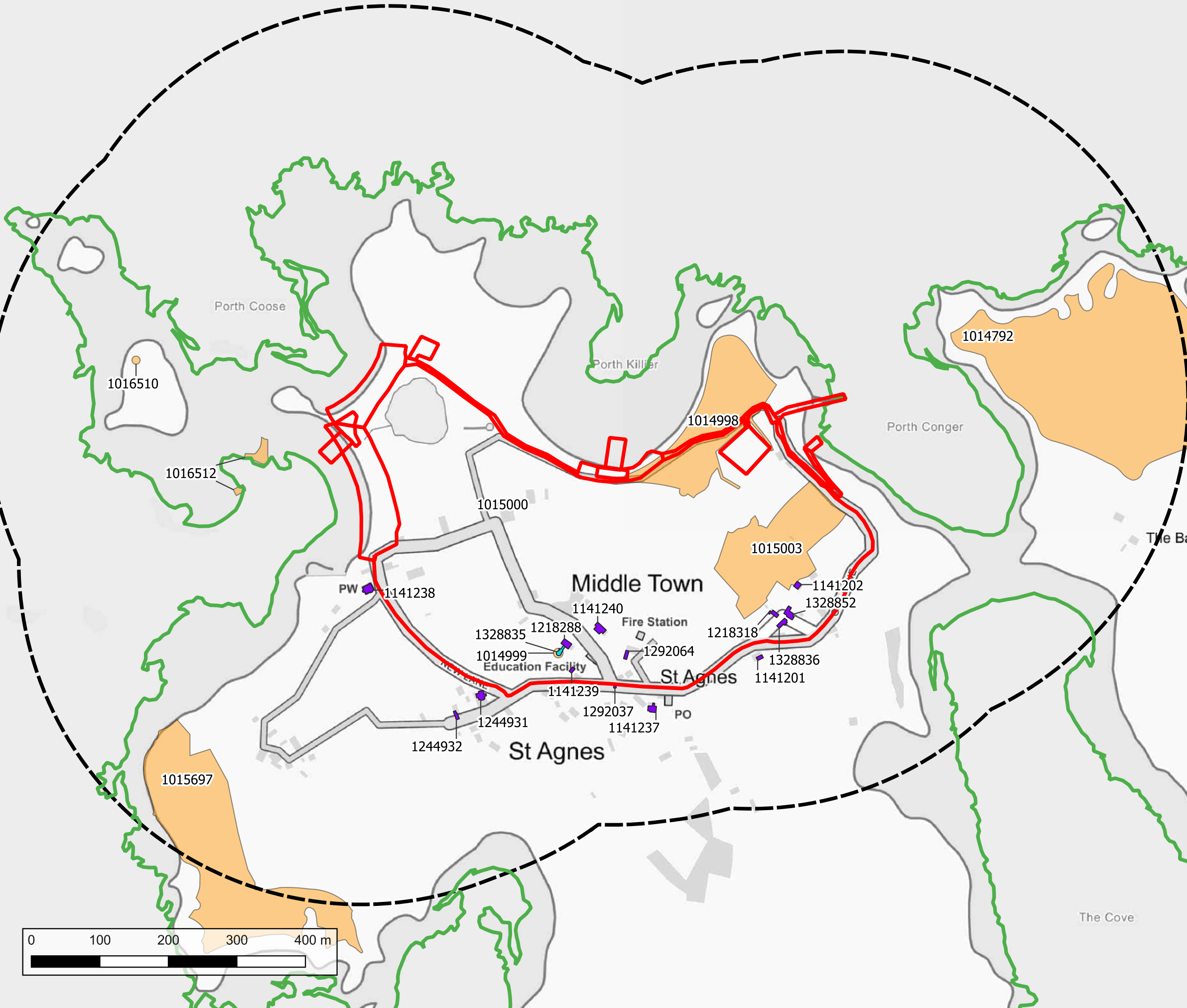
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2021s1204: Isles of Scilly: St Agnes

-  Red Line Boundary
-  500m Study Area
-  Grade II* Listed Buildings
-  Grade II Listed Buildings
-  Scheduled Monuments
-  Conservation Area



Drawn By: KE **Date:** 22/09/2022 **Scale:**
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Approved By: KH **Date:** 22/09/2022 Original at A3

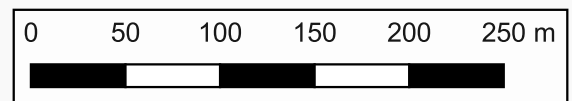
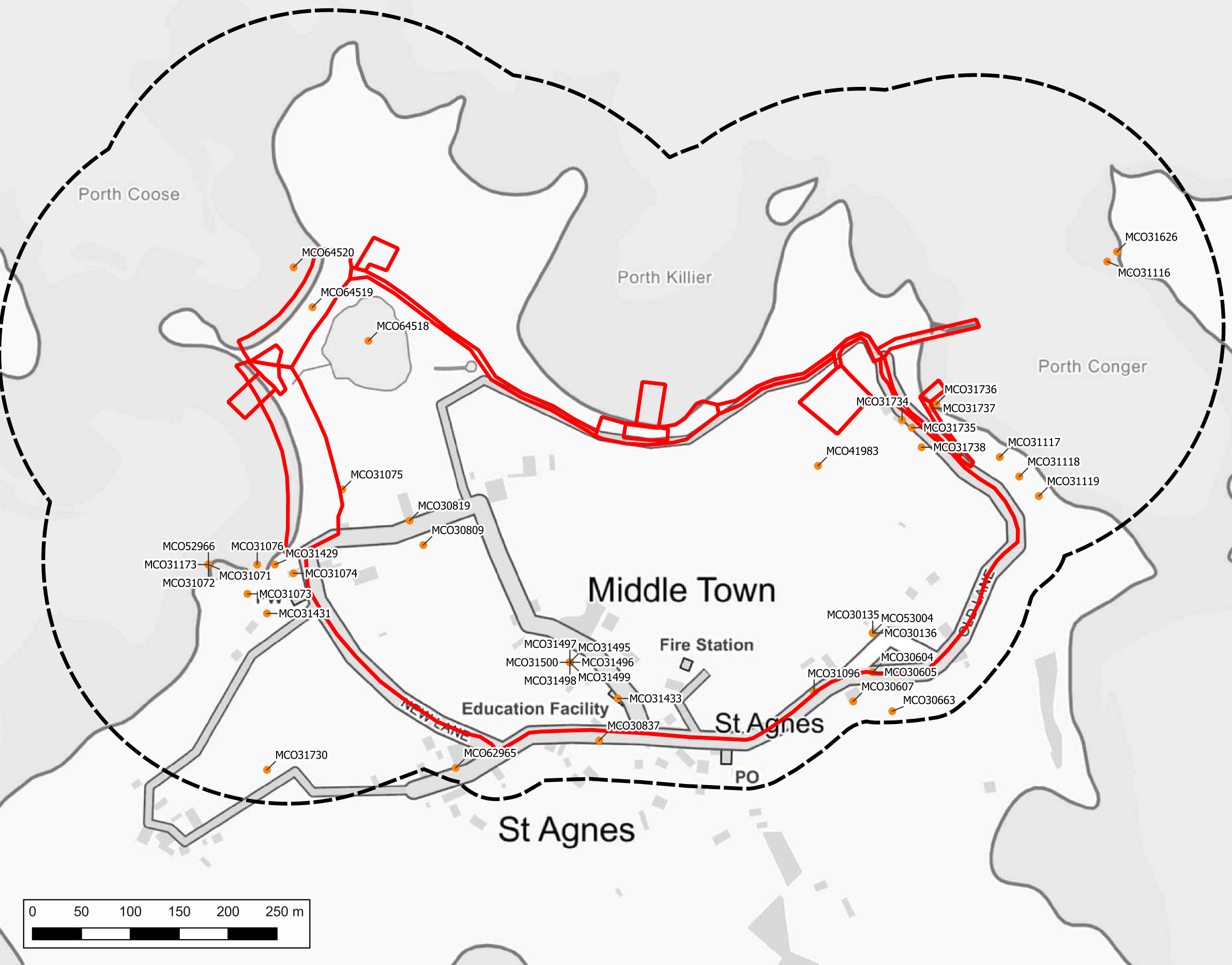
Figure Title: Figure 1: Designated Assets

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2021s1204: Isles of Scilly: St Agnes

- Red Line Boundary
- 250m Study Area
- Non-Designated Assets



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Approved By: KH	Date: 22/09/2022	Original at A3

Figure Title: Figure 2: Non-Designated Assets




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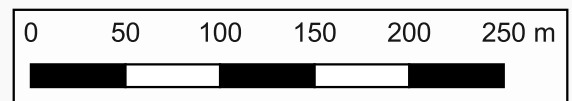
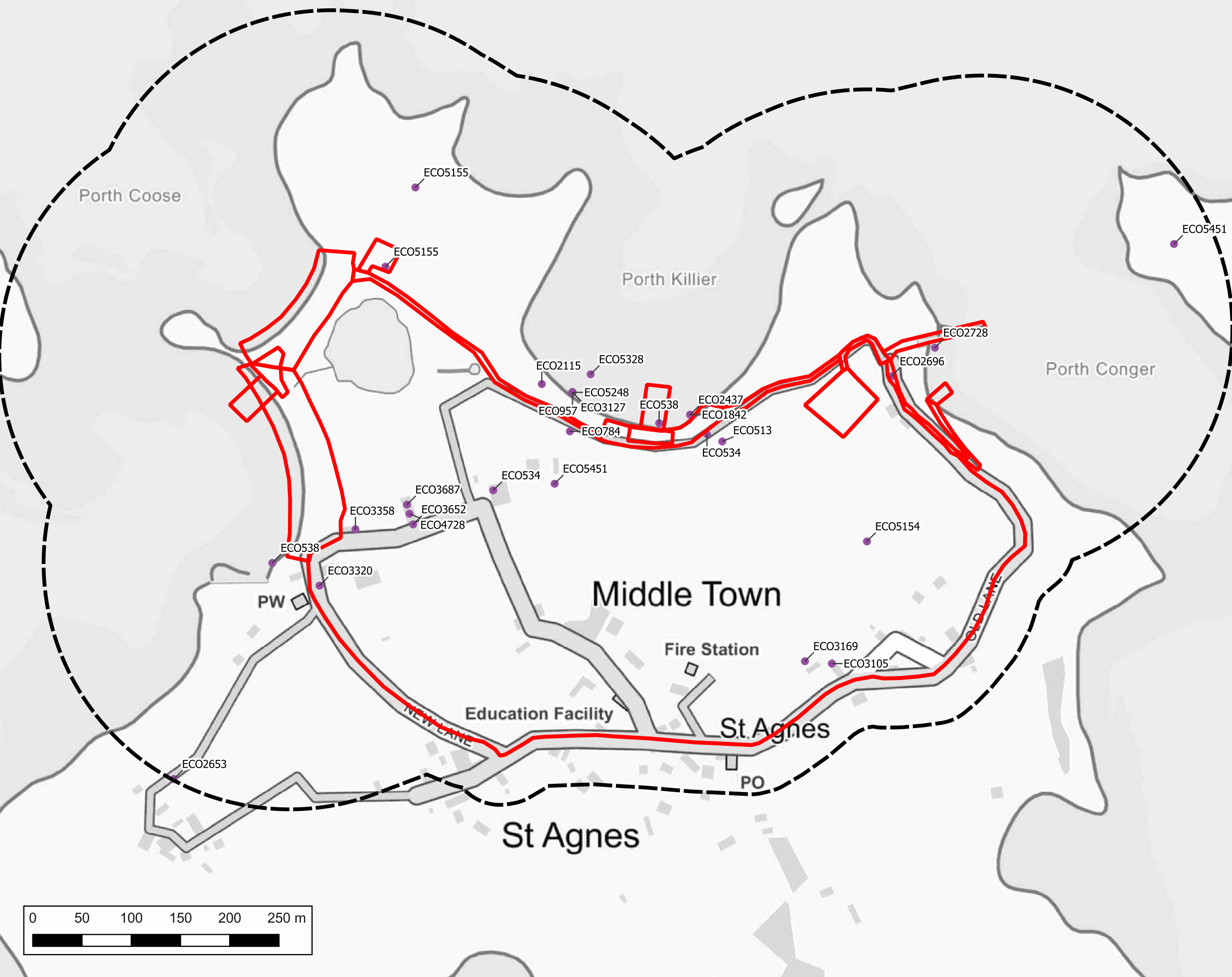


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2021s1204: Isles of Scilly: St Agnes

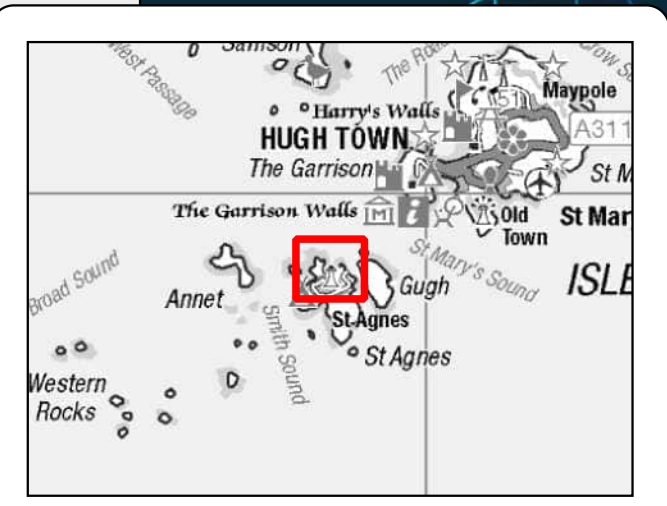
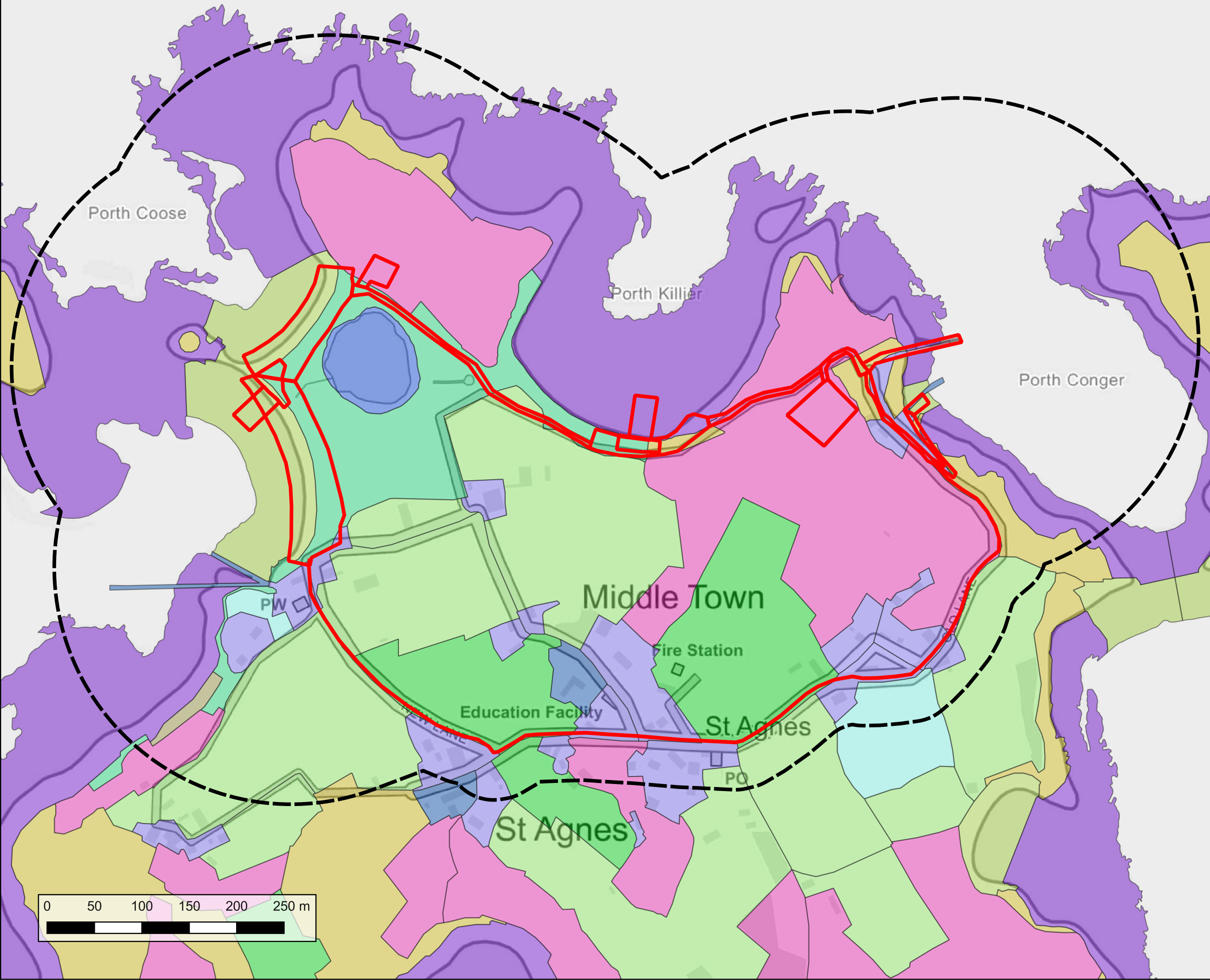
-  Red Line Boundary
-  250m Study Area
-  Events



Drawn By: KE	Date: 22/09/2022	Scale:
Checked By: KH	Date: 22/09/2022	1:4,000
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Figure Title: Figure 3: Events

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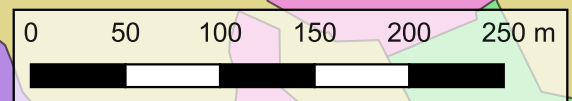


2021s1204: Isles of Scilly: St Agnes

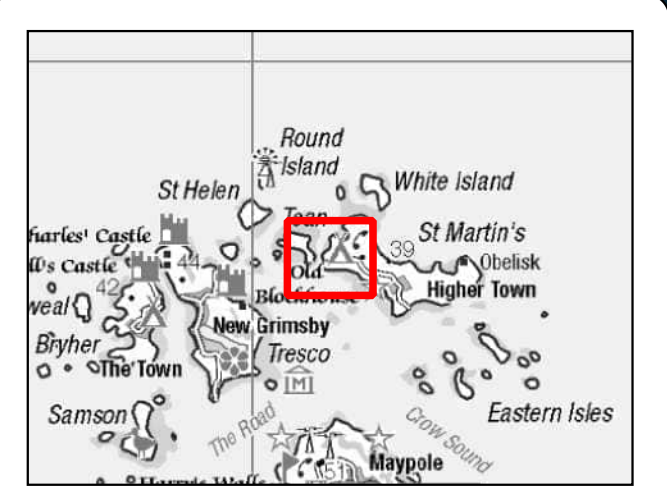
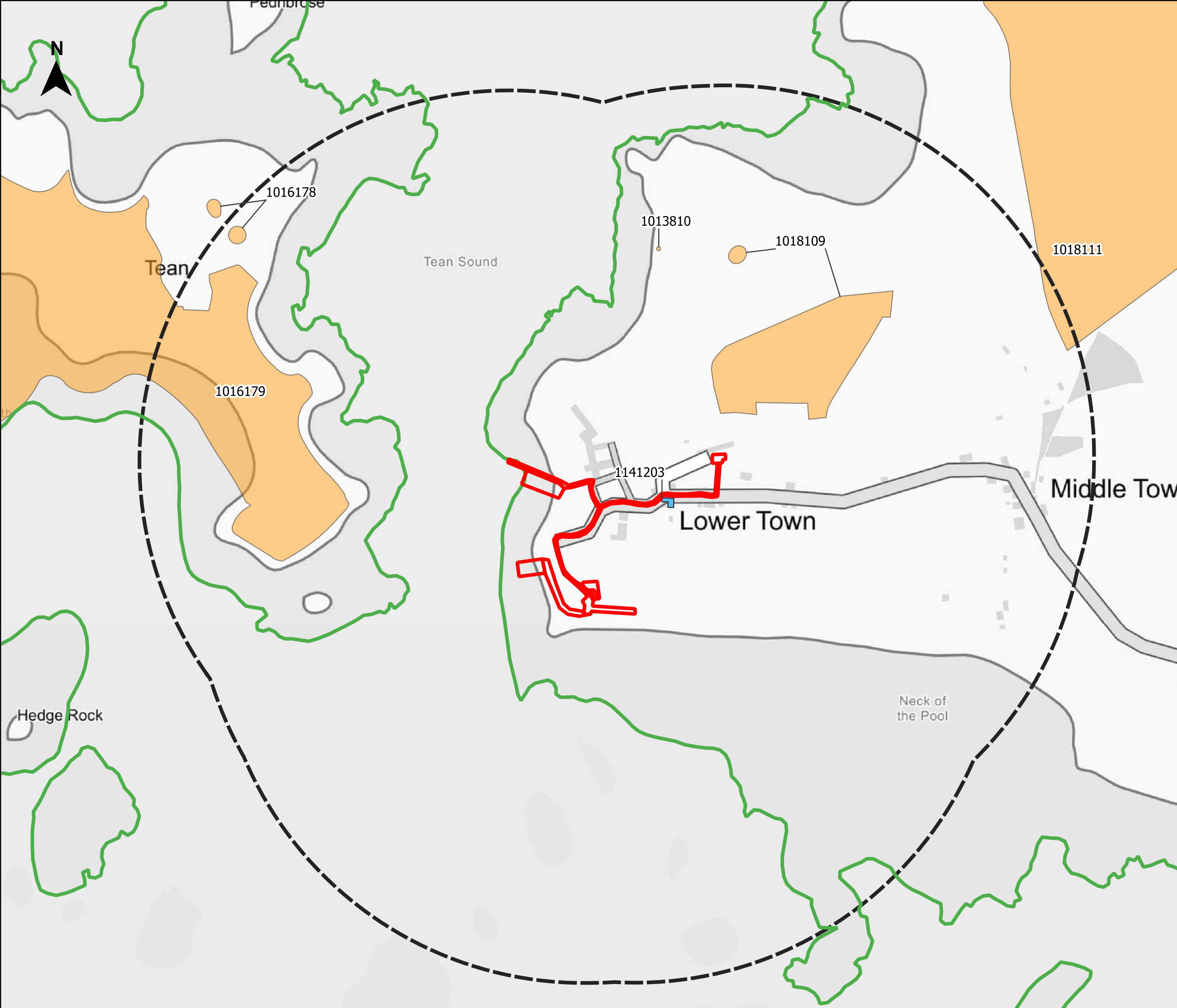
- Red Line Boundary
- 250m Study Area
- Communications
- Farmland: anciently enclosed land (prehistoric to early post-medieval)
- Farmland: bulb strips, late C19/C20
- Farmland: late post-medieval enclosures (C19)
- Farmland: modern enclosures (post 1908), excluding bulb strips
- Foreshore: rocky foreshore and offshore rocks
- Foreshore: sandy foreshore (beach and intertidal flats)
- Rough Ground: blown sand/dunes
- Rough Ground: heathland
- Settlements
- Water: natural and artificial pools
- Industrial: existing
- Maritime safety: existing and disused installations

Drawn By: KE **Date:** 22/09/2022 **Scale:**
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Approved By: KH **Date:** 22/09/2022 Original at A3

Figure Title: Figure 4: Historic Landscape Characterisation



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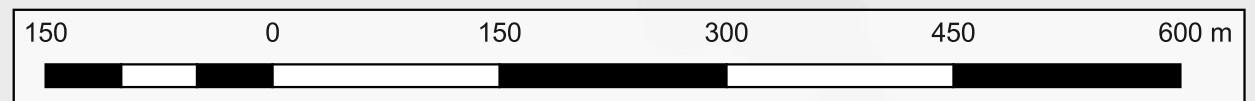


2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 500m study area
- Scheduled Monuments
- Conservation Areas
- Listed Buildings
- II

Drawn By: EP **Date:** 22/09/2022 **Scale:**
Checked By: KE **Date:** 22/09/2022 1:5,000
Approved By: PM **Date:** 22/09/2022 Original at A3

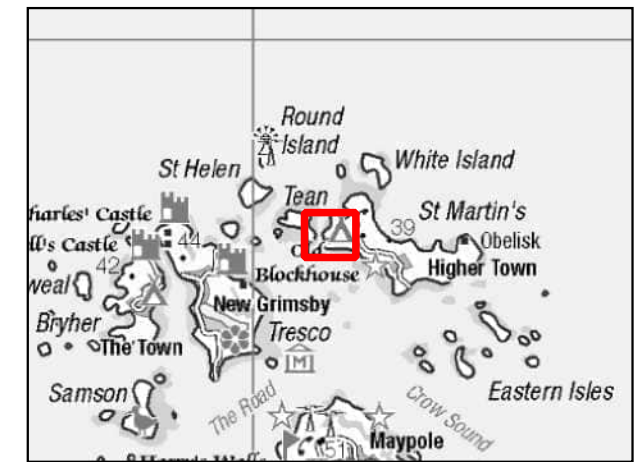
Figure Title: Figure 1: Designated Assets



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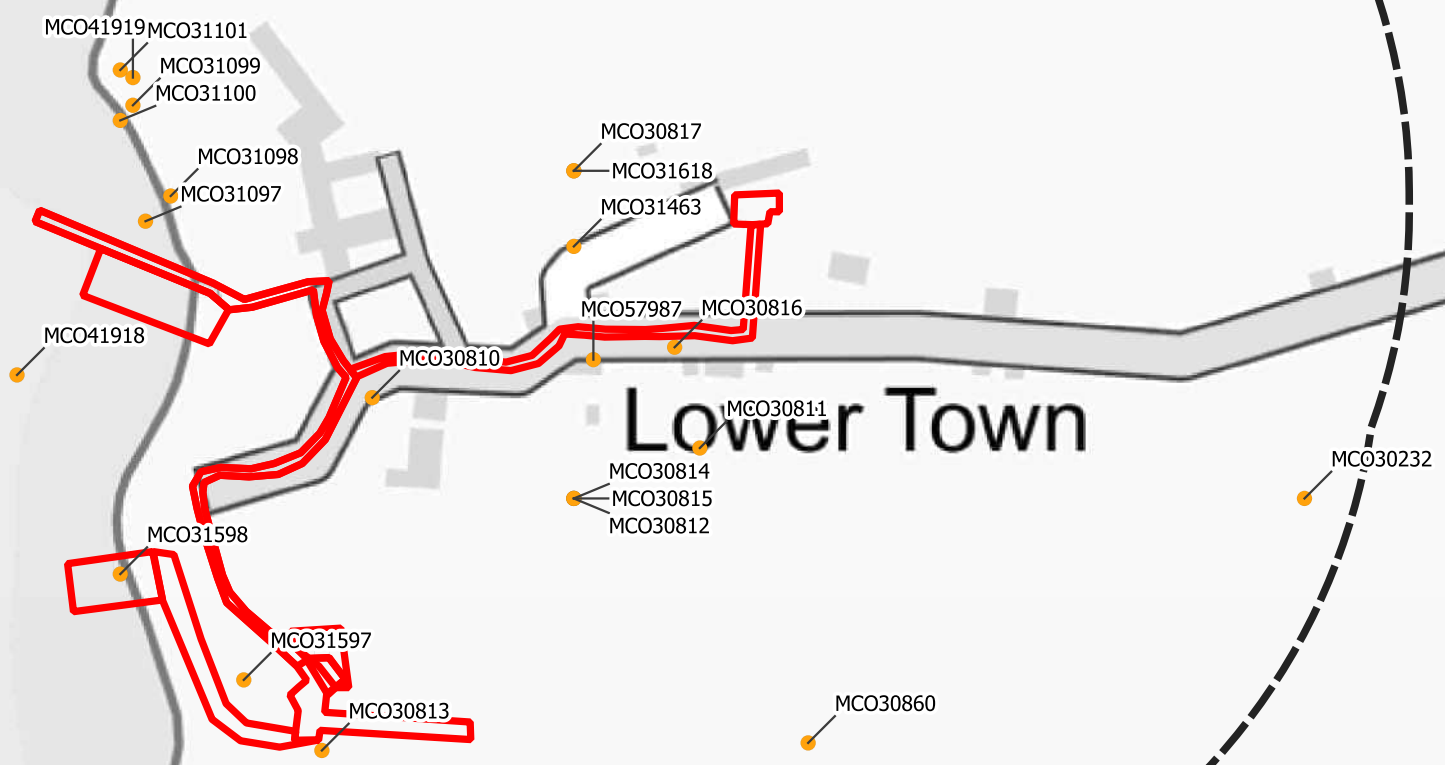


Tean Sound



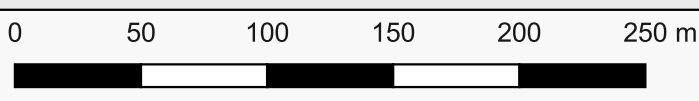
2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 250m Study Area
- Non-designated Assets



Lower Town

Neck of the Pool



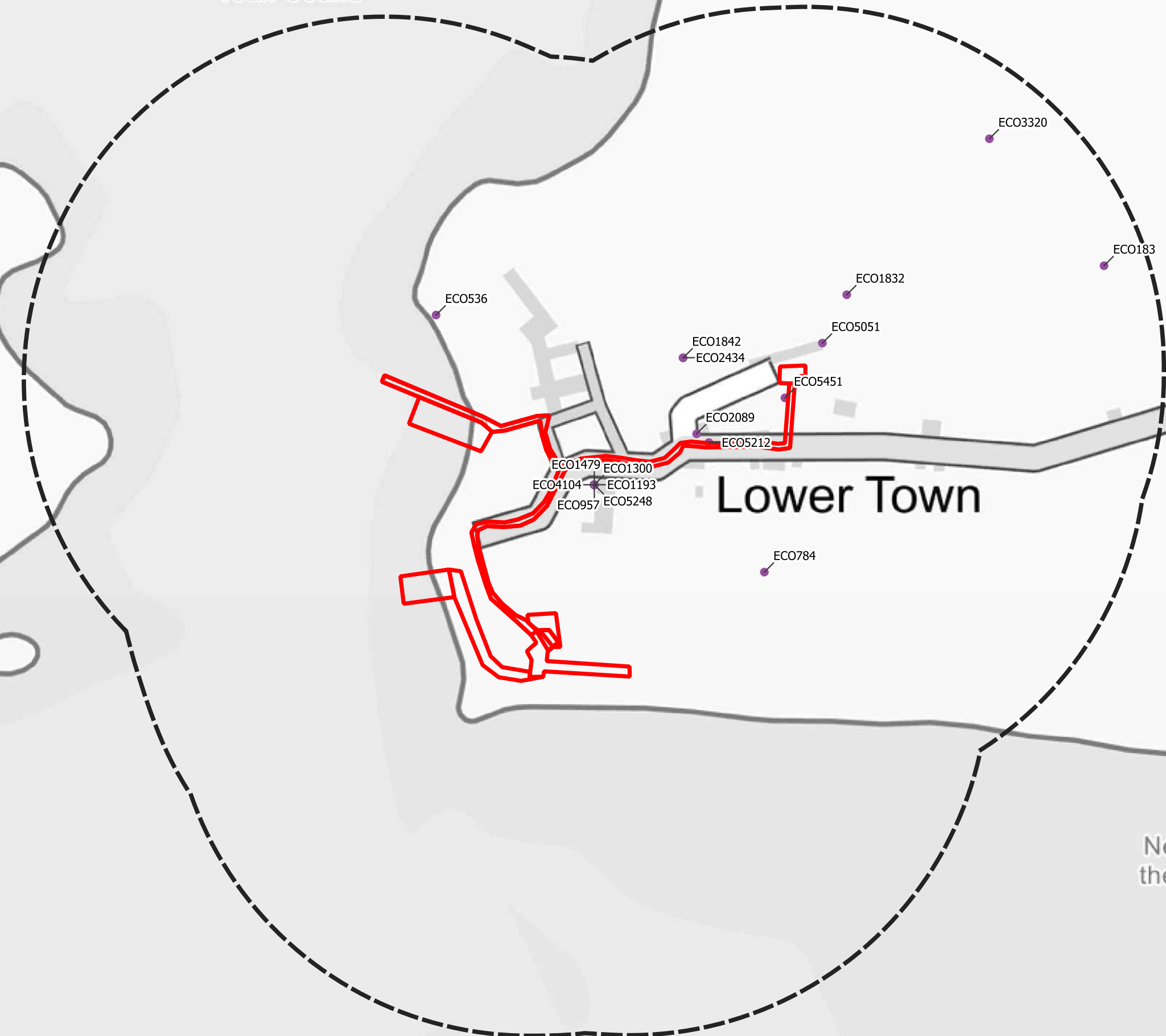
Drawn By: EP **Date:** 22/09/2022 **Scale:** 1:3,000
Checked By: KE **Date:** 22/09/2022 Original at A3
Approved By: PM **Date:** 22/09/2022

Figure Title: Figure 2: Non-Designated Assets

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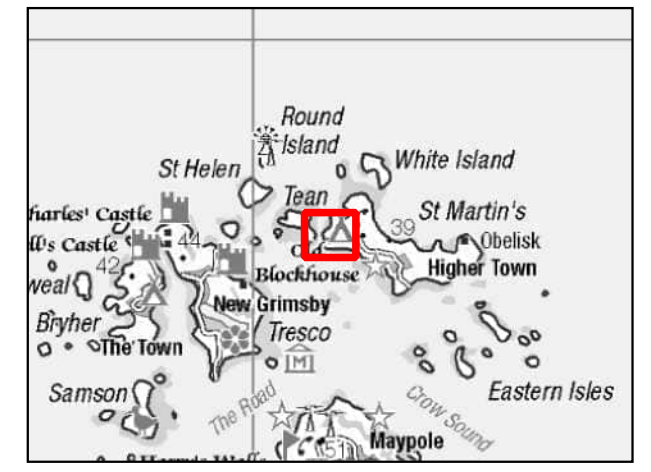
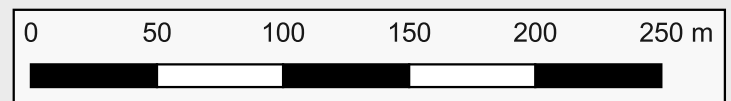


Tean Sound



Lower Town

Neck of the Pool



2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 250m Study Area
- Event Points

Drawn By: KE	Date: 22/09/2022	Scale:
Checked By: KH	Date: 22/09/2022	1:3,000
Approved By: KH	Date: 22/09/2022	Original at A3

Figure Title: Figure 3: Events

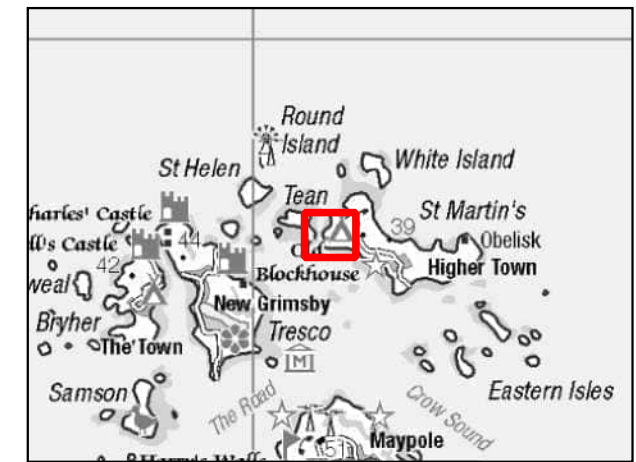
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Tean Sound

Lower Town

Neck of the Pool

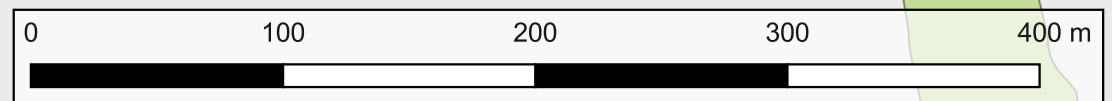


2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 250m Study Area
- Communications
- Farmland: anciently enclosed land (prehistoric to early post-medieval)
- Farmland: bulb strips, late C19/C20
- Farmland: modern enclosures (post 1908), excluding bulb strips
- Foreshore: rocky foreshore and offshore rocks
- Foreshore: sandy forshore (beach and intertidal flats)
- Rough Ground: blown sand/dunes
- Rough Ground: heathland
- Settlements

Drawn By: KE	Date: 22/09/2022	Scale:
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Approved By: KH	Date: 22/09/2022	Original at A3

Figure Title: Figure 4: Historic Landscape Characterisation



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Appendix 7.2 – Cultural Heritage Gazetteers

A.1 Bryher

A.1.1 Designated Assets

Site ID	Type	Description
1141198	II*	Cromwell’s Castle; Gun tower. 1651-2 with gun platform added c1740 by Abraham Tovey, Master Gunner. Randomly coursed granite rubble; granite platform roofs; stone stacks. Circular-plan tower with rectangular C18 gun platform addition on seaward side with external staircase.
1141234	II	Church of All Saints; II Church. Built in 1742, rebuilt in 1821-22, renovated in 1860-61, with alterations of 1897-98 and a new roof of 1930. Roughly coursed granite rubble with slate roofs. Rectangular single-cell plan with narrowed sanctuary end and south west tower.
1141235	II	House, now outbuilding. C18. Roughly coursed granite rubble with gabled pantile roof and granite end stacks. Originally of 2-unit plan. One storey; 2-window range. Granite lintels over central doorway and flanking windows; rear has granite lintel over window to right of centre.
1141236	II	Brewhouse approximately 2 metres south west of Veronica Farmhouse. Brewhouse. C19. Roughly coursed granite rubble with gabled pantile roof and granite end stack.
1292061	II	Veronica Farmhouse. Farmhouse, now house. Earlier C19 with later C19 extension. Roughly coursed granite rubble, of larger blocks to extension; gabled slate roof to main range and scantled slate roof to extension; rendered ridge and end stacks.
1328850	II*	King Charles’ Castle. Fortification. 1550-1554. Roughly coursed granite rubble. Cruciform plan with domestic quarters to rear of semi-hexagonal battery at west end. Fort, originally of two storeys, has gun ports to centre of each of the 5 sides.
1017089	Scheduled Monument	Iron age cist on northern Samson Hill, 165m NNE of Western Carn, Bryher. The monument includes an Iron Age funerary cist near the foot of the northern slope of Samson Hill, the southernmost hill on Bryher in the north west of the Isles of Scilly. When discovered, the cist was found to have been richly furnished with an iron sword in a bronze scabbard.
1017784	Scheduled Monument	Prehistoric cairn cemetery and field system on Shipman Head Down and Great Bottom, Bryher. The monument includes a prehistoric cairn cemetery on Shipman Head Down and the adjacent trough of Great Bottom on the north of Bryher in the Isles of Scilly. The scheduling also includes a later prehistoric field system which subdivides parts of the eastern and southern flanks of Shipman Head Down and rises to define larger areas on its plateau and western slopes.

Site ID	Type	Description
1016173	Scheduled Monument	Gig shed on the north coast of Great Porth, Bryher. The scheduling includes remains of a 19th century gig shed, the former store for a pilot boat called a gig, situated on the bank behind the northern shore of Great Porth, a bay on the west coast of Bryher in the Isles of Scilly.
1016172	Scheduled Monument	Post-medieval pilot lookout on Timmy's Hill, Bryher. The scheduling includes a small pilot lookout formerly used to sight shipping in need of pilotage and situated on the western crest of Timmy's Hill, a prominent hill on Bryher in the Isles of Scilly.
1016171	Scheduled Monument	Post-medieval watch house and coastguard lookout on Watch Hill, Bryher. The scheduling includes a 19th century Coastguard lookout overlying remains of an earlier post-medieval watch house and situated near the summit of Watch Hill, a prominent hill on Bryher in the Isles of Scilly.
1014989	Scheduled Monument	Prehistoric field system and Romano-British cist in Green Bay, Bryher. The monument includes a prehistoric field system in the inter-tidal zone of Green Bay on the east coast of Bryher in the Isles of Scilly. Slightly beyond the southern end of the field system's known extent is a Romano-British funerary cist.
1014990	Scheduled Monument	Prehistoric hut circle south of The Brow, Bryher. The monument includes a prehistoric stone hut circle situated in the inter-tidal zone 60m south of a bulge in the coastline called The Brow on the south east coast of Bryher in the Isles of Scilly.
1015649	Scheduled Monument	Prehistoric enclosure south east of The Brow, Bryher. The monument includes a prehistoric enclosure in the inter-tidal zone south east of a slight bulge in the coastline called The Brow at the southern end of Green Bay on eastern Bryher in the Isles of Scilly.
1014991	Scheduled Monument	Prehistoric linear boundary SSE of the island, Bryher. The monument includes a prehistoric linear boundary exposed in the inter-tidal zone SSE of a small headland called The Island at the northern end of Green Bay on eastern Bryher in the Isles of Scilly.
1016170	Scheduled Monument	Prehistoric linear boundary and cairns south west of The Bar, Bryher. The scheduling includes a prehistoric linear boundary surviving along the middle shore south west of The Bar, on the east coast of Bryher in the Isles of Scilly. Adjacent to the south west end of the boundary are two broadly contemporary cairns.
1014988	Scheduled Monument	Prehistoric field system on the south west flank of Samson Hill, Bryher. The monument includes a prehistoric field system extending across a midslope hollow on the south west flank of Samson Hill, on southern Bryher in the Isles of Scilly.
1014987	Scheduled Monument	Prehistoric field system and post-medieval quay in Great Porth, Bryher. The monument includes a prehistoric field system surviving on the shore of the southern half of Great Porth, a rounded bay on the west coast of Bryher in the Isles of Scilly. The field system incorporates an abandoned post-medieval quay near the southern end of the bay.
1015005	Scheduled Monument	Prehistoric field system and settlement on Heathy Hill, Bryher. The monument includes a prehistoric field system extending over most of the slender promontory of Heathy Hill on the south west coast of Bryher in the Isles of Scilly. The field system incorporates a broadly contemporary hut circle settlement and at the northern edge of the monument it incorporates a kelp pit used for soda ash manufacture during the post-medieval period.
1015544	Scheduled Monument	Kerbed platform cairn 120m south east of Black Carn, Bryher. The monument includes a prehistoric kerbed platform cairn situated near Black Carn on the northern coastal margin of Gweal Hill on western Bryher, in the north west of the Isles of

Site ID	Type	Description
		Scilly. The cairn survives with a sub-circular mound of heaped rubble and earth, 6m in diameter, truncated along its NNE side by the coastal cliff.
1015004	Scheduled Monument	Prehistoric field system on Gweal Hill, Bryher. The monument includes a prehistoric field system extending around the western and southern flanks of Gweal Hill on the west coast of Bryher, in the north west of the Isles of Scilly.
1015648	Scheduled Monument	Three prehistoric cairns on Gweal Hill, Bryher. The monument includes a linear group of three prehistoric round cairns situated 10m apart in a curved line on the summit of Gweal Hill on the west coast of Bryher, in the north west of the Isles of Scilly.
1013797	Scheduled Monument	Prehistoric entrance grave at works Carn, Bryher. The monument includes a large prehistoric entrance grave situated on the southern slope of Samson Hill on Bryher in the Isles of Scilly.
1013796	Scheduled Monument	Two kerbed platform cairns north of Bonfire Carn on eastern Samson Hill, Bryher. The monument includes two prehistoric kerbed platform cairns situated near the northern side of Bonfire Carn, the summit outcrop at the eastern side of Samson Hill on Bryher in the Isles of Scilly.
1013811	Scheduled Monument	Prehistoric entrance grave and round cairn on western Samson Hill, Bryher. The monument includes a prehistoric entrance grave and a nearby round cairn situated on the western side of Samson Hill on Bryher in the Isles of Scilly. The entrance grave is located 17m south west of the round cairn and abuts the south west side of a small natural granite outcrop called Top Rock.
1013667	Scheduled Monument	King Charles' castle mid-16th century artillery castle and civil war earthen artillery defence on western Castle Down, Tresco. The monument includes a mid-16th century artillery castle, known as King Charles' Castle, situated on a slight hill at the western edge of the Castle Down plateau on northern Tresco in the Isles of Scilly. An earthen artillery defence was added to the north and east of the artillery castle during the English Civil War. The artillery castle is a Listed Building Grade II* and, together with the earthen artillery defence, forms a monument in the care of the Secretary of State.
1013275	Scheduled Monument	Cromwell's castle mid-17th century blockhouse and 18th century gun platform on the western coast of Castle Down, Tresco. The monument includes a mid-17th century blockhouse, known as Cromwell's Castle, situated on a small low rocky shelf projecting from the western coast of Castle Down on Tresco in the Isles of Scilly. A raised gun platform was added to the south west side of the blockhouse during the 18th century. Historical sources indicate that this monument was built on the site of a mid-16th century blockhouse. The existing blockhouse and gun platform is a Grade II* Listed Building and a monument in the Care of the Secretary of State.
1010176	Scheduled Monument	Civil war battery on The Green, Bryher
1010163	Scheduled Monument	Civil war battery at Works Point, Bryher. The monument includes a gun battery dating to the English Civil War and situated on The Green, bordering the curving shoreline of Green Bay on the east coast of Bryher in the Isles of Scilly.
1017783	Scheduled Monument	Prehistoric funerary, ritual and settlement remains; post-medieval defences, tin mine, lookouts and enclosures on Castle Down, Tresco. The monument includes prehistoric and post-medieval remains surviving extensively on Castle Down, the

Site ID	Type	Description
		northern upland of Tresco in the Isles of Scilly. A prehistoric cairn cemetery encompasses much of the Down's plateau; on its northern margins are two prehistoric stone rows and an embanked boulder.
1017781	Scheduled Monument	Prehistoric to early medieval field system and settlement at Dial Rocks, Tresco. The monument includes a prehistoric to early medieval field system surviving around the end of a broad spur that extends south east from the Castle Down plateau on northern Tresco in the Isles of Scilly. Incorporated within the field system are hut circles and middens of a broadly contemporary settlement.
Isles of Scilly Conservation Area	Conservation Area	The entirety of the Isles of Scilly is designated as a Conservation Area. Bryher has a rugged character attributed to its western location facing the Atlantic. The landscape of Bryher is characterised by high ground and round top hills including, Shipman Head Down, Watch Hill, Timmy's Hill and Samson Hill.

A.1.2 Non-designated Assets

Site ID	Type	Period	Description
MCO30217	Find Spot	Prehistoric	Lithics recovered during trenching in 1985.
MCO30195	Monument	Prehistoric	A hut floor 5cm thick by 220cm long, exposed in the cliff face from which was recovered a large pot, sherds, flints and a fragment of corroded iron.
MCO30411	Monument	Post Medieval	A drystone wall 0.5m thick, revealed in section during SWEB trenching.
MCO30593	Monument	Post Medieval	The remains of two gig sheds.
MCO30595	Monument	Post Medieval	The remains of the south-eastern gig shed.
MCO30596	Find Spot	Prehistoric	Four water worn flints recovered from the surface of the beach.
MCO30597	Monument	Post Medieval	A small slipway comprising a stone-paved ramp with a line of boulders bordering its west side.
MCO30602	Find Spot	Prehistoric	Flints recovered from the surface of the beach.
MCO30710	Find Spot	Prehistoric	A granite mortar in the garden of Kenython.
MCO30728	Monument	Early Medieval	Remains of a quay, 12m in length and averaging 2.3m wide and 0.6m high.
MCO30935	Monument	Undated	A limpet midden, 0.2m-0.3m deep, visible in the low cliff face on the north side of the small, low promontory.
MCO30934	Monument	Post Medieval	Deposits of limpet shells exposed in the cliff; found in association with glazed pottery and well preserved iron.
MCO30900	Monument	Medieval	The site of a medieval settlement indicated by a concentration of medieval pottery.
MCO30788	Find Spot	Undated	The jaw of an ox found in the cliff face.
MCO30787	Monument	Post Medieval	A midden of relatively modern appearance exposed in the cliff face.
MCO31502	Find Spot	Prehistoric	A granite post-holed or socket stone.

Site ID	Type	Period	Description
MCO31503	Monument	Early Medieval	A dense limpet midden was found on the south side of Staddon.
MCO31504	Monument	Post Medieval	A Baptist chapel in 1877, now a private dwelling known as 'Staddon' .
MCO31551	Monument	Prehistoric	A boundary wall, visible as a closely spaced or continuous row of boulders and smaller slabs.
MCO31552	Monument	Prehistoric	The larger of two possible hut circles associated with the adjacent boulder wall.
MCO31553	Find Spot	Prehistoric	A flint arrowhead and various typical Scillonian thumbnail scrapers, cores and flakes found on the beach off The Brow.
MCO31555	Find Spot	Prehistoric	A broken granite saddle quern lying just on the boulder beach south of The Brow.
MCO31556	Monument	Prehistoric	An alleged hut circle in the cliff face south of The Brow.
MCO31601	Monument	Prehistoric	A two-holed stone recorded by Crawford was subsequently broken up and built into a barn.
MCO31602	Find Spot	Prehistoric	A flint blade recovered during trenching in 1985.
MCO31603	Monument	Medieval	The possible site of an early settlement suggested by a concentration of medieval pottery.
MCO31607	Monument	Post Medieval	The remains of stone splitting, consisting of a massive boulder 2.0m high, with drill marks along two of its edges.
MCO31609	Monument	Prehistoric	The find of a post-holed stone suggests the possible site of an early settlement.
MCO31668	Find Spot	Prehistoric	Fourteen water worn flints found in the intertidal zone.
MCO31669	Find Spot	Prehistoric	A small area of old land surface exposed at roughly half-tide mark.
MCO31758	Find Spot	Prehistoric	A tranchet axe sharpening flake recovered during trenching in 1985.
MCO31760	Monument	Early Medieval	The site of an early medieval settlement indicated by the concentration of pottery.
MCO31764	Monument	Prehistoric	A cist recorded by Troutbeck, not traced by the OS in 1978.
MCO31765	Monument	Prehistoric	Remains of two or more lynchets forming part of an early field system.
MCO41931	Monument	Post Medieval	Field boundaries likely to be associated with an extant bulb strips system, are visible on aerial photos.
MCO41932	Monument	Post Medieval	A field boundary, 45m long and running east-west, is visible on aerial photos.
MCO41933	Monument	Post Medieval	A probable quarry, 10m across, visible on aerial photos.
MCO41934	Monument	Early Medieval	A trackway, approximately 115m long, is visible on air photos.
MCO41938	Monument	Early Medieval	Three linear features are visible 40m below Mean Low Water.
MCO41997	Monument	Modern	A linear feature is visible on the beach SE of Watch Hill.
MCO43005	Maritime	Post Medieval	AWARD. English cargo vessel, lost 19 March 1861.
MCO43012	Maritime	Post Medieval	MAIPU. English cargo vessel, lost 27 July 1879.
MCO43013	Maritime	Post Medieval	ST JACQUES. French cargo vessel, lost 30 October 1879.
MCO43038	Maritime	Post Medieval	TWENDE SODSKENDE. Danish galliot, lost 9 September 1827.

Site ID	Type	Period	Description
MCO43072	Maritime	Post Medieval	Dutch vessel, lost 1 January 1743.
MCO44731	Monument	Prehistoric	The smaller of two possible hut circles associated with the adjacent boulder wall.
MCO56775	Monument	Prehistoric	Four hut circles recorded on the northern side of Samson Hill.
MCO56726	Maritime	Medieval	The site of a potential early 14 th century wreck in Tresco Channel, Isle of Scilly.

A.1.3 Events

Site ID	Type	Description
ECO3213	Event - Interpretation	Hillcrest watching brief, Bryher, Scilly. Small samples were taken from the two limpet middens, however because these are modern in date further study is unlikely to yield useful information and no further work is recommended. The samples have been discarded.
ECO3127	Presentation	Isles of Scilly Booklet. This book provides an up-to-date summary of the archaeology and history of Scilly and brief descriptions of the best monuments to visit island by island
ECO3116	Event - Interpretation	Isles of Scilly field boundaries feasibility study, desk study. This report describes the results of a desk-based study to inform future conservation management of field boundaries on the Isles of Scilly, carried out by Historic Environment Projects, Cornwall Council for the Isles of Scilly AONB Partnership in 2010.
ECO2728	Event - Interpretation	Isles of Scilly Off Island Quay Refurbishment EIA. In total, seven quays would be refurbished. There were sites of cultural heritage importance close to Carn Near, Anneka's Quay, Church Quay, Higher Town and St. Agnes.
ECO2696	Event - Intervention	Off Island Quays, IoS. Between April and November 2007, the Historic Environment Service (Projects), Cornwall County Council undertook a programme of watching briefs during works associated with refurbishments to the quays on the off islands of Bryher, St Agnes and St Martin's in the Isles of Scilly, commissioned by the Duchy of Cornwall. The first watching brief, at Church Quay, Bryher, was carried out on 4 April 2007. A 2m wide trench was dug around the quay and backfilled when it had been observed and recorded. In most places the overburden of sand was removed down to the natural subsoil or ram. In the north-western area there was much loose broken granite (presumably from the carn on the southern side of the quay and some pieces of reinforced concrete). A soil sample was taken from a black deposit in the ram and on the stones. No other features or finds were apparent. A second watching brief was undertaken in late May and early June 2007 during preparation of the contractor's compound near Kallimay Point on St Agnes. The following finds and features were identified: <ul style="list-style-type: none"> •Two Bronze Age urn bases placed in small pits; •Remains of a probable 19th century farm building; •Site of a concrete base for a late 1980s meteorological balloon.

Site ID	Type	Description
ECO2577	Event - Interpretation	Bryher Coastal Defences, IoS. This Environmental Statement has been prepared at the request of the Council of the Isles of Scilly in response to proposals prepared by DHV (UK) Ltd to renew and supplement the inadequate and deteriorating sea defences at critical locations. It addresses the existing situation, the proposed remedial works and their resulting potential impact on the landscape, ecology and cultural heritage of the island, and recommended measures to mitigate that impact. The full Environmental Statement contains detailed appraisal of the likely environmental effects.
ECO2576	Event - Interpretation	Bryher Coastal Defences, IoS. The impact of the proposed Bryher coastal defence scheme on the known archaeology should be minimal, though it will involve the destruction of a small post medieval slipway and there is a need to safeguard the remains of a submerged prehistoric field system. A limited amount of archaeological recording is recommended both before the defence construction begins (to record the slipway prior to its destruction) and while work is in progress (to allow for the identification, recording and sampling of buried archaeological layers which may be exposed by excavations associated with the defence construction). Depending on the degree of archaeological fieldwork, a certain amount of post-fieldwork archiving, analysis and writing up will be required.
ECO2437	Event - Interpretation	Isles of Scilly Environmental Project. The artefacts described in detail in the main part of this report were collected from prehistoric (and later) sites exposed in the cliff face or intertidal zone around the Isles of Scilly. Most of this material was retrieved during 1989 to 1993 when Cornwall Archaeological Unit (CAU) was involved in the recording, sampling and monitoring of such sites as part of an English Heritage funded field project (Ratcliffe 1996).
ECO2433	Event - Interpretation	Hell Bay Hotel Extension. This report contains the findings of an environmental impact assessment of the proposals to extend Hell Bay Hotel on the Island of Bryher in the Isles of Scilly. The report is formally referred to as the 'Environmental Statement'.
ECO2255	Event - Survey	Castle Bryher. The aim of the report is to ascertain the existence of a breastwork on the north/north-east coast of Bryher, recorded by earlier writers, but which the Ordnance Survey were unable to locate, to decide whether or not it was the same feature referred to as Castle Bryher by earlier writers, and to search for the site, or sites.
ECO2208	Event - Intervention	Veronica Farm Bryher, Isles of Scilly. This report describes the results of the archaeological recording carried out by Katharine Sawyer for Mr and Mrs Bennett between November 2007 and March 2008 during the excavation of groundworks for the construction of a new house at Veronica Farm, Bryher, Isles of Scilly (NGR SV 87871476).
ECO2042	Event - Interpretation	Isles of Scilly Historic Landscape Assessment and Management Strategy. This report results from a study undertaken to assess the landscape of the Isles of Scilly with particular reference to the enclosed agricultural land, and, based on this, the preparation of a strategy to guide its future management. The study was commissioned by the Duchy of Cornwall in partnership with the Countryside Commission. The management strategy is intended to provide guidance for MAFF in the implementation of the Countryside Stewardship Scheme. (the Scheme transfers to MAFF from the Countryside Commission on 1st April 1996).
ECO1842	Presentation	Isles of Scilly Environmental Report. Over a five year period from 1989 to 1993, with funding from English Heritage and in conjunction with the Ancient Monuments Laboratory (English Heritage) and Bristol University, Cornwall Archaeological Unit

Site ID	Type	Description
		carried out a small-scale recording and sampling programme to assess the palaeoenvironmental potential of these early coastal sites. With the intertidal peat deposits the aim was to test their potential for enhancing understanding of the vegetational history of Scilly and as a means of testing and refining the current model for sea level change. For cliff face sites, the main aim was to assess their potential for yielding information on the subsistence economy and diet of the early inhabitants of the Islands, with particular emphasis being placed on sampling for plant macrofossils which, apart from charcoal, were virtually unknown for Scilly.
ECO1479	Event - Intervention	Geomorphology of the Isles of Scilly. The soils and geomorphology of the islands are described. The main soils of the islands are formed in granitic Head, loess (wind-blown silt) and blown sand. Most soils are podzolic and their nature reflects the parent material type whilst man has strongly influenced soil development via vegetation change and more directly by the addition of seaweeds and by deep and intensive cultivation
ECO1300	Event - Interpretation	Isles of Scilly Rapid Coastal Zone Assessment. This report describes the results of a rapid coastal zone assessment (RCZA) of the Isles of Scilly carried out in 2003 and early 2004 by the Historic Environment Service, Cornwall County Council for English Heritage. The Isles of Scilly RCZA is an innovative project, being the first such assessment to be commissioned since the National Heritage Act (2002) enabled English Heritage to assume responsibility for all monuments on, in, or under the seabed within UK territorial waters around the coast of England. The aim of the project is to improve our knowledge and understanding of the submerged heritage by extending existing terrestrial, shoreline and intertidal assessments of the islands out to the 12 nautical mile limit in order to achieve integrated management of the whole of the historic environment in Scilly.
ECO1195	Event - Interpretation	Bryher Cist, IoS. This interim report presents the outline of the project; a full report will follow as soon as the analysis of the pottery has been completed (by John Allen) hopefully in the autumn of 2012. Early fourteenth-century pottery had been recovered from a small area in Tresco Channel on the Isles of Scilly. To date almost 300 sherds have been recovered, the majority of which are from the Saintonge region of France. The distribution of this pottery has been recorded and it is thought that this material is likely to be indicative of a medieval shipwreck.
ECO1193	Event - Interpretation	Isles of Scilly Environmental Management Plan. This environmental management plan aims to provide the Isles of Scilly Environmental Trust (hereafter called 'the Trust') with an assessment of the land they lease. It suggests the management strategies which should be implemented to ensure the conservation and protection for the land for which the Trust has direct responsibility, as well as more general prescriptions for the rest of the Isles of Scilly for which the Trust has an advisory role. It is envisaged that the management plan will undergo an intermediate review in about two year's time, followed by a full review after five years have elapsed. These reviews will be carried out by persons and organisation conversant with the present position of the Scillonian environment.
ECO1191	Event - Interpretation	Hell Bay Hotel. Many of the remains of military defence works on the Isles of Scilly are vulnerable to coastal erosion. These works date from the 16th to the 20th centuries and form a unique and comprehensive collection of forts, redoubts, batteries, breastworks and strong points as well as communications structures. Many of them are unfinished works, reflecting a succession of 'stop-go' policies for defending the islands. Comprehensive archaeological survey of these works on all the main

Site ID	Type	Description
		islands was undertaken between 2008 and 2010, following more geographically restricted investigation and excavation of the Garrison, St Mary's in 2005-6. This report summarises the works on the earthworks and minor features, complementing work on the architectural remains of the Garrison reported in RDRS 39-2011
ECO1118	Event - Survey	Isles of Scilly habitat and biotope. A survey of the Isles of Scilly, Cornwall, South-West England, was conducted between the 21st of September and the 22nd of October 1997. The aim of this survey was to map the extent of subtidal sediment habitats, differentiating between different biological components to the most detail possible, using a combination of Biomar lifeform and MNCR biotopes where possible.
ECO1100	Event - Intervention	Bryher Church, IoS. Only one of the finds was earlier than 19th century in date and this was an earthenware rim sherd of postmedieval date, probably 17th century.
ECO3344	Event - Intervention	Bryher Post Office watching brief, IoS. Groundworks started at the site of the new shop and Post Office site on 14 February 2011 and were observed by Katharine Sawyer. The development site is in the former garden to the south of a property known as "Castle Bryher". It is on level high ground near the top of an east-west slope and is to the east of the concrete road. The site was cleared of rubbish and garden vegetation and several trees were removed. The turf was stripped and an opening made through the drystone wall to the west of the site for a new pedestrian access. The site was then levelled, by machine, commencing in the north-east corner. In summary, the site had been extensively disturbed and no structures, features or deposits of archaeological interest were recorded.
ECO3236	Event - Intervention	Sampson Cottage, Bryher, Isles of Scilly. This report describes the results of an archaeological watching brief carried out in October and November 2010 by Historic Environment Projects, Cornwall Council for the Duchy of Cornwall in order to satisfy a planning condition for archaeological recording during groundworks at the site of Sampson Cottage, Bryher (NGR SV87957 14400). There were no archaeological features or finds below the building or in the pits for the rainwater tank, soakway and connecting trench, but in one corner of the pit for the new septic tank were 43 sherds of pottery in a truncated pit. The pottery has been identified as briquetage - the remains of shallow pans used in to evaporate seawater in the salt-making process - and possibly dating to the Bronze Age.
ECO3226	Event - Intervention	Multi-Use Games Area (MUGA), South'ard, Bryher, Isles of Scilly. This report describes the results of the archaeological recording carried out by Katharine Sawyer for Bryher Community Centre Association in November 2010 during the excavation of groundworks for a multi-use games area (MUGA) on land adjacent to the waste management facility at South'ard, Bryher, Isles of Scilly (NGR SV 87730 14996).
ECO3506	Event - Intervention	Bryher Boatyard, IoS. Historic Environment Projects, Cornwall Council (HE Projects) were commissioned by Richard Drew of Bryher Boatyard to undertake a watching brief during ground works for the erection of a timber clad chandlery and storage building. No significant archaeological features or finds were uncovered during the watching brief
ECO3549	Event - Intervention	Fraggle Rock Staff Accommodation, Bryher, Isles of Scilly. This report describes the results of the archaeological recording, carried out by Katharine Sawyer for Kim Hopkins in October 2010, during the excavation of groundworks for staff accommodation for the Fraggle Rock Bar and Café on land within Harbour View, Bryher, Isles of Scilly (NGR SV 88022 15469).

Site ID	Type	Description
		The remains of a demolished drystone field boundary, from map evidence built between 1890 and 1906 and demolished between 1963 and 1980, were found. No other features were identified but three sherds of 18th or early 19th century pottery, including one of Bristol-Staffordshire yellow slipware, sheep bones and a few limpet shells were found in the topsoil.
ECO3567	Event - Survey	Isles of Scilly field boundaries field work. This report describes the results of a pilot project to map and assess the field boundaries on the Isles of Scilly in order to inform future management for conservation, carried out by Historic Environment Projects, Cornwall Council, for the Isles of Scilly Area of Outstanding Natural Beauty (AONB) Partnership in 2011.
ECO5328	Event - Interpretation	Geoarchaeological Regional Review of Marine Deposits along the Coastline of Southern England. Coastal deposition has led to the accumulation of some of the thickest deposits of Holocene sediments in the British Isles. Often permanently waterlogged, these sediments provide ideal conditions for the preservation both of archaeological remains and palaeoenvironmental material. They therefore represent a geoarchaeological resource of the highest value and have been the source of some of the most exciting archaeological discoveries of recent times. This review aims to provide a synthesis of the location and nature of geoarchaeologically significant marine deposits around the southern English coastline and identify any areas where future work is needed. The coast continues to be a dynamic environment and the review comes at a time when the United Kingdom's coastal sediments are increasingly at risk of erosion, caused by rising sea-levels driven by climate change. The review therefore includes deposits that formed in a terrestrial environment but are now submerged as a result of a rise in relative sea-level.
ECO3000	Event - Intervention	Bryher Affordable Housing watching brief, IoS. The results of the watching brief indicated that there was sustained agricultural activity in this area, probably from late prehistory onwards. This activity had intensified in the twentieth century with soil improvements resulting in a thick rich topsoil, probably for bulb farming.
ECO3584	Event - Intervention	Land to the South of Castle Bryher, The Town, Bryher, Isles of Scilly. This report describes the results of the archaeological watching brief, carried out by Katharine Sawyer for Mr and Mrs Pearce in December 2011, during the excavation of groundworks for a new craft workshop, print gallery and studio with staff accommodation on land to the south of Castle Bryher and immediately adjacent to the new Bryher Post Office and Shop at The Town, Bryher, Isles of Scilly (NGR SV 87901 15080). The area of the building was found to cover a small carn (natural rock outcrop) where the topsoil is only about 0.1m deep over the bedrock. No structures, features or finds were identified.
ECO3590	Event - Intervention	Hanjague, Bryher, Isles of Scilly. Seven sherds of plain and patterned white glazed domestic pottery of late 19th or early-mid 20th century date were found during the watching brief. These were kept for identification purposes only and subsequently discarded. There were no other finds and no structures or features were observed.
ECO3682	Event - Survey	The Lyonesse Project. This report describes the results of Year 1 of the Lyonesse Project, 2-year project to study of the evolution of the coastal and marine environment of the Isles of Scilly, commissioned by English Heritage's Historic Environment Enabling Programme. The project is being carried out by Historic Environment Projects, Cornwall Council, a team of experts from Aberystwyth, Cardiff, Exeter and Plymouth Universities and local marine archaeologists and enthusiasts

Site ID	Type	Description
		from the Cornwall and Isles of Scilly Maritime Archaeological Society (CISMAS) and the Islands Maritime Archaeology Group (IMAG).
ECO3684	Event - Survey	Tresco Channel Wreck. This interim report presents the outline of the project; a full report will follow as soon as the analysis of the pottery has been completed (by John Allen) hopefully in the autumn of 2012. Early fourteenth-century pottery had been recovered from a small area in Tresco Channel on the Isles of Scilly. To date almost 300 sherds have been recovered, the majority of which are from the Saintonge region of France. The distribution of this pottery has been recorded and it is thought that this material is likely to be indicative of a medieval shipwreck.
ECO3784	Event - Interpretation	Isles of Scilly Historic Environment Research Framework. Preparation of a Research Framework for the Historic Environment of the Isles of Scilly. This project comprises the first two stages Resource Assessment and Research Agenda. It is envisaged that the third stage, the Research Strategy, will follow on as separate project.
ECO3819	Event - Survey	Isles of Scilly: Military Defences, 1540-1951. Many of the remains of military defence works on the Isles of Scilly are vulnerable to coastal erosion. These works date from the 16th to the 20th centuries and form a unique and comprehensive collection of forts, redoubts, batteries, breastworks and strong points as well as communications structures. Many of them are unfinished works, reflecting a succession of 'stop-go' policies for defending the islands. Comprehensive archaeological survey of these works on all the main islands was undertaken between 2008 and 2010, following more geographically restricted investigation and excavation of the Garrison, St Mary's in 2005-6. This report summarises the works on the earthworks and minor features, complementing work on the architectural remains of the Garrison reported in RDRS 39-2011
ECO3977	Event - Survey	Heathy Hill, Bryer, Isles of Scilly. A prehistoric field system was surveyed by tape triangulation and prismatic compass.
ECO4104	Event - Survey	Lyonesse Project. The Lyonesse Project aimed to reconstruct the evolution of the physical environment of the Isles of Scilly during the Holocene, the progressive occupation of this changing coastal landscape by early peoples and their response to marine inundation and changing marine resource availability.
ECO4141	Event - Intervention	Isles of Scilly Superfast Broadband Project. Archaeological recording during subsea cable crossing from Cornwall and watching brief during installation of cable at five landing places on the Isles of Scilly.
ECO4145	Event - Survey	Tresco Channel Exploratory Excavation 2013. The presence of medieval pottery in Tresco Channel has been known for some time. In 2011 a local diver (Dave McBride) recovered 69 pieces of medieval pottery from around yacht moorings in the channel and brought it to the attention of CISMAS. This pottery was of French origin and dated to the late 13th/ early 14th century. Later that year CISMAS undertook a survey of the seabed in this area and recovered 264 sherds of pottery. This again was mainly French (Saintonge) and was also dated 1350-1450 AD. The pottery distribution was mapped and shows a distinct concentration around two of the mooring buoys.

Site ID	Type	Description
ECO4195	Event - Interpretation	Isles of Scilly: Optically Stimulated Luminescence Dating of Coastal and Intertidal Sediments: Scientific Dating Report. This report presents the findings of a study using optically stimulated luminescence (OSL) dating undertaken at Aberystwyth University to determine the ages of coastal and intertidal sediments from the Isles of Scilly, undertaken as part of the larger Lyonesse Project commissioned by English Heritage's Historic Environment Enabling Programme (HES project number 2009029), and lead by Charles Johns, Historic Environment Projects, Cornwall Council.
ECO784	Event - Intervention	Isles of Scilly Electrification. The aim of this report is to present the results of the archaeological watching brief which accompanied the electrification of the outer islands of Scilly during 1985. Several thousand artefacts were collected during the seven-month project, including substantial quantities of flint, pottery, bone and clay pipe.
ECO4932	Event - Intervention	New Premises for Island Fish Ltd, Kenyhton, Bryher, Isles of Scilly: Archaeological Watching Brief. A watching brief was carried out during groundworks for a new workspace (on the site of a demolished wooden dwelling house built about 80 years ago) and associated septic tank pit and soakaway. No archaeological structures, features or finds were uncovered.
ECO5248	Event - Interpretation	Isles of Scilly Historic Environment Research Framework. The first two stages of the Scilly Historic Environment Research Framework (SHERF), the Resource Assessment and Research Agenda, were completed in December 2012. SHERF was funded by English Heritage (now Historic England) with contributions from the Isles of Scilly AONB Unit, the Council of the Isles of Scilly and the Duchy of Cornwall and had as its aim the provision of a structure in which to make decisions about future historic environment research in the Islands.
ECO537	Maintenance	Isles of Scilly Management, 1991. During 1991 and 1992, as part of a rolling programme of management works, survey, conservation and other investigative works were undertaken. These investigations included a detailed survey of St Nicholas' Priory Church on Tresco and of St Helen's Pest House; coastal monitoring works on St Agnes, St Martin's, St Mary's, Samson and Tresco; detailed recording and sampling of cliff-face sites at Halangy Porth and Porth Cressa on St Mary's, Bonfire Carn on Bryher, East Porth on Tean and at Blockhouse Point; recording and sampling of intertidal peat deposits at Par/Higher Town Beach on St Martin's, Crab's Ledge on Tresco and at Porth Mellon on St Mary's; and capital management works at Oliver's Battery and an earthwork at King Charles' Castle on Tresco, an inscribed stone at Tresco Abbey Gardens, North and South Hill, Samson and at Mount Todden Battery on St Mary's.
ECO538	Maintenance	Isles of Scilly Management, 1993-1994. During the fifth and final year of work arising out of the archaeological management plan for Scilly, coastal monitoring was undertaken at 23 key cliff, beach and intertidal sites around Scilly's present coastline. Environmental sampling was undertaken at cliff-face sites below Bonfire Carn and at Shipman Head on Bryher. Capital management works were undertaken to improve access and interpretation at St Elidus' Hermitage, St Helen's.
ECO553	Event - Survey	Hillside Farm, Bryher, Isles of Scilly. geophysical survey, using magnetometry, resistivity and magnetic susceptibility, was conducted over an area of approximately 3 ha at Hillside Farm, Bryher, Isles of Scilly, where a stone lined cist containing an Iron Age sword with copper-alloy scabbard had been discovered. Whilst some anomalies were detected which may be archaeological in origin, the data has mostly been compromised by modern interference, underlying geology and subdued

Site ID	Type	Description
		responses. The most obvious anomalies tended to correspond with known features and so little more information has been provided to set the cist into a wider context.
ECO754	Event - Intervention	Hell Bay Hotel ,Bryher, IoS. The watching brief was carried out in advance of the construction of three new buildings. Evidence of human activity was confined to a small pit which contained two prehistoric flint artefacts and a sherd of imported post- Roman pottery. Much of the area had been disturbed by recent groundworks.
ECO957	Curatorial Advice	Isles of Scilly Management. The aims of the project are: - to describe the character, distribution and importance of identifiable archaeological and historical sites, monuments and landscapes on the Isles of Scilly - to assess existing access to, and protection, management, interpretation and presentation, of these remains - to make recommendation as to future access to, and protection, management, interpretation and presentation of, these remains - to make recommendations regarding future archaeological work in Scilly
ECO977	Event - Intervention	Bryher Coastal Defences, watching brief, IoS. On two occasions during December 1994 and January 1995 an archaeological watching brief was carried out during construction work for the Bryher Coastal Defences by CAU for the Council of the Isles of Scilly. No features or deposits of archaeological significance were revealed on these occasions. From mid-January construction work was abandoned for several weeks because of adverse weather conditions. When work resumed David Close, the site engineer, agreed to contact CAU if any deposits other than sand or rab were revealed during excavation work. No such deposits were found.
ECO5451	Event - Interpretation	Isles of Scilly. The Isles of Scilly comprise over 150 granite islands scattered across 200sq km, set out in the Atlantic some 40km south-west of Land's End. Of these islands, only about 50 support vegetation and only five - St Mary's, St Agnes, St Martin's, Tresco and Bryher - are currently inhabited, covering a total area of just over 14sq km. The islands display a striking diversity of landscapes, some very ancient, including lowland heath, small pastures enclosed by stone walls and banks, tiny hedged bulb fields and a varied coastline. The richness of the archaeology and landscape is reflected in a very high density of designations; 129 listed buildings, over 250 scheduled monuments, some 900 identified historic assets in total, the entire Character Area is designated as an Area of Outstanding Natural Beauty (AONB), Heritage Coast, Conservation Area and Special Area of Conservation. The urban area is limited to the small town of Hugh Town on St Mary's, and woodland cover is minimal (although the thick shelter-belts and hedges have significant landscape impact in specific areas).

A.2 St Agnes

A.2.1 Designated Assets

SITE ID	Type	Description
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1141201	Listed Building Grade II	Outbuilding AT SV 8831 0819. House, now outbuilding. C18. Roughly coursed granite rubble with corrugated iron roof; truncated end stack. 2-unit plan. 2 storeys; irregular 2-window range.
1141202	II	Rosenhill. House. Early C19. Roughly coursed granite rubble; corrugated asbestos roof; granite end stacks. 2-unit central staircase plan with rear right outshut.
1141237	II	Avenue House. House. Early/mid C19. Roughly. coursed granite rubble; slurried scantled slate roof; granite end stacks with drip courses.
1141238	II	Church of St Agnes. Church. Early C19. Roughly coursed granite rubble with slate roof. Single-cell plan with west tower. Semi-circular arched east window.
1141239	II	Building to South East of the Lighthouse. Ancillary building to The Lighthouse (q.v.). c1840. Roughly coursed granite rubble with hipped slate roof and granite end stacks with octagonal flues.
1141240	II	The Parsonage. Parsonage, now house. Early C19. Colourwashed render over granite rubble; slate roof; rendered brick stacks except granite stack with drip course to rear wing.
1218288	II	House Attached to North East of the Lighthouse. Quarters for lighthouse and coastguard staff, now house. c1840. Colourwashed render over granite rubble; slate roof with kneelers to stone coping; lateral and end stacks with octagonal shafts.
1218318	II	Atlantic Cottage. Farmhouse. C18, eaves raised and other alterations of late C19. Roughly coursed granite rubble with slurried Delabole slate roof and granite end stacks. 2-unit central-staircase plan. 2 storeys; 3-window range.
1244931	II	Tamarisk Farmhouse. GV II Farmhouse. C18, extended mid C19. Stone rubble, roughly brought to course, colour washed to east side; gabled dry slate roof with brick end stacks, those to C18 section with C18 stone bases.
1244932	II	Barn to the West of Tamarisk Farmhouse. Combination barn. Mid C19 (shown on 1880 OS map). Uncoursed stone rubble with dressed quoins and lintels; gabled pantile roof Rectangular plan. 2 storeys. East front facing house and former yard between has stone lintels over outer C20 doors.
1292037	II	K6 Telephone Kiosk. Telephone kiosk, Type K6. Designed 1935 by Sir Giles Gilbert Scott. Made by various contractors. Cast iron. Square kiosk with domed roof. Unperforated crowns to top panels and margin glazing to windows and door.
1292064	II	Farm building Approximately 20 Metres north north east of Annet Farmhouse. Farm building, formerly used as threshing barn, cowhouse and stables. Early C19. Roughly coursed granite rubble; corrugated asbestos roof. 2 storeys; 2-window first-floor range. Shutters to first-floor loft doors above granite lintels over outer doorways and 2 central windows. Hole for drive

		shaft which powered threshing machine. Steps to first-floor door in left gable door. A good example of an advanced type of farm building situated on an island once noted for its fertile corn-bearing soil.
1328835	II*	The Lighthouse. Lighthouse. 1680 for Trinity House, with cupola of 1806. Colourwashed render on granite rubble, with cast-iron and glass cupola. Circular on plan. 3 storeys with fourth-storey cupola. 2 plat band divisions. Randomly-placed casement and 4-pane openings. Projecting eaves with cast-iron railing, curved stanchions tied to glass cupola with square panes with curved conical roof.
1328836	II	Myrtle Cottage. Farmhouse, now house. Late C18/early C19. Colourwashed roughly coursed granite rubble with slate roof and granite end stacks with drip courses. 3-unit plan with entry to right of centre. 2 storeys; 3-window range. Granite lintels over late C19 panelled door and horned 2/2-pane sashes. Outshut to left and rear left outshut. Interior not inspected but noted as having C19 joists.
1328852	II	Rose Cottage. House. C18 (rear wing) with early C19 extension. Roughly coursed granite rubble with slurried scantled slate roof and brick end stacks. L-plan with rear right wing. 2 storeys; 3-window range. Granite lintels over late C19 horned 2/2-pane sashes.
1016510	Scheduled Monument	Platform cairn on Burnt Island. The monument includes a prehistoric platform cairn with traces of an internal funerary structure and incorporating a group of natural outcrops on the north west of Burnt Island, a small uninhabited island off the north west coast of St Agnes in the south west of the Isles of Scilly.
1016512	Scheduled Monument	Two early Post-medieval quays in north and western Periglis, St Agnes. The monument includes two early post-medieval quays, one known as 'Uncle Tom's Quay', on the north and north west of Periglis, a small bay on the north west coast of St Agnes in the south west of the Isles of Scilly. The quays are in two areas of protection, and part of each extends below Mean Low Water level.
1014998	Scheduled Monument	Prehistoric settlement and field system at Porth Killier, St Agnes
1014999	Scheduled Monument	St agnes lighthouse
1015000	Scheduled Monument	Nineteenth century horse engine and threshing machine at lower town farm, St Agnes
1015003	Scheduled Monument	Prehistoric to Romano-British field system and settlement at higher town, St Agnes
1014792	Scheduled Monument	Prehistoric cairns, entrance graves, field system and settlements and post-medieval kelp pits on Kittern Hill, Gugh
1015697	Scheduled Monument	Prehistoric field system and post-medieval breastwork and maze on castella down, St Agnes

A.2.2 Non-designated Assets

Site ID	Type	Period	Description
MCO30136	Find Spot	Early Medieval	A collection of granite objects lying against the south wall of Atlantic Cottage in Higher Town.
MCO30135	Find Spot	Prehistoric	A collection of granite objects lying against the south wall of Atlantic Cottage, Higher Town.
MCO30809	Monument	Undated	A short length of wall, two courses high.
MCO30819	Monument	Post Medieval	A Bible Christian chapel at Lower Town, built in 1832.
MCO31071	Monument	Prehistoric	An old land surface in the low cliff face immediately below the lifeboat house at Periglis.
MCO31072	Monument	Early Medieval	A limpet midden is visible as a shallow band, 3.0m long, in the cliff face below the lifeboat house at Periglis.
MCO31073	Monument	Medieval	The possible site of a medieval chapel and burial ground.
MCO31074	Monument	Post Medieval	A disused lifeboat house, which together with its associated slipways was in use from 1890 until 1920.
MCO31075	Monument	Post Medieval	Seven buildings at Periglis were probably boathouses (gig sheds) which had gone out of use by 1890.
MCO31076	Find Spot	Prehistoric	Provenance of granite bowl quern now at Atlantic Cottage, Higher Town.
MCO31116	Monument	Early Medieval	An inscribed stone bearing the letters 'TH', perhaps for 'Tobias Hicks', found in Porth Conger.
MCO31117	Monument	Prehistoric	A drystone wall, three courses, 0.6m high, which may constitute part of an early field system.
MCO31118	Monument	Prehistoric	A structure, 0.8m high, visible in the cliff face on the west side of Porth Conger.
MCO31119	Find Spot	Prehistoric	Bronze Age pottery found in the cliff face on the west side of Porth Conger.
MCO31173	Monument	Prehistoric	A vertical pillar of granite resembling a prehistoric standing stone painted white, was destroyed during a storm c1999.
MCO31429	Find Spot	Prehistoric	Worked flints, including a core and tools, were collected from trenches dug by SWEB during 1985.
MCO31431	Find Spot	Prehistoric	Provenance of granite mortar now at Atlantic Cottage, Higher Town.
MCO31495	Find Spot	Prehistoric	Eighteen granite objects, part of a collection in the Lighthouse garden.
MCO31496	Find Spot	Romano British	A well-made grieson mortar with a carved handle in the Lighthouse garden.
MCO31497	Find Spot	Medieval	A granite cresset stone amongst the stones in the Lighthouse garden.
MCO31498	Find Spot	Post Medieval	A broken trough and granite anchor stone amongst the stones in the Lighthouse garden.
MCO31499	Find Spot	Early Medieval	Eight granite querns and two granite columns amongst the stones in the Lighthouse garden.
MCO31500	Find Spot	Undated	Two granite pivot stones, two granite fishing weights, and a possible whetstone, amongst the stones in the Lighthouse garden.
MCO31626	Find Spot	Prehistoric	Seven waste flints and a scraper recovered from the low cliff face on the SW side of Tol Tuppens.
MCO31730	Monument	Undated	An extensive limpet midden to the rear of Troy Town.
MCO31734	Monument	Post Medieval	The old coastguard station in Porth Conger.

MCO31735	Monument	Post Medieval	The Turk's Head public house was originally built as a coastguard house, part of the coastguard station in Porth Conger.
MCO31736	Monument	Post Medieval	A slipway which was built as part of the old coastguard station in Porth Conger.
MCO31737	Monument	Post Medieval	A quay built as part of the old coastguard station in Porth Conger.
MCO31738	Monument	Post Medieval	Two ruined buildings which may be boathouses which appear to have been part of the coastguard station in Porth Conger.
MCO41983	Monument	Post Medieval	A small pit, 3.4m diameter, visible on aerial photographs.
MCO53004	Find Spot	Prehistoric	A collection of granite objects lying against the south wall of Atlantic Cottage, Higher Town.
MCO52966	Monument	Prehistoric	An old land surface and limpet midden exposed in the low cliff face at Periglis.
MCO64520	Monument	Prehistoric	Extant Prehistoric hut circle, surveyed in 2010
MCO64519	Monument	Modern	Extant sea wall consisting of a reinforced bank, was constructed in 1996, part of a coastal protection scheme
MCO64518	Monument	Prehistoric	Extant Prehistoric pond, dating to at least the Romano British period
MCO62965	Monument	Post Medieval	Extant typical Scillonian cottage, probably 18th century in date, later converted to a barn.
MCO30837	Monument	Early Medieval	The site of an early medieval and medieval settlement at Middle Town was indicated by the concentration of C10-C15 pottery.
MCO30607	Monument	Post Medieval	A holed stone forming one side of an inglenook fireplace in a disused farmhouse.
MCO30663	Monument	Post Medieval	A post-medieval occupation site may be represented by the finds of burnt clay, limpets and two pieces of finely dressed granite.
MCO30604	Findspot	Prehistoric	A granite saddle quern and other stone objects lying against the south wall of Grinlinton Farm in Higher Town.
MCO30605	Findspot	Early Medieval	A collection of stone and other objects lying against the south wall of Grinlinton Farm in Higher Town.
MCO31096	Monument	Early Medieval	A well, covered over with a concrete and metal cover, situated on the verge of the road.

A.2.3 Events

Site ID	Record Type	Description
ECO4195	Event - Interpretation	Isles of Scilly: Optically Stimulated Luminescence Dating of Coastal and Intertidal Sediments: Scientific Dating Report. This report presents the findings of a study using optically stimulated luminescence (OSL) dating undertaken at Aberystwyth University to determine the ages of coastal and intertidal sediments from the Isles of Scilly, undertaken as part of the larger Lyonesse Project commissioned by English Heritage's Historic Environment Enabling Programme (HES project number 2009029), and lead by Charles Johns, Historic Environment Projects, Cornwall Council.

ECO4104	Event - Survey	Lyonesse Project. The Lyonesse Project aimed to reconstruct the evolution of the physical environment of the Isles of Scilly during the Holocene, the progressive occupation of this changing coastal landscape by early peoples and their response to marine inundation and changing marine resource availability.
ECO3819	Event - Survey	Isles of Scilly: Military Defences, 1540-1951. Many of the remains of military defence works on the Isles of Scilly are vulnerable to coastal erosion. These works date from the 16th to the 20th centuries and form a unique and comprehensive collection of forts, redoubts, batteries, breastworks and strong points as well as communications structures. Many of them are unfinished works, reflecting a succession of 'stop-go' policies for defending the islands. Comprehensive archaeological survey of these works on all the main islands was undertaken between 2008 and 2010, following more geographically restricted investigation and excavation of the Garrison, St Mary's in 2005-6. This report summarises the works on the earthworks and minor features, complementing work on the architectural remains of the Garrison reported in RDRS 39-2011
ECO3784	Event - Interpretation	Isles of Scilly Historic Environment Research Framework. Preparation of a Research Framework for the Historic Environment of the Isles of Scilly. This project comprises the first two stages Resource Assessment and Research Agenda. It is envisaged that the third stage, the Research Strategy, will follow on as separate project.
ECO3687	Event - Intervention	St Agnes Island Hall, IoS. Historic Environment Projects (HE Projects) were commissioned by the Council of the Isles of Scilly to undertake an archaeological evaluation of the site of the proposed extension of the Island Hall, St Agnes. This was to guide mitigation measures required by a planning condition on the proposal. Three evaluation trenches were excavated. Although no archaeological features were identified many finds were recovered from the topsoil and subsoil, including two flint flakes, a sherd of prehistoric pottery and sherds of early medieval and medieval pottery and it recommended that an archaeological watching brief should be carried out during the construction phase of the project to identify any isolated features that may lie outside of the evaluation trenches and collect finds within the topsoil and subsoil.
ECO3682	Event - Survey	The Lyonesse Project. This report describes the results of Year 1 of the Lyonesse Project, 2-year project to study of the evolution of the coastal and marine environment of the Isles of Scilly, commissioned by English Heritage's Historic Environment Enabling Programme. The project is being carried out by Historic Environment Projects, Cornwall Council, a team of experts from Aberystwyth, Cardiff, Exeter and Plymouth Universities and local marine archaeologists and enthusiasts from the Cornwall and Isles of Scilly Maritime Archaeological Society (CISMAS) and the Islands Maritime Archaeology Group (IMAG).
ECO3652	Event - Interpretation	St Agnes Island Hall Refurbishment and Extension, St Agnes, Isles of Scilly. In late March / early April 2012 Historic Environment Projects, Cornwall Council, for the Council of the Isles of Scilly, carried out an archaeological assessment of the proposed refurbishment and extension of the Island Hall at Lower Town, St Agnes (NGR SV 8785 0838) in order to understand the site and its potential for recording of archaeological remains.
ECO3358	Event - Interpretation	St Agnes, Scilly, electricity substation watching brief. Historic Environment Projects, Cornwall Council (HE Projects) were commissioned by Western Power to undertake a programme of archaeological recording ahead of the installation of a new electricity substation northeast of Periglis Cottage, St Agnes, Isles of Scilly (NGR SV 87786 83656). These investigations were required to satisfy a planning condition.

ECO5328	Event - Interpretation	Geoarchaeological Regional Review of Marine Deposits along the Coastline of Southern England. Coastal deposition has led to the accumulation of some of the thickest deposits of Holocene sediments in the British Isles. Often permanently waterlogged, these sediments provide ideal conditions for the preservation both of archaeological remains and palaeoenvironmental material. They therefore represent a geoarchaeological resource of the highest value and have been the source of some of the most exciting archaeological discoveries of recent times. This review aims to provide a synthesis of the location and nature of geoarchaeologically significant marine deposits around the southern English coastline and identify any areas where future work is needed.
ECO3320	Event - Survey	Islands in a Common Sea; Isles of Scilly Universities Project. This report presents the results of the first season of fieldwork undertaken in Scilly in September 2005 by the Islands in a Common Sea project; a partnership between the School of History and Archaeology, Cardiff University, the School of Conservation Studies (Archaeology and Historic Environment) (HISAR), Bournemouth University and Cornwall County Council's Historic Environment Service (Projects) (HES). Sites investigated or recorded in 2005 include: <ul style="list-style-type: none"> • a Bronze Age cairn exposed in the cliff edge at Pendrathen Bay, St Mary's; • an Iron Age/Romano-British cist grave cemetery at Lunnon Farm, St Mary's; • a drain at Tamarisk Farm, St Agnes; • Bronze Age cairns on Tinkler's Hill, St Martin's; and • a possible prehistoric settlement and field system at Round Bowl, St Martin's. In addition, a sample of submerged peat from the Crow Bar area off St Mary's, taken by local diver Todd Stevens, was sent for analysis.
ECO3169	Event - Intervention	St Agnes, Scilly, affordable housing phase 2. In May 2010 Historic Environment Projects, Cornwall Council (HE Projects) were commissioned by Cornwall Rural Housing Association Ltd to carry out archaeological recording to satisfy a planning condition for the development of a bungalow as part of an affordable housing development at Higher Town, St Agnes, Isles of Scilly (NGR SV88229 08241). The archaeological remains revealed on the site are evidently part of the south-western extent of Scheduled Monument 15456 'prehistoric to Romano-British field system and settlement at Higher Town, St Agnes', and associated with the remains found in 2009. Although the remains lie outside of the scheduled area they should be considered as of National Importance and it is recommended that there should be a further stage to assess the potential for further analysis and to produce an updated project design for full publication of the results of the archaeological investigation as an article in an academic journal.
ECO3127	Presentation	Isles of Scilly Booklet. This book provides an up-to-date summary of the archaeology and history of Scilly and brief descriptions of the best monuments to visit island by island.
ECO3116	Event - Interpretation	Isles of Scilly field boundaries feasibility study, desk study. This report describes the results of a desk-based study to inform future conservation management of field boundaries on the Isles of Scilly, carried out by Historic Environment Projects, Cornwall Council for the Isles of Scilly AONB Partnership in 2010.
ECO3105	Event - Intervention	St Agnes Scilly Affordable Housing. In September 2009 HE Projects were commissioned by Cornwall Rural Housing Association Ltd to carry out archaeological recording to satisfy a planning condition for the development of two new

		affordable houses at Higher Town, St Agnes, Isles of Scilly. The fieldwork established that the site contained a circular, stone-built structure (overlain by a cairn) and two other cairns. These structures are dated by associated pottery to the prehistoric period.
ECO2728	Event - Interpretation	Isles of Scilly Off Island Quay Refurbishment EIA. In total, seven quays would be refurbished. There were sites of cultural heritage importance close to Carn Near, Anneka's Quay, Church Quay, Higher Town and St. Agnes.
ECO2696	Event - Intervention	Off Island Quays, IoS. Between April and November 2007, the Historic Environment Service (Projects), Cornwall County Council undertook a programme of watching briefs during works associated with refurbishments to the quays on the off islands of Bryher, St Agnes and St Martin's in the Isles of Scilly, commissioned by the Duchy of Cornwall. The first watching brief, at Church Quay, Bryher, was carried out on 4 April 2007. A 2m wide trench was dug around the quay and backfilled when it had been observed and recorded. A second watching brief was undertaken in late May and early June 2007 during preparation of the contractor's compound near Kallimay Point on St Agnes. The following finds and features were identified: <ul style="list-style-type: none"> •Two Bronze Age urn bases placed in small pits; •Remains of a probable 19th century farm building; •Site of a concrete base for a late 1980s meteorological balloon
ECO2653	Event - Intervention	Troytown St Agnes, Ios. This report describes the results of a watching brief carried out by Katharine Sawyer for Mr and Mrs T Hicks at the site of a new three-bedroomed house (now known as Seaview House) north-east of the farmhouse at Troytown Farm, St Agnes, Isles of Scilly (NGR SV 8759 0840) in November 2006 and April 2007. No archaeological features were discovered during the course of the work and the only finds were unstratified post-1800 ceramics in the ploughsoil. The pit for the septic tank was in the area of a mid-20th century dump where quantities of plastic and glass had been deposited.
ECO2437	Event - Interpretation	Isles of Scilly Environmental Project. The artefacts described in detail in the main part of this report were collected from prehistoric (and later) sites exposed in the cliff face or intertidal zone around the Isles of Scilly. Most of this material was retrieved during 1989 to 1993 when Cornwall Archaeological Unit (CAU) was involved in the recording, sampling and monitoring of such sites as part of an English Heritage funded field project (Ratcliffe 1996). A few assemblages were collected before or after this project and/or by people other than CAU (amateur archaeologists, students, holidaymakers). Appendix 1 briefly lists artefacts from sites for which a full report has yet to be produced, and Appendix 2 describes material collected during the 1985 Isles of Scilly Electrification Project (Ratcliffe and Thorpe 1991) for which it may now be appropriate to ascribe a Neolithic date.
ECO2115	Event - Interpretation	St Agnes Coast Protection, IoS. An environmental assessment has been carried out to ensure that the proposed works are designed to create the least amount of environmental damage and, where possible, achieve environmental and social benefits. It comes to the conclusion that there would be no long-term ecologically adverse impact and that the impacts on the landscape would be either temporary or of negligible significance.
ECO2042	Event - Interpretation	Isles of Scilly Historic Landscape Assessment and Management Strategy.

ECO1842	Presentation	Isles of Scilly Environmental Report. Over a five year period from 1989 to 1993, with funding from English Heritage and in conjunction with the Ancient Monuments Laboratory (English Heritage) and Bristol University, Cornwall Archaeological Unit carried out a small-scale recording and sampling programme to assess the palaeoenvironmental potential of these early coastal sites. With the intertidal peat deposits the aim was to test their potential for enhancing understanding of the vegetational history of Scilly and as a means of testing and refining the current model for sea level change. For cliff face sites, the main aim was to assess their potential for yielding information on the subsistence economy and diet of the early inhabitants of the Islands, with particular emphasis being placed on sampling for plant macrofossils which, apart from charcoal, were virtually unknown for Scilly.
ECO1479	Event - Intervention	Geomorphology of the Isles of Scilly. The soils and geomorphology of the islands are described. The main soils of the islands are formed in granitic Head, loess (wind-blown silt) and blown sand. Most soils are podzolic and their nature reflects the parent material type whilst man has strongly influenced soil development via vegetation change and more directly by the addition of seaweeds and by deep and intensive cultivation.
ECO1300	Event - Interpretation	Isles of Scilly Rapid Coastal Zone Assessment. This report describes the results of a rapid coastal zone assessment (RCZA) of the Isles of Scilly carried out in 2003 and early 2004 by the Historic Environment Service, Cornwall County Council for English Heritage. The Isles of Scilly RCZA is an innovative project, being the first such assessment to be commissioned since the National Heritage Act (2002) enabled English Heritage to assume responsibility for all monuments on, in, or under the seabed within UK territorial waters around the coast of England. The aim of the project is to improve our knowledge and understanding of the submerged heritage by extending existing terrestrial, shoreline and intertidal assessments of the islands out to the 12 nautical mile limit in order to achieve integrated management of the whole of the historic environment in Scilly.
ECO1193	Event - Interpretation	Isles of Scilly Environmental Management Plan. This environmental management plan aims to provide the Isles of Scilly Environmental Trust (hereafter called 'the Trust') with an assessment of the land they lease. It suggests the management strategies which should be implemented to ensure the conservation and protection for the land for which the Trust has direct responsibility, as well as more general prescriptions for the rest of the Isles of Scilly for which the Trust has an advisory role. It is envisaged that the management plan will undergo an intermediate review in about two year's time, followed by a full review after five years have elapsed. These reviews will be carried out by persons and organisation conversant with the present position of the Scillonian environment.
ECO1118	Event - Survey	Isles of Scilly habitat and biotope. A survey of the Isles of Scilly, Cornwall, South-West England, was conducted between the 21st of September and the 22nd of October 1997. The aim of this survey was to map the extent of subtidal sediment habitats, differentiating between different biological components to the most detail possible, using a combination of Biomar lifeform and MNCR biotopes where possible.

ECO534	Curatorial Advice	Isles of Scilly Management, Sept 1989. During September 1989, the Cornwall Archaeological Unit (CAU) carried out four weeks fieldwork on the Isles of Scilly. This work was funded by English Heritage as part of the continued implementation of the Islands' Archaeological Management Plan (CAU 1988), and took place on Bryher, St Agnes, St Martin's, Samson and Tean. The work included: -recording and sampling remains exposed in the cliff and dune face -making detailed large scale plans of several important upstanding monuments -the recording and setting up of the statue menhir on Chapel Down, St Martin's -detailed plans and elevations of two historic buildings to which alterations were proposed
ECO513	Event - Interpretation	Isles of Scilly Management, March 1989. Archaeological recording was carried out from 6th - 11th March 1989 at two high priority sites on the islands of Samson and St Agnes. This work was funded by English Heritage and carried out by Cathy Parkes and Jeanette Ratcliffe from CAU and Helen Keeley, Paul Linford and David Jordan from the English Heritage Ancient Monuments Laboratory. In addition to the work carried out at the above cliff exposures, geophysical survey was conducted at Ennor Close, St Mary's, where a new housing development was about to take place on land below and just to the west of the remains of the Medieval Castle Ennor.
ECO4728	Event - Survey	Island Hall Extension. In May and June 2013 Historic Environment Projects, Cornwall Council (HE Projects) undertook a programme of archaeological mitigation for the Council of the Isles of Scilly and the Island Hall Committee in order to satisfy a planning condition for the refurbishment and extension of the Island Hall, St Agnes NGR SV 8785 0838. The mitigation took the form of evaluation trenching and a building record of the Island Hall prior to the start of works (May 2012), and a watching brief during the construction phase (June 2013).
ECO538	Maintenance	Isles of Scilly Management, 1993-1994. During the fifth and final year of work arising out of the archaeological management plan for Scilly, coastal monitoring was undertaken at 23 key cliff, beach and intertidal sites around Scilly's present coastline. Environmental sampling was undertaken at cliff-face sites below Bonfire Carn and at Shipman Head on Bryher. Capital management works were undertaken to improve access and interpretation at St Elidus' Hermitage, St Helen's.
ECO784	Event - Intervention	Isles of Scilly Electrification. The aim of this report is to present the results of the archaeological watching brief which accompanied the electrification of the outer islands of Scilly during 1985. Several thousand artefacts were collected during the seven-month project, including substantial quantities of flint, pottery, bone and clay pipe.
ECO957	Curatorial Advice	Isles of Scilly Management. The aims of the project are: - to describe the character, distribution and importance of identifiable archaeological and historical sites, monuments and landscapes on the Isles of Scilly - to assess existing access to, and protection, management, interpretation and presentation, of these remains - to make recommendation as to future access to, and protection, management, interpretation and presentation of, these remains - to make recommendations regarding future archaeological work in Scilly
ECO5154	Event - Interpretation	Annet Farm. Oxford Archaeology (OA) have been commissioned by Mr Legg to undertake an archaeological assessment, and targeted scrub and bracken management plan for an area within the Scheduled Monument known as Prehistoric to

		Romano-British field system and settlement at Higher Town, St Agnes (Monument number 15456). For the assessment, OA consulted the Scheduling document for the monument and the 1st Edition Ordnance Survey map, undertook analysis of LiDAR data and carried out a site walkover survey to assess the visible resource within the monument that lies within the holding.
ECO5155	Event - Interpretation	Lighthouse Farm. Oxford Archaeology (OA) have been commissioned by Mr Hicks to undertake an archaeological assessment, and targeted scrub and bracken management plan for two areas within his holding. The first, Area A (A1 and A2) lies within a Site of Special Scientific Interest (SSSI), the second, Area B, within the Scheduled Monument known as Prehistoric settlement and field system at Porth Killier, St Agnes (15450).
ECO5248	Event - Interpretation	Isles of Scilly Historic Environment Research Framework. The first two stages of the Scilly Historic Environment Research Framework (SHERF), the Resource Assessment and Research Agenda, were completed in December 2012. SHERF was funded by English Heritage (now Historic England) with contributions from the Isles of Scilly AONB Unit, the Council of the Isles of Scilly and the Duchy of Cornwall and had as its aim the provision of a structure in which to make decisions about future historic environment research in the Islands.
ECO5451	Event - Interpretation	Isles of Scilly. The Isles of Scilly comprise over 150 granite islands scattered across 200sq km, set out in the Atlantic some 40km south-west of Land's End. Of these islands, only about 50 support vegetation and only five - St Mary's, St Agnes, St Martin's, Tresco and Bryher - are currently inhabited, covering a total area of just over 14sq km. The islands display a striking diversity of landscapes, some very ancient, including lowland heath, small pastures enclosed by stone walls and banks, tiny hedged bulb fields and a varied coastline. The richness of the archaeology and landscape is reflected in a very high density of designations; 129 listed buildings, over 250 scheduled monuments, some 900 identified historic assets in total, the entire Character Area is designated as an Area of Outstanding Natural Beauty (AONB), Heritage Coast, Conservation Area and Special Area of Conservation. The urban area is limited to the small town of Hugh Town on St Mary's, and woodland cover is minimal (although the thick shelter-belts and hedges have significant landscape impact in specific areas).

A.3 St Martin's

A.3.1 Designated Assets

Site ID	Type	Description
1013810	Scheduled Monument	Post-medieval kelp pit on the western coast of Tinkler's Hill, St Martin's. The monument includes a post-medieval kelp burning pit situated on the coastal margin at the foot of the western slope of Tinkler's Hill, on western St Martin's in the Isles of Scilly. The kelp pit is visible as a rounded hollow, shaped as an inverted bowl, measuring 1.5m east-west by 1.4m north-south and up to 0.5m deep.

1016178	Scheduled Monument	Prehistoric cairn group on great hill, Tean. The scheduling includes a group of three prehistoric funerary cairns located on the summit and south east spur of Great Hill on Tean, a small uninhabited island in the north of the Isles of Scilly.
1016179	Scheduled Monument	Prehistoric cairns, prehistoric to post-medieval settlements & field systems, an early Christian focus, post-medieval kelp pits & quay on Tean and old man. The scheduling includes a succession of settlement, funerary, religious and industrial remains ranging from prehistoric to post-medieval in date and encompassing much of the uninhabited islands of Tean and Old Man, with parts of their inter-tidal shores, in the north of the Isles of Scilly.
1018109	Scheduled Monument	Prehistoric cairn cemetery and field system on Tinkler's Hill, St Martin's. The monument includes a prehistoric cairn cemetery and field system on the plateau and upper southern slope of Tinkler's Hill in the west of St Martin's in the Isles of Scilly. On one of the cemetery's cairns are remains of a much later, post-medieval, maritime lookout. This scheduling is divided into two separate areas.
1018111	Scheduled Monument	Prehistoric cairn cemetery, field system and settlements on top rock hill, St Martin's. The monument includes a prehistoric cairn cemetery and field system on the ridge and flanks of Top Rock Hill, the north western headland of St Martin's in the Isles of Scilly. The scheduling also includes prehistoric settlements behind the headland's east coast and a hut circle on its southern plateau.
1141203	Listed Building Grade II	Ashvale Farmhouse: A mid-19 th century farmhouse incorporating an older former dwelling. The building is constructed of granite rubble with a 20 th century slate and pantile roof.
Isles of Scilly	Conservation Area	The entirety of the Isles of Scilly is designated as a Conservation Area. The landscape at St Martin's comprises small fields enclosed by hedgerows and the three settlements of Lower Town, Middle Town and Higher Town. The southern side of the Island is more sheltered in character compared to the rugged north, and features two distinctive curved beaches, Lawrence's Bay and Par Beach.

A.3.2 Non-designated Assets

Site ID	Type	Period	Description
MCO30232	MON	Post Medieval	A granite well with two sets of 14 steps leading down to it.
MCO30810	FS	Prehistoric	A flint scraper found in the roots of an up-turned tree after a winter gale in 1979.
MCO30811	MON	Post Medieval	A stone-lined well, visible on the surface as a square setting of granite slabs with granite lintels.
MCO30812	MON	Prehistoric	A concentration of flints recovered from fields at Lower Town during SWEB trenching.
MCO30813	MON	Post Medieval	A group of four kelp pits eroding out of the dune face south west of Lower Town.
MCO30814	MON	Early Medieval / Medieval	The site of a 10th-16th century settlement indicated by the discovery of a midden, a grave and pottery on the south side of Lower Town.

MCO30815	MON	Early Medieval / Medieval	A rich early medieval midden and a small concentration of 10th-16th century pottery, found during SWEB trenching in 1992.
MCO30816	MON	Early Medieval	An early Christian grave uncovered by the south side of the road at Lower Town during trenching in 1992.
MCO30817	FS	Prehistoric	A small assemblage of late Bronze Age / early Iron Age artefacts, found during trenching work in 1993.
MCO30860	FS	Prehistoric	A flint scraper and a flake were found in the rab layer within the cliff face at Neck of the Pool.
MCO30861	FS	Prehistoric	A possible flint awl found on the surface of the beach in the intertidal zone at Neck of the Pool in 1991.
MCO31097	MON	Medieval	The L-shaped lowest surviving course of a ruined quay recorded on the 1888 OS map.
MCO31098	MON	Prehistoric	Remains of three huts on the beach found in 1978.
MCO31099	FS	Post Medieval	Post-medieval pot sherds, bottle glass and clay pipe fragments, found in the cliff face.
MCO31100	MON	Post Medieval	Remains of a boathouse 10m long and 3.0m wide.
MCO31101	MON	Post Medieval	The remains of a building which is probably a boathouse, recorded by Tangye in 1987.
MCO31463	FS	Prehistoric	Worked flints, including tools and cores, collected from trenches dug by SWEB during 1985.
MCO31597	MON	Post Medieval	Old photographs show boathouses (gig sheds) at The Porth; there are now no remains.
MCO31598	MON	Post Medieval	A ruined quay, revealed after sand shifted during the severe storms of January 1990.
MCO41918	MON	Early Medieval	The remains of a small structure, approx 16m by 8.0m and partially submerged, are visible on aerial photos.
MCO41919	MON	Early Medieval	Stone field walls are visible on aerial photographs and were plotted as part of the NMP.
MCO31611	MON	Prehistoric	A group of seven cairns recorded as tumuli on the 1908 OS map.

A.3.3 Events

Site ID	Type	Description
ECO1118	Event - Survey	Isles of Scilly habitat and biotope. A survey of the Isles of Scilly, Cornwall, South-West England, was conducted between the 21st of September and the 22nd of October 1997. The aim of this survey was to map the extent of subtidal sediment habitats, differentiating between different biological components to the most detail possible, using a combination of Biomar lifeform and MNCR biotopes where possible.
ECO1193	Event - Interpretation	Isles of Scilly Environmental Management Plan. This environmental management plan aims to provide the Isles of Scilly Environmental Trust (hereafter called 'the Trust') with an assessment of the land they lease. It suggests the management strategies which should be implemented to ensure the conservation and protection for the land for which the Trust has direct responsibility, as well as more general prescriptions for the rest of the Isles of Scilly for which the Trust has an

		advisory role. It is envisaged that the management plan will undergo an intermediate review in about two year's time, followed by a full review after five years have elapsed. These reviews will be carried out by persons and organisation conversant with the present position of the Scillonian environment.
ECO1300	Event - Interpretation	Isles of Scilly Rapid Coastal Zone Assessment. This report describes the results of a rapid coastal zone assessment (RCZA) of the Isles of Scilly carried out in 2003 and early 2004 by the Historic Environment Service, Cornwall County Council for English Heritage. The Isles of Scilly RCZA is an innovative project, being the first such assessment to be commissioned since the National Heritage Act (2002) enabled English Heritage to assume responsibility for all monuments on, in, or under the seabed within UK territorial waters around the coast of England. The aim of the project is to improve our knowledge and understanding of the submerged heritage by extending existing terrestrial, shoreline and intertidal assessments of the islands out to the 12 nautical mile limit in order to achieve integrated management of the whole of the historic environment in Scilly.
ECO1479	Event - Intervention	Geomorphology of the Isles of Scilly. The soils and geomorphology of the islands are described. The main soils of the islands are formed in granitic Head, loess (wind-blown silt) and blown sand. Most soils are podzolic and their nature reflects the parent material type whilst man has strongly influenced soil development via vegetation change and more directly by the addition of seaweeds and by deep and intensive cultivation
ECO183	Event - Intervention	St. Martin's Boreholes. A watching brief was carried out in the grounds of St Martin's Hotel.
ECO1832	Event - Intervention	St. Martin's Hotel. A watching brief maintained on a trench dug above St Martin's Lower Town, connecting the hotel water storage tanks with a borehole to the east, revealed only a handful of prehistoric potsherds of a style dating to 1000-1500 BC. One of the sherds appears to contain inclusions of grog, a feature not noted before in early Scillonian pottery.
ECO1842	Presentation	Isles of Scilly Environmental Report. Over a five year period from 1989 to 1993, with funding from English Heritage and in conjunction with the Ancient Monuments Laboratory (English Heritage) and Bristol University, Cornwall Archaeological Unit carried out a small-scale recording and sampling programme to assess the palaeoenvironmental potential of these early coastal sites. With the intertidal peat deposits the aim was to test their potential for enhancing understanding of the vegetational history of Scilly and as a means of testing and refining the current model for sea level change. For cliff face sites, the main aim was to assess their potential for yielding information on the subsistence economy and diet of the early inhabitants of the Islands, with particular emphasis being placed on sampling for plant macrofossils which, apart from charcoal, were virtually unknown for Scilly.
ECO2042	Event - Interpretation	Isles of Scilly Historic Landscape Assessment and Management Strategy. This report results from a study undertaken to assess the landscape of the Isles of Scilly with particular reference to the enclosed agricultural land, and, based on this, the preparation of a strategy to guide its future management. The study was commissioned by the Duchy of Cornwall in partnership with the Countryside Commission. The management strategy is intended to provide guidance for MAFF in the implementation of the Countryside Stewardship Scheme. (the Scheme transfers to MAFF from the Countryside Commission on 1st April 1996).

ECO2434	Event - Interpretation	St Martin's Hotel, IoS. A few potsherds dating probably to the early first millennium BC and some pebble flints worked in the tradition of the second millennium were identified
ECO3116	Event - Interpretation	Isles of Scilly field boundaries feasibility study, desk study. This report describes the results of a pilot project to map and assess the field boundaries on the Isles of Scilly in order to inform future management for conservation, carried out by Historic Environment Projects, Cornwall Council, for the Isles of Scilly Area of Outstanding Natural Beauty (AONB) Partnership in 2011.
ECO3127	Presentation	Isles of Scilly Booklet. This book provides an up-to-date summary of the archaeology and history of Scilly and brief descriptions of the best monuments to visit island by island
ECO3320	Event - Survey	<p>Islands in a Common Sea; Isles of Scilly Universities Project. This report presents the results of the first season of fieldwork undertaken in Scilly in September 2005 by the Islands in a Common Sea project; a partnership between the School of History and Archaeology, Cardiff University, the School of Conservation Studies (Archaeology and Historic Environment) (HISAR), Bournemouth University and Cornwall County Council's Historic Environment Service (Projects) (HES).</p> <p>Sites investigated or recorded in 2005 include:</p> <ul style="list-style-type: none"> • a Bronze Age cairn exposed in the cliff edge at Pendrathen Bay, St Mary's; • an Iron Age/Romano-British cist grave cemetery at Lunnon Farm, St Mary's; • a drain at Tamarisk Farm, St Agnes; • Bronze Age cairns on Tinkler's Hill, St Martin's; and • a possible prehistoric settlement and field system at Round Bowl, St Martin's. <p>In addition, a sample of submerged peat from the Crow Bar area off St Mary's, taken by local diver Todd Stevens, was sent for analysis.</p>
ECO3682	Event - Survey	The Lyonesse Project. This report describes the results of Year 1 of the Lyonesse Project, 2-year project to study of the evolution of the coastal and marine environment of the Isles of Scilly, commissioned by English Heritage's Historic Environment Enabling Programme. The project is being carried out by Historic Environment Projects, Cornwall Council, a team of experts from Aberystwyth, Cardiff, Exeter and Plymouth Universities and local marine archaeologists and enthusiasts from the Cornwall and Isles of Scilly Maritime Archaeological Society (CISMAS) and the Islands Maritime Archaeology Group (IMAG).
ECO3784	Event - Interpretation	Isles of Scilly Historic Environment Research Framework. Preparation of a Research Framework for the Historic Environment of the Isles of Scilly. This project comprises the first two stages Resource Assessment and Research Agenda. It is envisaged that the third stage, the Research Strategy, will follow on as separate project.
ECO3819	Event - Survey	Isles of Scilly: Military Defences, 1540-1951. Many of the remains of military defence works on the Isles of Scilly are vulnerable to coastal erosion. These works date from the 16th to the 20th centuries and form a unique and comprehensive collection of forts, redoubts, batteries, breastworks and strong points as well as communications structures. Many of them are unfinished works, reflecting a succession of 'stop-go' policies for defending the islands. Comprehensive archaeological survey of these works on all the main islands was undertaken between 2008 and 2010, following more geographically restricted investigation and excavation of the Garrison, St Mary's in 2005-6. This report summarises the works on the

		earthworks and minor features, complementing work on the architectural remains of the Garrison reported in RDRS 39-2011
ECO4104	Event - Survey	Lyonesse Project. The Lyonesse Project aimed to reconstruct the evolution of the physical environment of the Isles of Scilly during the Holocene, the progressive occupation of this changing coastal landscape by early peoples and their response to marine inundation and changing marine resource availability.
ECO4195	Event - Interpretation	Isles of Scilly: Optically Stimulated Luminescence Dating of Coastal and Intertidal Sediments: Scientific Dating Report. This report presents the findings of a study using optically stimulated luminescence (OSL) dating undertaken at Aberystwyth University to determine the ages of coastal and intertidal sediments from the Isles of Scilly, undertaken as part of the larger Lyonesse Project commissioned by English Heritage's Historic Environment Enabling Programme (HES project number 2009029), and lead by Charles Johns, Historic Environment Projects, Cornwall Council.
ECO536	Maintenance	Isles of Scilly Management, Autumn 1990. An intensive and varied programme of fieldwork was undertaken in the Isles of Scilly during September and October 1990 as part of a rolling programme of survey and recording under the provisions of an archaeological management plan. Detailed surveys were undertaken of a Napoleonic signal station on St Martin's and an early Christian cist grave cemetery on Tresco; specialist recording was undertaken of a Roman altar and 6th century inscribed stone in Tresco Abbey Gardens; intertidal peat deposits were sampled at Par Beach, St Martin's and Crab's Ledge, Tresco; practical management work was undertaken at Oliver's Battery, Tresco; monitoring of coastal erosion was undertaken; and detailed recording was carried out at a number of cliff face sites on St Martin's, Tresco and Samson.
ECO784	Event - Intervention	Isles of Scilly Electrification. The aim of this report is to present the results of the archaeological watching brief which accompanied the electrification of the outer islands of Scilly during 1985. Several thousand artefacts were collected during the seven-month project, including substantial quantities of flint, pottery, bone and clay pipe.
ECO957	Curatorial Advice	Isles of Scilly Management. The aims of the project are: - to describe the character, distribution and importance of identifiable archaeological and historical sites, monuments and landscapes on the Isles of Scilly - to assess existing access to, and protection, management, interpretation and presentation, of these remains - to make recommendation as to future access to, and protection, management, interpretation and presentation of, these remains - to make recommendations regarding future archaeological work in Scilly
ECO5212	Event - Survey	Packing Shed and Glasshouse. In August 2018, Cornwall Archaeological unit carried out a historic building record prior to the conversion of a flower packing shed and glasshouse located at Lower Town, St Martin's, Isles of Scilly . The packing shed is of two storey construction built with coursed granite rubble and with a pitched roof of corrugated sheet.
ECO5248	Event - Interpretation	Isles of Scilly Historic Environment Research Framework. The first two stages of the Scilly Historic Environment Research Framework (SHERF), the Resource Assessment and Research Agenda, were completed in December 2012. SHERF was funded by English Heritage (now Historic England) with contributions from the Isles of Scilly AONB Unit, the Council of the Isles of Scilly and the Duchy of Cornwall and had as its aim the provision of a structure in which to make decisions about future historic environment research in the Islands.

ECO5328	Event - Interpretation	Geoarchaeological Regional Review of Marine Deposits along the Coastline of Southern England. Coastal deposition has led to the accumulation of some of the thickest deposits of Holocene sediments in the British Isles. Often permanently waterlogged, these sediments provide ideal conditions for the preservation both of archaeological remains and palaeoenvironmental material.
ECO5451	Event - Interpretation	Isles of Scilly. The Isles of Scilly comprise over 150 granite islands scattered across 200sq km, set out in the Atlantic some 40km south-west of Land's End. Of these islands, only about 50 support vegetation and only five - St Mary's, St Agnes, St Martin's, Treco and Bryher - are currently inhabited, covering a total area of just over 14sq km. The islands display a striking diversity of landscapes, some very ancient, including lowland heath, small pastures enclosed by stone walls and banks, tiny hedged bulb fields and a varied coastline. The richness of the archaeology and landscape is reflected in a very high density of designations; 129 listed buildings, over 250 scheduled monuments, some 900 identified historic assets in total, the entire Character Area is designated as an Area of Outstanding Natural Beauty (AONB), Heritage Coast, Conservation Area and Special Area of Conservation. The urban area is limited to the small town of Hugh Town on St Mary's, and woodland cover is minimal (although the thick shelter-belts and hedges have significant landscape impact in specific areas).
ECO2089	Event - Intervention	Site Adjacent to Appletree cottage, St Martin's, Isles of Scilly. The area had been disturbed when a glasshouse was constructed in the late 19th or early 20th century and the finds appeared to be associated with this structure.
ECO5051	Event - Intervention	Extension to Sevenstones Inn. A watching brief was carried out at the site of an extension to the Sevenstones Inn on a terrace cut into a steep hillslope. There were no structures, features or finds of archaeological significance.

Appendix 7.3 - Site Visit Photographs

A.1 Bryher



Photograph 1: View looking south-east at Kitchen Porth site



Photograph 2: Piled stones with site, likely of modern date



Photograph 3: View looking north-east towards Cromwell's Castle and St James' Castle



Photograph 4: View of the Quay looking south



Photograph 5: View looking south along the Green Bay Site



Photograph 6: View looking north west at Great Par site. Concrete slipway can be seen in the foreground.



Photograph 7: The Scheduled Monument post-medieval boathouse (1016173).



Photograph 8: View looking north across the Stinking Porth Site



Photograph 9: View looking east across Popplestones site showing current rock armour and concrete sea wall



Photograph 10: View looking north east at the rock recovery area at Popplestones



Photograph 11: Scheduled Monument Prehistoric field system and Romano-British cist in Green Bay (1014989) showing stone row



Photograph 12: Grade II listed Church of All Saints (1141234)



Photograph 13: Vehicle movement along the track to the rear of the scheduled boat house will not impact on structural remains

A.2 St Agnes



Photograph 14: Quay on St Agnes



Photograph 15: Non-designated post-medieval slipway (MCO31736) proposed as a secondary access route on to the island.



Photograph 16: Proposed forward working area



Photograph 17: Access route to Porth Killier from the quay and forward working area



Photograph 18: Area of erosion at Porth Killier where the 'fan-shaped' rock armour is proposed



Photograph 19: View of Porth Killier looking south west



Photograph 20: View looking south east at the Porth Coose site



Photograph 21: Area of exposed concrete sea wall (MCO64519)



Photograph 22: View of the Grade II* listed St Agnes Lighthouse (1328835)



Photograph 23: View looking south-east across Periglis



Photograph 24: Exposed geobags due to erosion of the bank



Photograph 25: Grade II listed St Agnes church (1141238)

A.3 St Martin's



Photograph 26: View of the quay on St Martin's



Photograph 27: View of the proposed location of the alternate landing point at Lower Town Beach on St Martin's



Photograph 28: Grade II Listed Ashvale Farmhouse (1141203)



Photograph 29: View of access track and ramp leading down to the site.



Photograph 30: View looking north at the St Martin's Site

Appendices 6A to 6C: Landscape and Visual Appendices

6A Figures

Figures 6.1a-c	The Site and Study Area, Bryher, St. Agnes and St. Martin's
Figures 6.2a-c	Landscape Character Types, 1996 Historic Landscape Character Assessment (Land Use Consultants)
Figures 6.2d-f	Landscape Character Types, 2006 Design Guide and 2015 Consultation Draft Conservation Area Character Statement
Figures 6.3a-c	Topography, access and locations of context photographs
Figures 6.4.1-6.4.28	Viewpoint photographs

Appendices
6B Photographs illustrating landscape context



Photograph 1 (Bryher): relationship between Bryher and Tresco at Kitchen Porth on Bryher



Photograph 2 (Bryher): low-lying coastal topography at Great Pool



Photograph 3 (Bryher): irregular rocky headlands, beaches with sand and natural cobbles



Photograph 4 (Bryher): introduced species dominating vegetation



Photograph 5 (Bryher): bulb strips arranged around settlements



Photograph 6 (Bryher): building materials compounds



Photograph 7 (St. Agnes): undulating hillscape falling to rocky coastal bays



Photograph 8 (St. Agnes): low-lying marsh, pool and dunes



Photograph 9 (St. Agnes): rocky coastal margin



Photograph 12 (St. Martin's): extensive, gradually sloping intertidal areas



Photograph 13: vegetation dominated by introduced species



Photograph 14: buildings of mixed styles and materials



Photographs illustrating landscape change

Photograph 15: displaced rock and soil revealing concrete face of Great Popplestone coastal defences



Photograph 16: desire line paths across dunes on St Agnes



Photograph 17: trees likely to be removed at Porth Killier on St Agnes



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