

Scott's Quay

Constantine, Cornwall.

Archaeological, Ecological and Structural
Assessment.

Project No: AC12007E

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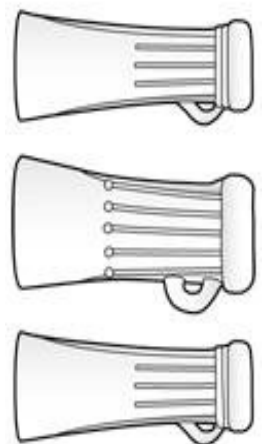
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The views and recommendations expressed in this report are those of Archaeological Consultancy Ltd and are presented in good faith on the basis of professional judgement and on information currently available.

Cover illustration

Scott's Quay looking east. The relatively large granite blocks of the Lower Quay stretch across the foreshore (right) with the best preserved section of the 1930s re-built Upper Quay and its slate foundation course (centre). Some of the principal recreational uses of the Quay are represented here, namely: boating, fishing and the wider appreciation of the tranquil landscape and its associated wildlife and archaeology.

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Abbreviations

AC	Archaeological Consultancy Ltd
ADS	Archaeological Data Services
AGSV	Area of Great Scientific Value
AONB	Area of Outstanding Natural Beauty
BGS	British Geological Society
CAU	Cornwall Archaeological Unit (now the HES)
CEC	Cornwall Environmental Consultants Ltd
CBA	Council for British Archaeology
CCC	Cornwall County Council
CRO	Cornwall Record Office
CWS	County Wildlife Site
EH	English Heritage
EU	European Union
GIS	Geographical Information System
HER	Cornwall and the Isles of Scilly Historic Environment Record
HES	Historic Environment Service, Cornwall Council
HLC	Historic Landscape Characterisation
NE	Natural England
NGR	National Grid Reference
NMP	National Mapping Programme
NMR	National Monuments Record, Swindon
OS	Ordnance Survey
PRN	Primary Record Number in Cornwall HER
PRO	Public Record Office
RCM	Royal Cornwall Museum, Truro
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest

1 Summary

AC was commissioned by Charles Pugh to undertake an archaeological, ecological and structural assessment of Scott's Quay in advance of proposed consolidation works to the Upper Quay. A brief setting out the requirements of the assessment was provided by Natural England (NE) and The Historic Environment Service, Cornwall Council (HES), reflecting the ecological and archaeological sensitivity of the site and its inclusion in the Goongillings Farm Higher Stewardship Scheme holding. This site is designated as part of the Cornwall Area of Outstanding Natural Beauty (AONB), an Area of Great Scientific Value (AGSV), part of the Calamansack Wood to Gweek County Wildlife Site (CWS) and lies immediately beside the Lower Fal and Helford Intertidal Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).

Scott's Quay is at the southern tip of Goongillings Farm (SW 7379 2728) at the convergence of the Polpenwith and Polwheveral Creeks, in the upper reaches of the Helford Estuary.

The assessment was undertaken between January and August 2012, it recorded:

- The access track leading from Goongillings Farm to the Quay, built in the early 19th century by Charles Scott
- The Lower Quay also built in the early 19th century by Charles Scott to service the booming local mining and quarrying industries
- Two quarries associated with the construction of the early 19th century Quay
- The Upper Quay built by the early 20th century and significantly re-built in the 1930s
- The intertidal and terrestrial habitats that the Upper Quay forms the boundary between
- Associated flora and fauna and related legislative constraints
- The structural failing of significant parts of the Upper Quay structure due to: its lack of foundations and resultant erosion; poor repairs with vertical facing, no running bond and unsuitable backfill material; and vandalism.

The assessment recommends the procurement of an estimate for limited consolidation works to maximise the longevity and appreciation of the Quay without reducing the historic integrity of the structure or incurring major additional planning considerations and costs. Details of the specific archaeological, ecological and structural management recommendations, timings and guide costings are provided in the report.

2 Introduction

2.1 Project Background

Archaeological Consultancy Limited (AC) were commissioned by Charles Pugh, to undertake an archaeological, ecological and structural assessment to provide recommendations for the proposed consolidation of Scott's Quay. The assessment methodology was drawn up in accordance with a brief provided by Joy Ede (Natural England) and Ann Reynolds (Senior Archaeologist, Countryside Advice, Historic Environment Service, Cornwall Council), in line with the Higher Level Stewardship Scheme (Agreement Number AG00315681).

2.2 Site Location

The site is located 2 kilometres south-southeast of Constantine at Scott's Quay (OS grid reference SW 7379 2728).

2.3 Topography

The Quay lies at the southern terminus of a promontory where the Polpenwith and Polwheveral creeks converge to join the Helford to the south.

2.4 Geology

The bedrock is recorded as Mylor Slate Formation - Slate and Siltstone (British Geological Survey). This sedimentary bedrock formed approximately 354 to 370 million years ago in the Devonian Period, when the local environment was dominated by open seas with pelagite deposits. Superficial deposits include Tidal Flat Deposits - Gravel, Sand And Silt. The superficial deposits were formed up to 2 million years ago in the Quaternary Period (British Geological Survey).

The superficial deposits were found to overlie compact boulder clay beneath the Upper Quay. The slate bedrock was obvious in the quarries (see below) and forming a low cliff along the beach either side of the Upper Quay.

2.5 Archaeological and Historical Background

The relatively sheltered landscape and waterways around the Helford are likely to have been used from at least the Mesolithic period with settlement from the Neolithic period onwards.

Three probably Bronze Age barrows have been identified from aerial photographs in Merthen Wood overlooking the Helford (MC049932-4; Reynolds, 2000; 4). Barrows commonly dominate the hilltops and routeways, with many apparently focusing on important waterways such as the Helford. Barrows were visual territorial markers staking a claim on the landscape suggesting contemporary settlement within the area.

Three sub-circular cropmark enclosures, 8.0m in diameter, visible on aerial photographs at Calamansack (MC049985), may be additional barrows on the other side of the creek.

Cornwall was well settled by the late Iron Age and there are two rounds at Goongillings (MCO49912 and MCO14574) with additional rounds at Polpenwith (MC08379) and Calamansack (MCO49987 and MCO820; Reynolds, 2000; 4).

Each round is likely to have been associated with a field system, typically of small sub-rectangular or irregular fields with small hillforts slightly further afield.

A Romano-British camp and associated field system at Merthen (MCO21701) is likely to have developed existing field systems as well as exploiting the sheltered waterways of the Helford estuary.

The placenames of the surrounding settlements demonstrate early medieval origins and Merthen Wood is thought to be referred to in the Domesday book-part of the manor of Winnianton (Padel, 1988; Holmes 1998; Morris (ed) 1979). Merthen also notably included a substantial deer park, created according to Henderson by 1500 (MCO26332).

Much of the following account of the Quay is taken from Charles and Barbara Pugh's useful 'Scott's Quay. Some historical notes for visitors.'

Scott's Quay was built in the early 1800s by Charles Scott who owned the manor of Trewadrega and with it much of the farmland, the local mines and most of Constantine. The Quay was constructed to create opportunities to move minerals and stone from the mines and quarries away from Cornwall via the system of 'merchant schooners' which were important in coastal transport. As well as exporting minerals, the boats could bring in coal, timber, lime, salt and other such materials for use in the local economy. A hard road was also built from behind Constantine to allow horses and carts to carry the materials to and from the Quay. Scotts Wood - with its beech trees, oak, ash and sweet chestnut, was planted around that time as estate woodland.

The early 19th century Quay reached further out into the creek than the Upper Quay, with the deep water channel passing next to it. Remnants of the early 'Lower' Quay are still visible approximately 15m further out as the tide falls.

The Trewadrega and other Estates were put up for auction in 1855, including Goongillings. The West Briton records (West Briton 1-6-1855):

Some of the Granite Quarries are in a regular course of working; and the Tenement of Goon-Gillin is believed to abound with lodes of Iron and Copper.

Evidence of a number of mine workings, broadly excavated from west to east into the hillside are still apparent along with associated finger dumps and a leat system to the northwest of Scott's Quay.

Whilst the Tithe map for Constantine (c1842) is too fragmentary to examine, the 1879 Ordnance Survey map clearly shows Scott's Quay as a blunt ended triangular projection stretching out to meet the deep water channel of Polwheveral Creek. Two concave cuts into the low cliff are shown either side of the Quay where slate was obviously quarried to construct the Quay walling.

The estate passed into the hands of Trelowarren during the 19th century and the Vyvyans developed the mines - notably Wheal Vyvyan a significant copper mine in Constantine.

The coming of railways in the mid 19th century put pressure on the schooner trade, whilst facilities at Port Navas were better suited than Scott's Quay. With

the decline of mining the Quay fell into disrepair by the start of the 20th century. Manpower shortages during and after the First World War additionally undermined the economic viability of many of the quarries. The Trelowarren lands began to be sold off as times got hard.

Early 20th century photographs record a visit to the Quay by two ladies and a young girl as well as the photographer (Plate 1, Plate 2, Plate 4 and Plate 5). These images apparently show some repairs in progress on the early Quay, with a man beside a small pile of roughly dressed probable granite blocks. At least one rowing boat is moored to the Quay with a second boat pulled up on the foreshore beside the Quay. The structure is in considerable disrepair. The early Quay appears to have been made of the local slate with substantial dressed granite coping stones, though by this time, just two of the coping stones appear in place on the east side of the Quay visible in the photographs. Collapse of the walling onto the foreshore below had allowed considerable erosion of the infill soils behind. At this stage the northern part of the Quay has a relatively level grass surface, which may have been grazed. To the south where the repairs are taking place the surface of the Quay is lower and stoney material is exposed where high water obviously covers the surface of the Quay.

In the 1930s Goongillings, with the Quay, was bought by Mrs Alice Hext of Trebah who accumulated many attractive bits of land in the area. She arranged for the derelict old Quay to be rebuilt in its present form (Pugh). She also created the public right of access down the original track (which up till then was purely a private commercial track) to allow access to the creek frontage for the local people. Interestingly, the right of way is only to reach the foreshore - the Quay always remained private. Mrs Hext had the stone stiles built to make the walk to the River easy and appealing, and she signed a covenant with the National Trust in 1938 to prevent adverse development or spoiling of Goongillings, though this notably excluded Scott's Quay.

Captain Dick Pugh bought Goongillings Farm in 1954 as a place to farm, to semi-retire, keep a boat, fly his plane, and bring up his family who continue to manage the farm.

2.6 Project Aims

The project aims to:

- to archaeologically record the Quay wall
- to identify and evaluate the wildlife value of the Quay
- to assess the feasibility and extent of required consolidation
- to provide a specification of the work required taking identified environmental factors into consideration
- to project manage the consolidation works and associated archaeological recording
- to identify future management requirements and management priorities

2.7 Methodology

The detailed methodology is set out in Appendix 2. In summary it includes:

- A wildlife survey including a walk-over, desk based study and report.

- Archaeological recording including a desk based assessment, walk-over, photographic survey, plan and elevation drawings and test trenching.
- A structural survey to examine the archaeological test trenches, defects, remedies and feasibility of repair. Written statements of significance and guiding principles for management.

3 Results

The ecological results are described in Appendix 4, whilst the Structural results are reported in Appendix 5.

3.1 Walk-over survey

The walk-over survey recorded the following sites along the access track and in the vicinity of Scott's Quay. The identified sites are located on Figure 2 and Figure 3.

Site No.	Name	NGR (SW)	Description	1879 map	1907 map	Condition	Significance / Sensitivity Value
1	Goongillings Farmyard	73449 28294	Collection of barns and agricultural buildings arranged around a courtyard.	✓	✓	4	C / Low
2	Gateway	73489 28256	Gate accessing Goongillings Farmyard (Site 1) through boundary with field 1.	✓	✓	4	C / Low
3	Trackway MCO34466	73489 28256 to 73568 28173	SMR citation: "A well built trackway links Scotts Quay with Constantine and the granite quarries to the north. It is probably contemporary with the construction of the Quay and is now used as a public right of way." Trackway through fields 1 and 2 reportedly built by Charles Scott in the early 19 th Century.	✓	✓	4	C / Low
4	Gateway	73568 28173	Gateway through boundary between fields 1 and 2.	✓	✓	4	C / Low
5	Gateway	73627 28094	Gateway through boundary between fields 2 and 3.	✓	✓	4	C / Low
6	Trackway MCO34466	73568 28173 to 73728 27759	SMR citation: "A well built trackway links Scotts Quay with Constantine and the granite quarries to the north. It is probably contemporary with the construction of the Quay and is now used as a public right of way." Trackway continues through fields 3 and 4.	✓	✓	4	C / Low
7	Aircraft Hanger	73673 27943	1950s hanger for a light aircraft.	X	X	4	C / Low
8	Concrete Surface	73726 27766	Concrete surface.	X	X	4	C / Low
9	Waterlogged Area	73711 27769	Possible dew pond but not shown on maps as such. The 1879 and 1907 OS maps depict the fields as rough pasture or furze unlike the surrounding fields which are presumably a better grade pasture.	?	?	3	C / Low

Site No.	Name	NGR (SW)	Description	1879 map	1907 map	Condition	Significance / Sensitivity Value
10	Gateway	73728 27759	Gateway through boundary between fields 4 and 5.	✓	✓	4	C / Low
11	Stile	73750 27757	Granite stile in boundary hedge between fields 4 and 5 built by Mrs Hext.	X	X	4	C / Low
12	Scott's Wood	73863 27665	Scott's or Nettis Wood shown on early 20 th Century images, seemingly as mature woodland.	✓	✓	3	C / Low
13	Scott's Pine Alignment	73766 27587	Alignment of Scott's Pine trees in field 5, formerly part of Scott's Wood (Site 12).	✓	✓	3	C / Low
14	Trackway MCO34466	73728 27759 to 73677 27520	SMR citation: "A well built trackway links Scotts Quay with Constantine and the granite quarries to the north. It is probably contemporary with the construction of the Quay and is now used as a public right of way." Continuation of trackway through field 5.	✓	✓	4	C / Low
15	Gateway	73677 27520	Gateway in boundary between fields 5 and 6.	✓	✓	4	C / Low
16	Trackway MCO34466	73677 27520 to 73739 27324	SMR citation: "A well built trackway links Scotts Quay with Constantine and the granite quarries to the north. It is probably contemporary with the construction of the Quay and is now used as a public right of way." Continuation of trackway through field 6.	✓	✓	4	C / Low
17	Round MCO14574 CO789	73468 28077	SMR citation: "A circular feature marked on the OS map of 1908 (b1) as a 'camp' is described by Henderson as a round, almost perfectly circular, with an internal diameter of about 46m. It was surrounded by a single rampart and ditch which survive on the west side. On the south both have been levelled, on the east and north the rampart remains as a hedge but the ditch has been filled (b2). The OS surveyor in 1971 found that all that remains of the round is a sub-circular field bank up to 1.6m high, with no trace of a ditch (h1). The OS in 1972, from information supplied by their field investigator, revised publication of this feature to 'settlement' and note that it will not be treated as an antiquity (b3). The possible round/settlement is visible on aerial photographs (p1) as a cropmark and earthwork and was plotted as part of the NMP." SAM citation: "The monument includes a round, situated close to the summit of a prominent spur between two estuarine tributaries of the Helford River. The round survives as an almost circular enclosure with an internal diameter of approximately 45m. It is defined by a rampart bank which is almost	✓	✓	3	S / High

Site No.	Name	NGR (SW)	Description	1879 map	1907 map	Condition	Significance / Sensitivity Value
			completely incorporated into modern field boundaries, except to the south east and the whole is surrounded by a buried outer ditch.” Presently has considerable rabbit or possible night hawking damage.				
18	Northern Quarry MCO34466	73777 27310	Quarry probably associated with the construction of Scott's Quay.	✓	✓	4	C / Low
19	Terrace	73759 27298	Terrace located to the west of the Northern Quarry (Site 18).	X	✓	4	C / Low
20	Western Quarry	73747 27285	Probably early 19 th Century quarry associated with the construction of Scott's Quay.	✓	✓	4	C / Low
21	Gate and Stile	73764 27293	Gate and granite built stile at top of access ramp leading to Scott's Quay.	X	X	4	C / Low
22	Upper Quay MCO4899	73795 27293	The Upper Quay is apparently shown on early 20 th Century photographs but not on the 1879 and 1907 OS maps. It is first shown on the 1963 OS map. It was apparently rebuilt and set slightly further back in the 1930s by Mrs Hext, presumably when in a state of disrepair. It incorporates occasional reused slate but is predominantly constructed from quarried and split granite blocks.	X	X	2/3	C / Low
23	Lower Quay	73801 27286	The Lower Quay is shown on early 20 th Century photographs and was probably built in the early 19 th Century by Charles Scott.	✓	✓	2	B / Medium
24	Slipway MCO49913	73781 27290	Concrete slipway built by the Pugh family in the later 20 th Century with the date inscribed into the concrete. This inscription was obscured by vegetation at the time of recording, though a slipway is apparently shown on aerial photographs taken in 1971 (05/71/223/93 – SMR).	X	X	4	C / Low
25	Mooring Post	73801 27302	Chestnut mooring post erected in the 1950s by Captain Pugh beside the Upper Quay (Site 22).	X	X	4	C / Low
26	Bench	73791 27296	Wooden bench mounted on a pair of fine-grained granite rollers located in the centre of the Upper Quay (Site 22) and erected by Charles Pugh in the late 20 th Century.	X	X	3	C / Low

3.2 Scott's Quay Description

Both the Upper and Lower parts of the Quay were recorded, with two test-pits additionally investigating the foundations and structure of the Upper Quay wall.

The Quay formed a blunt ended triangular projection stretching towards the deep water channel of Polwheveral Creek, though the course of this appeared to have moved further from the Quay since the late 19th century (OS map). The Quay measured 28m north to south by 28m east to west, though a cut into the slate bedrock marks the original western extent of the Quay as shown on the 1907 OS map, making a total 34m east to west. The blunt southern end, measured 10.4m in length, apparently forming the principal loading and unloading platform. Both the Upper and Lower Quay surface sloped from the north down towards the south, presumably facilitating loading and unloading and ensuring surface drainage. The Upper Quay sloped from 5.0m OD at the north end beside the quarry (Site 18) to 4.6m OD beside the Upper Quay walling. The Lower Quay sloped from the base of this at 3.45m OD to 2.70m OD at the south end. The more pronounced slope to the Lower Quay surface appeared to be due to the more degraded nature of the Lower Quay walling and associated erosion.

3.2.1 Lower Quay

The Lower Quay wall survived up to 1.35m high and was generally defined by sizeable granite quoins and coping averaging 1-1.4m in length by 0.5-0.7m in width and 0.25-0.35m in depth. The granite blocks were generally squared, though a number of them only had squared outer edges, with less regular rounded inner edges. The granite appeared consistent with the typically light brown granite from the more weathered upper sections of the Constantine quarries and many of the blocks had clear wedge split marks on their faces, typically between 80-150mm in length by 20-40mm depth. At least one in-situ block also included a face defined by 35mm diameter drilled split marks, typical of early 19th century granite splitting.

Below the coping local slate originally made up the bulk of the wall structure, though where the granite coping was no longer in place the slate walling had largely eroded away. At the southeast corner of the Lower Quay, a 25mm diameter iron bolt had been cut off close to the surviving Quay surface. This may have originally provided for a small loading derrick.

Seaweed shrouded much of the Lower Quay walling.

3.2.2 Upper Quay

The Upper Quay wall ranged from 0.3-1.2m in surviving wall height and was generally defined by three courses of smaller granite blocks with some coping surviving above this and one section of slate foundation course (11). The blocks generally averaged 0.25-0.6m length by 0.25-0.4m in width and 0.2-0.35m in depth, whilst the coping averaged 0.5-0.9m in length by 0.3-0.4m in width and 0.25-0.35m in depth. The granite blocks were generally squared, though a number of them only had squared outer edges, with less regular, inner edges. The blue-grey granite appeared consistent with deep unweathered material

from the Constantine quarries and virtually all the blocks had regular 15mm diameter drilled split marks on their faces. Occasional larger granite pieces with wedge marks appeared to have been reused from the Lower Quay wall.

At the west end of the surviving Upper Quay wall a section appears to have been rebuilt to accommodate the slipway, including a sizeable block of concrete at its base. Further along a 3.5m long section of slate foundation course (11) has been provided, possibly at a later date, to underpin the granite blocks which were being undercut by coastal erosion. No other evidence of foundations was evident for the base of the Upper Quay wall, which was set directly on compact light orange-brown silty-clay (2). The western section of the Upper Quay wall had survived almost intact, with the face leaning back 15° off vertical with fairly uniform orange lichens. This section of walling was mostly capped with regular granite coping, though some of this looked to have been moved or replaced relatively recently, judging by the lack of lichen. A vertical break in the running bond at the east end of this section may have originally have provided for an earlier slip or steps. To the east much of the walling has moved significantly, either outwards or inwards at the top and little coping survives in situ. Where the top blocks are missing the backfill material has washed away exposing the lower blocks and allowing them to be pushed off.

This movement and subsequent degradation of the Quay walling is especially evident along the east wall, where an extant mooring is associated with softer foreshore mud. The mooring post (Site 25) has clearly been let in to the earlier Quay wall structure.

Relatively haphazard repairs of the displaced granite blocks has failed to re-instate the running (stretcher) bond and has not generally been accompanied with suitable backfill material.

The test-pits (Figure 9, Figure 10, Plate 24, Plate 25, Appendix 3 Context Register) demonstrated cohesive stratigraphy with compact light orange-brown silty-clay (2) with slate fragments exposed on the inner side of the eroding edge of the Quay. A 0.15m thick layer of soft dark pink silty-clay (3) with angular slate and occasional shell fragments sealed the orange-brown silty-clay (2) in test-pit 2. A 0.25m thick layer of slate consolidation (10) sealed the pink silty-clay (3) in test pit 2. The clay layers (2) and (3) had been cut in test-pit 2 by a vertically sided construction trench [9] and the orange-brown silty-clay (2) was similarly cut by a construction trench [8] in test-pit 1. The trenches [8] and [9] appeared to be associated with the construction of the Upper Quay wall [4], and were backfilled with slate fragments (5). The slate backfill also included nylon fishing net with 100mm square mesh and a single square profile iron nail. Above the slate backfill (5) a 0.3m thick layer of more disturbed material (6) appeared to be associated with the replacement of the loosened upper course of the Quay walling.

A 0.08-0.12m thick layer of topsoil and grass (1) sealed the orange-brown silty-clay (2) and slate consolidation layer (10) in test-pits 1 and 2 respectively.

4 Discussion

4.1 Lower Quay

The historic photographs (Plate 1, Plate 2, Plate 4, Plate 5) indicate that the Quay included two levels by this date (c1910). It is unclear how deliberately distinct the two levels were, no distinction is made between them on the 1907 map, though the surviving Lower Quay wall is capped by a line of substantial granite blocks presently serving as coping. The general disrepair of both sections suggests that both are considerably older. The similarity of form (seemingly slate walling with granite coping stones) of both levels additionally suggests that the sections visible in the historic photographs were originally of a single build, the Lower Quay being the only recognisable part extant. The modern photograph (Plate 3) clearly demonstrates the erosion of the previous Quay, spreading out to form a gentle slope to the east (and other sides) of the Quay where boats formerly would have moored.

The surviving height of the Lower Quay, between 2.7-3.45m OD, being entirely flooded by all but the smallest neap tides, suggests that either the Quay was built as a split level structure or that very considerable amount of material has eroded since the early 19th century. Considerable material has certainly in-filled the previous moorings beside the Quay and forced the main channel further to the southeast though it is unclear if the Lower Quay originally matched the height of the extant Upper Quay surface.

The test-pits in the Upper Quay wall demonstrate the existence of a natural promontory of compact clays (probable boulder clay above the Mylor slate) serving as the base for the Quay. The Lower Quay seems likely to have echoed this arrangement, minimising the amount of excavation and in-fill required and relying on the solid geology beneath for structural integrity for much of the Quay.

A split level Quay structure may have been a cost effective approach to ensure maritime access at both mid and high tides and structural integrity.

The use of wedges to split granite is common in Cornwall up until the end of the 18th century, when drilled splitting (feather and tare) becomes widespread. Larger drill split marks are normally used at the start of the 19th century, with smaller drill marks generally typical of later granite working. The large (35mm diameter) split marks evident on occasional granite blocks alongside numerous wedge marks of the Lower Quay may suggest the use of earlier stockpiled granite material being used to build the Quay and occasionally being re-worked to achieve this. The brown colour of the granite is generally indicative of shallower, weathered Carnmenellis granite in the area. Quarries naturally exploited the most shallow rock first, with 19th and early 20th century quarries tending to extract deeper and often better quality rock.

The use of imported granite blocks for the quoins and coping stones is fairly typical in the parts of Cornwall just outside the granite areas. Granite's greater strength justifying the additional acquisition, extraction and transportation costs. The two quarries demonstrate the use of local slate for the bulk of the structure,

the better pieces in the Quay wall, the smaller fragments probably being used in the backfill and surfacing as in the Upper Quay.

The thick burnt layer (3) identified beneath the slate consolidation layer in test-pit 2, may predate or be related to the early 19th century Quay. The inclusion of shell fragments within this may be residual or point to the cooking of shellfish on site. Either way this may not have been the primary or only purpose for the fire. Archaeological monitoring of consolidation works should seek to record the extent of the spread and may provide dating and faunal evidence, enabling better interpretation.

4.2 Upper Quay

The blue-grey granite blocks of the Upper Quay are of good quality granite- ie that with relatively few faults and relatively consistent crystalline form. Many of the surrounding quarries were producing similar granite for buildings across the United Kingdom and further afield in the 19th and early 20th century. The apparent freshness of the splits and drill marks is indicative both of the quality of granite used and its relatively recent working. The small diameter drill holes are consistent with the recorded 1930s date for the Upper Quay, though the small size of the blocks undermines the structural integrity of the Quay in the absence of suitable coping stones and foundations.

The test-pits demonstrate the lack of foundations for the Upper Quay. The edges of the compact clay of the promontory were cut vertically to allow the construction of the granite Quay walling. The walling was originally erected at a batter of approximately 75° and provided with slate back-fill, compensating for outward pressure of the Quay in-fill and allowing the water to drain without exerting undue outward pressure. The granite blocks were laid directly onto the clay, contouring with the underlying undulations. The upper courses generally formed a good running bond, tied together at the top with more substantial granite coping. It is unclear whether the coping of the Upper Quay was ever complete. The lack of running bond, batter, backfill and fresh stone faces without lichens, seaweed or other attachments typically indicate repositioned walling on the Upper Quay.

The 100mm mesh synthetic fish netting found in the top of the slate backfill (5) confirms that the top of this part of the Quay (test-pit 1) was repaired in the later 20th century, corresponding well with the structural evidence. Whilst nylon was advertised in America from 1939, synthetic monofilament netting (both gill and tangle) became more widespread in the fishing industry in the 1960s. Its discovery in the backfill of the Quay walling appears to suggest that fishing from the Quay may have included some small scale commercial fishing in the mid to late 20th century as well as the more recreational line fishing.

4.3 Structural failings

There are a number of reasons for the structural failing of the Upper Quay covered in more detail in the structural assessment. These may be summarised as follows:

- The lack of foundations is compounded by the small size of the granite blocks, lack of coping, tidal erosion and associated undermining which has allowed the rotation of individual blocks and larger wall sections.
- Softer foreshore mud and a lack of formalised access to the eastern foreshore and mooring has allowed accelerated movement and collapse to the east.
- Relatively piecemeal repairs have failed to emulate the running bond, replace or reinstate the coping, batter and free-draining backfill material, creating more damage. The loose granite blocks replaced on the top of the surviving walling has arguably created unstable, moving weights in turn de-stabilising the lower blocks.

5 Conclusion

The assessment has highlighted the environmental and archaeological potential of the Quay and the principal management constraints associated with its repair. The surviving structure can be simplified archaeologically into the early 19th century Lower Quay- primarily a small scale industrial facility built by Charles Scott and the 1930s Upper Quay built by Mrs Alice Hext of Trebah, primarily for recreation and as a landscape feature. The comparative builds well represent the different uses.

Considered in isolation the Upper Quay of the 1930s is of local archaeological significance. Whilst the quay is part of a number of national ecological and landscape designations, its relatively diminutive scale, simplistic form and modern alterations limit its ecological and structural sensitivity. Considered together, the associations with the Cornish quarrying and mining industries, significant individuals and their estates in the evolving intertidal landscape, Scott's Quay is of regional archaeological significance.

The ecology of the Quay and surrounding areas is protected by multiple designations. These and the appraisal below confirm the variation of species using the multiple habitats that an inter-tidal quay creates and its national significance.

The structural survey identified the likely construction methods and materials used. Many aspects of the structure and its subsequent repairs contribute to the dilapidated state of the Quay.

Providing the reconsolidation works are sensitively undertaken there is little potential for significant harm to the ecology and archaeology. The Quay has stood for over seventy years and consolidation works have the potential to add to archaeological understanding of use, construction and dating of the Quay. Despite the considerable structural failings of the Quay, meaningful consolidation should be possible within budgetary, archaeological and environmental constraints. These should seek to develop the appreciation and functionality of the Quay for the years to come.

The following recommendations reflect consideration of those put forward in the Appendices and feed-back from the Historic Environment Service and Natural England.

6 Recommendations

6.1 Immediate Actions

The procurement of an estimate for limited consolidation works to maximise the longevity and appreciation of the Quay without reducing the historic integrity of the structure or incur major additional planning considerations and costs. Details of the specific archaeological, ecological and structural management recommendations and timings are provided below and in more detail in Appendix 4 and 5 with guide costings.

6.2 Consolidation

- **Planning** (January). A detailed method statement to be approved with NE, HES and the client, to include specifically: access to site, storage of materials and machinery, movement of tumbled rocks from the Upper Quay, back-fill material, prevention of spills, archaeological monitoring and reporting.

Materials should not be stored beside the quarry face and any stockpile should be kept below 1.5m height to avoid impinging on potential bat flight-paths.

- **Access** (January-February). Trim the hedges along the access track to avoid the nesting season.
- **Consolidation Works** (April-May). Underpin undermined western section of walling with faggots or slates to match extant foundation course (April).

Clean off existing masonry where necessary. Remove sections in poor condition (estimated 20-30%) and excavate 0.3m width trench behind down to slate backfill and store in stockpile for re-use section by section. Rebuild partially reinstating running bond, coping and 70-80° batter where possible. Build up key weaker points with limited additional granite to help tie-in and strengthen wall. Consider the import of a limited number of granite coping stones to re-enforce key areas. Imported coping may be pre-drilled to allow pinning with iron cramps to be fixed with epoxy resin. Backfill behind the repaired walling with inert free-draining stone (granite or slate). Reinststate surface with excavated material sealing uppermost walling, the a layer of suitable reinforcement mesh and turf or seeded geotextile.

Provide formalised access to eastern foreshore and mooring.

An archaeological watching brief of deconstruction and excavation works should seek to add to the findings of this assessment, specifically recording the extent and nature of the burnt deposit and any further evidence for aspects relating to the Quay.

- **Completion.** A photographic survey on completion of consolidation works should be carried out in line with the agreed WSI (Appendix 2)

along with the remaining parts of the archaeological program specified therein.

6.3 Future Management

- The consolidated structure including both the Upper and Lower Quays should be regularly monitored for signs of movement or deterioration.
- Small scale issues should be dealt with promptly using the principles of repair set out in the above recommendations.
- Larger problems are likely to occur over a relatively protracted time frame and should incur a suitably considered response balancing financial, ecological, archaeological and structural considerations.
- Further historical research, geophysical probing or targeted test trenching of the Lower Quay could add considerably to our understanding of the original form of the early 19th Century Quay but it is outside the remit of the current study.
- Regular winter bird watching trips to the Quay could provide useful additional records of the over-wintering migrant populations whilst fostering a deeper appreciation of this special place. They would provide an opportunity to monitor the Quay at the most vulnerable time of year.

6.4 Finds

No significant finds have been identified to date.

6.5 Samples

No samples have been required to date.

6.6 Dissemination

Following the distribution of the final report and its uploading onto the ADS library in line with the WSI, extracts and or illustrations from the report could be included on the Goongillings Farm website or a link made to the digital report. Similarly an unobtrusive, updated, illustrated information board could be displayed on site to highlight the ecology, archaeology, history and significance of Scott's Quay.

7 The Archive

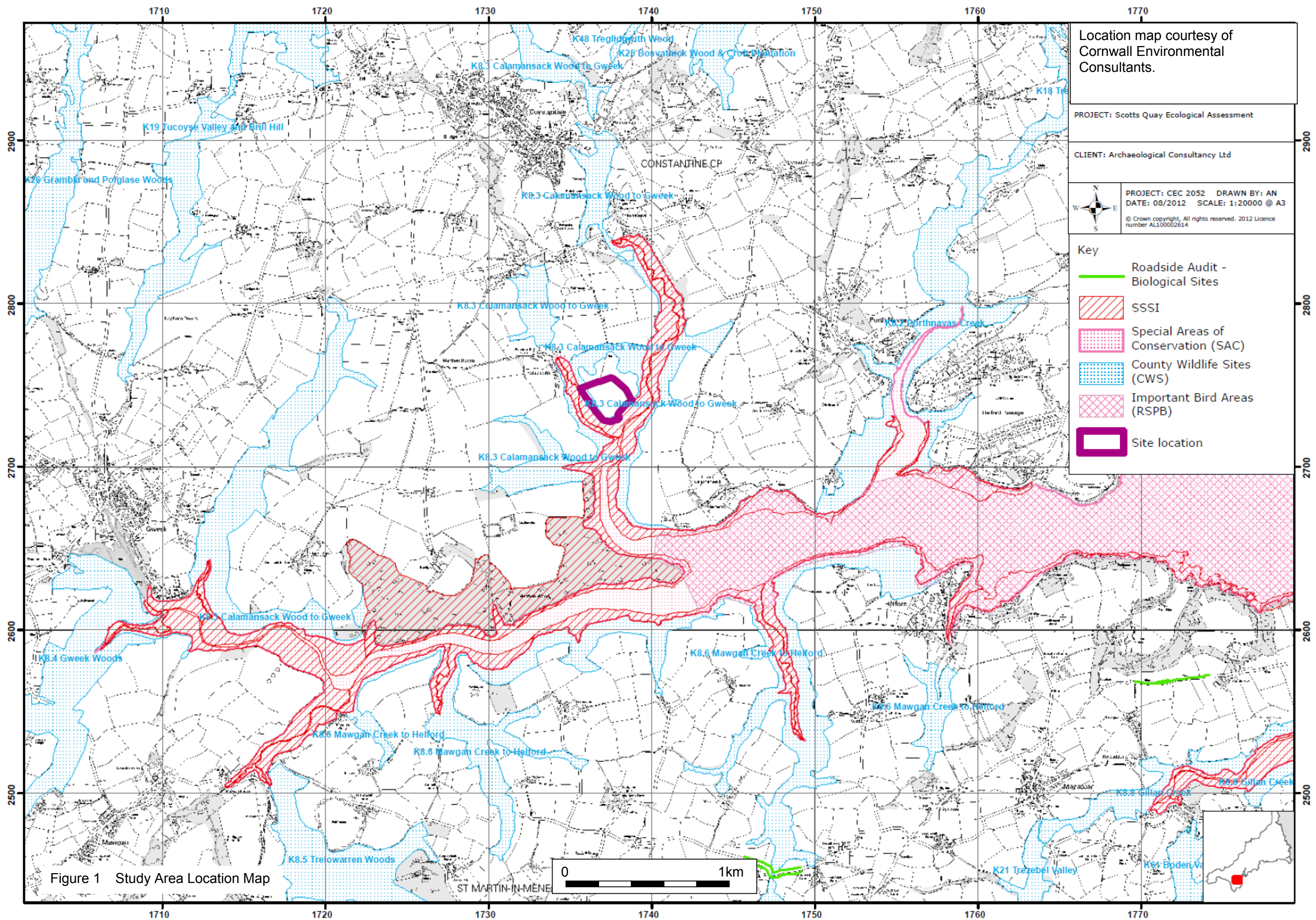
The accession number will be forthcoming, the AC Ltd project number is **AC12007E**

The project's documentary, photographic and drawn archive is housed at the offices of Archaeological Consultancy Ltd, Goodagrane, Halvasso, Penryn, Cornwall, TR10 9BX until transferral to the CRO/ RCM as appropriate. The contents of the archive will be quantified on completion of the project.

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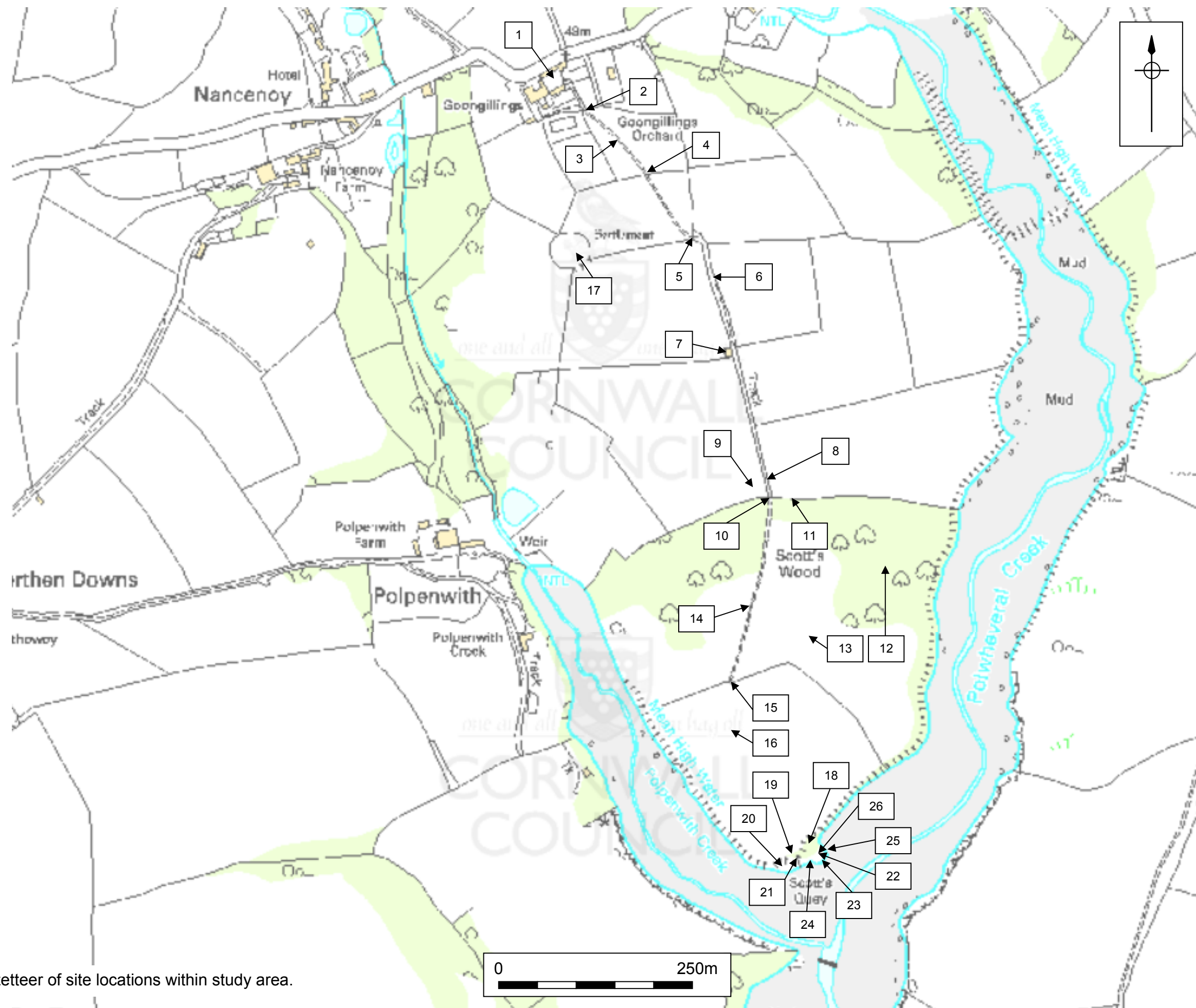


Figure 2 Gazetteer of site locations within study area.

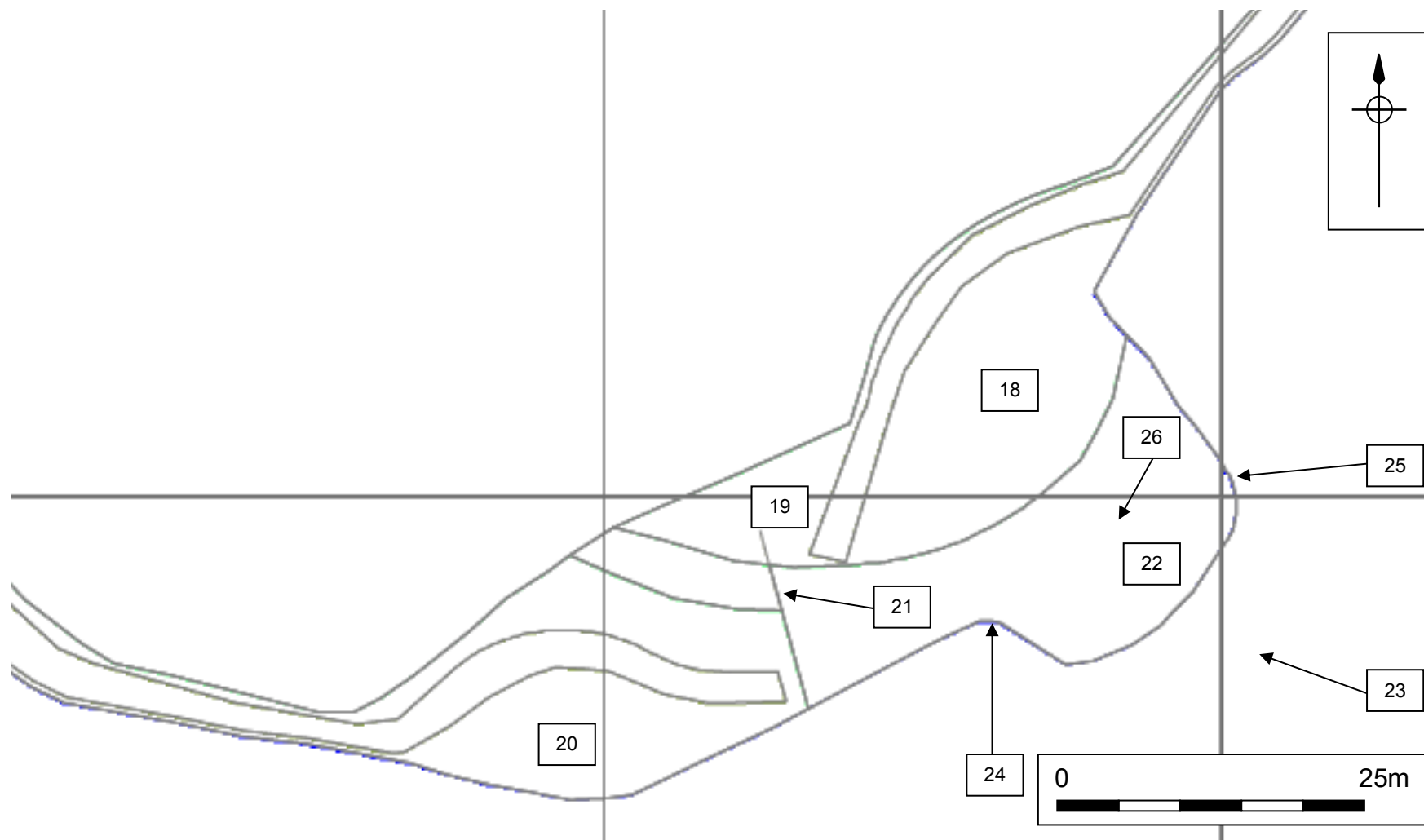


Figure 3 Gazetteer of sites identified at Scott's Quay.



Figure 4 c1813 Ordnance Survey Map.

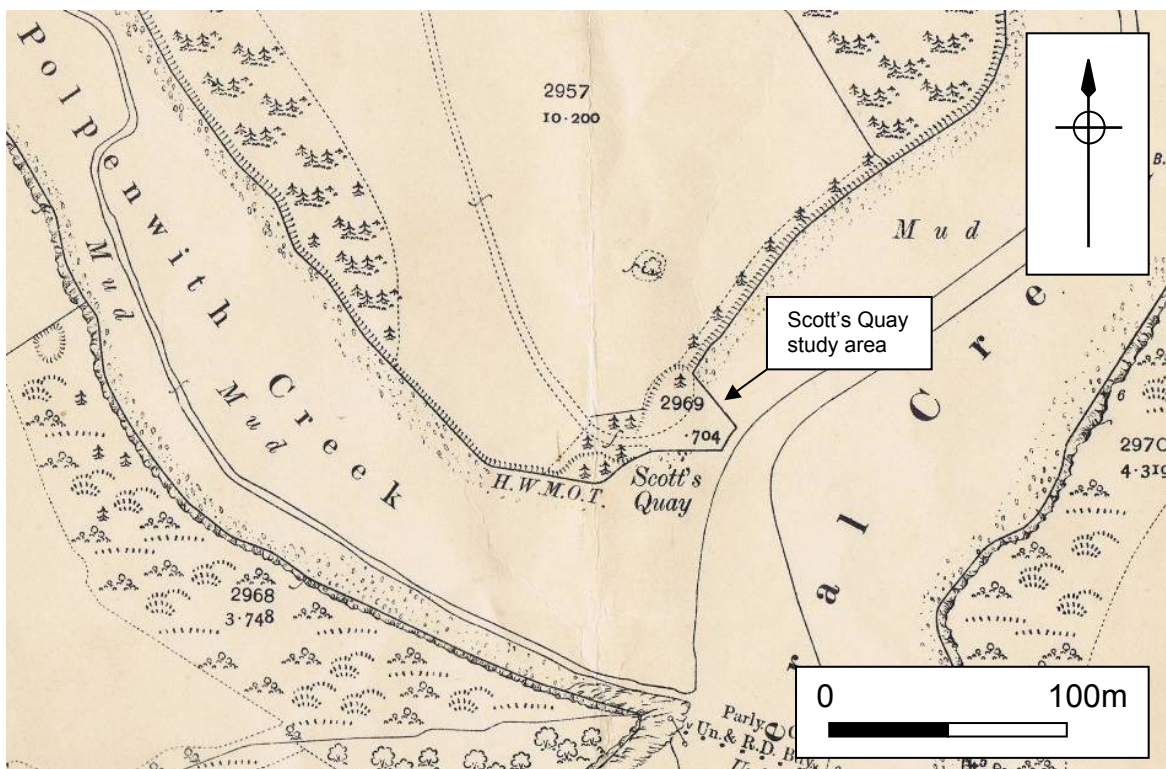


Figure 5 1907 Ordnance Survey Map.

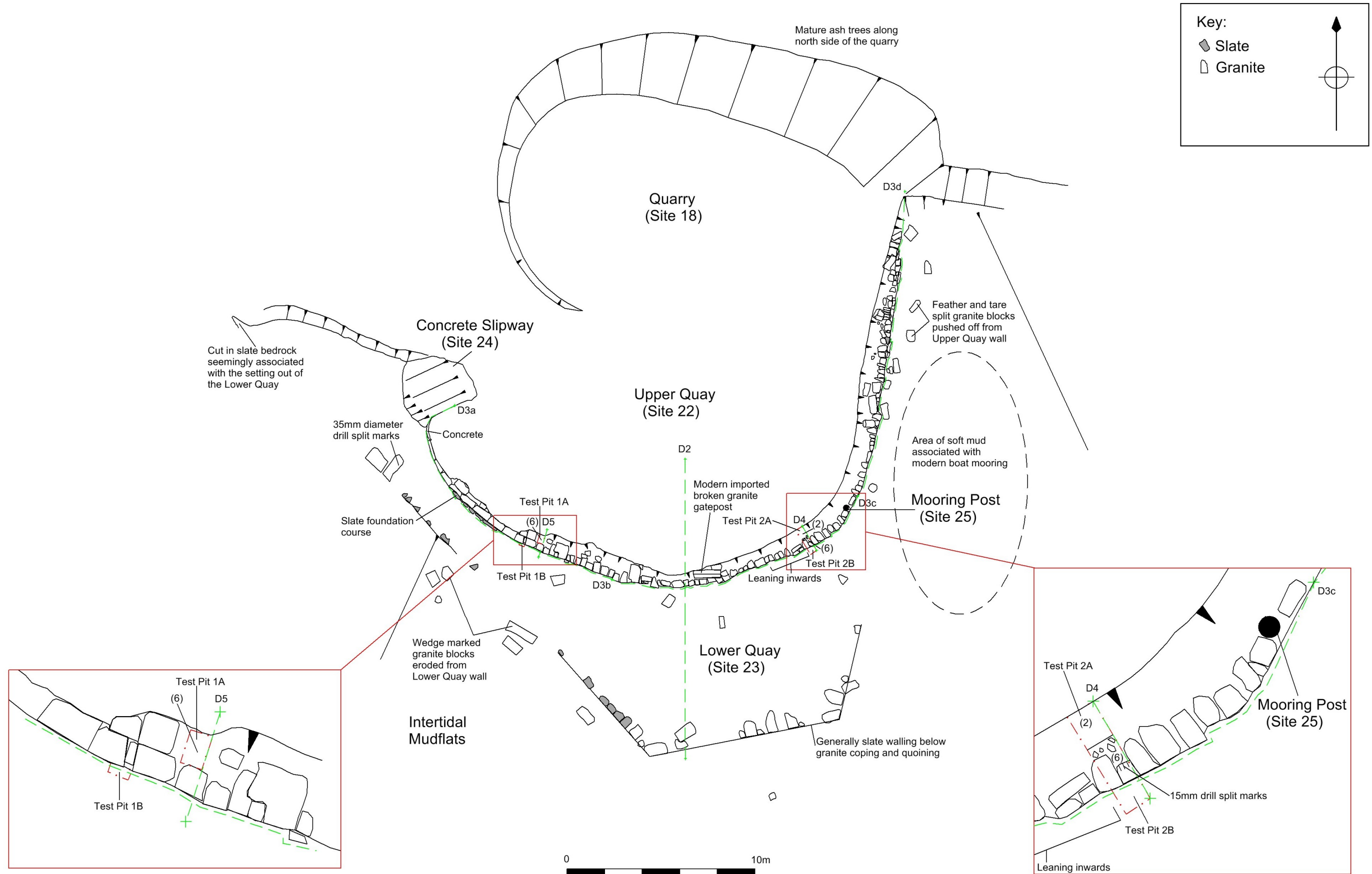


Figure 6 Plan of Scott's Quay

D3 Elevation of Upper Quay Wall

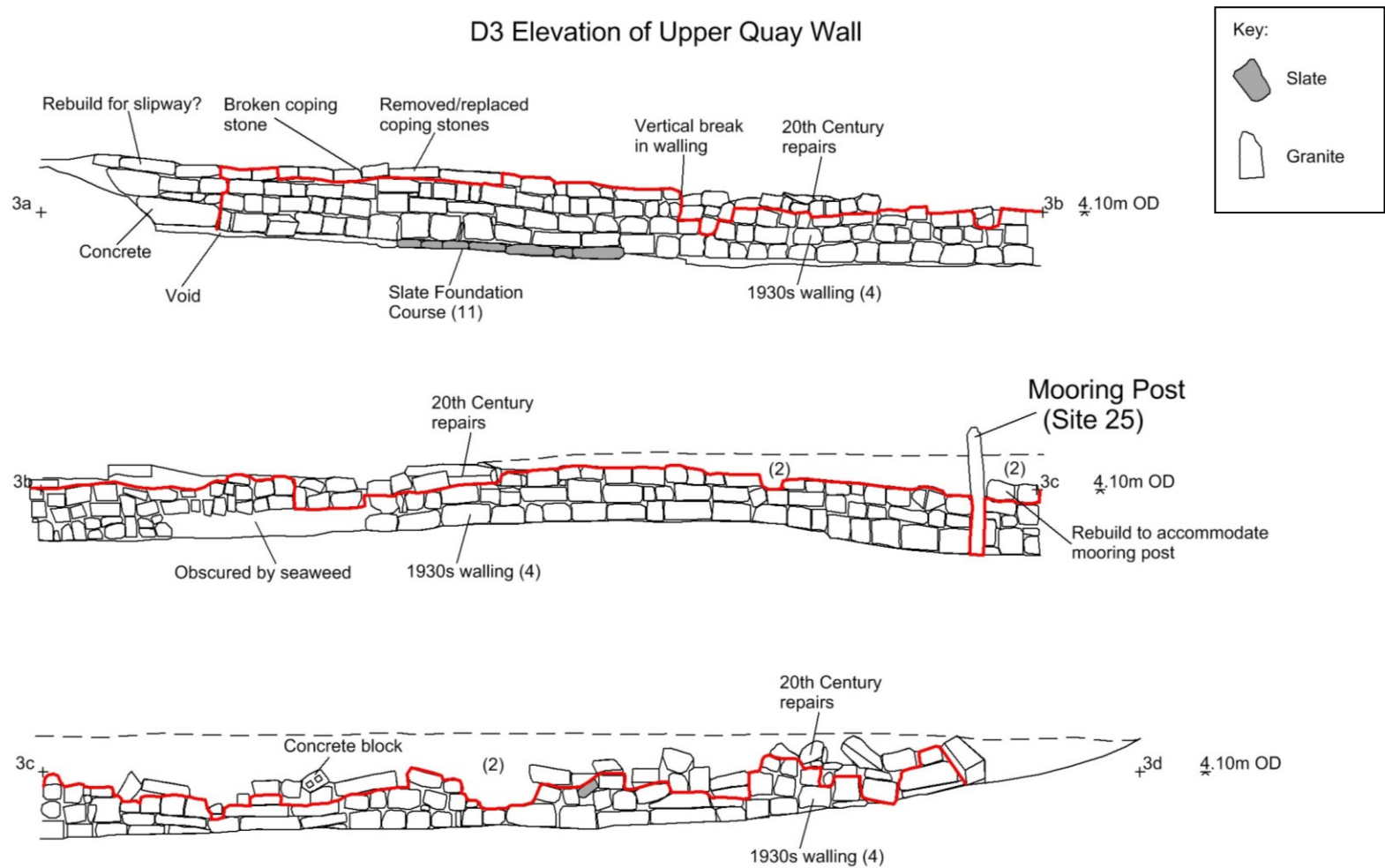


Figure 7 Elevation drawing of Upper Quay Wall

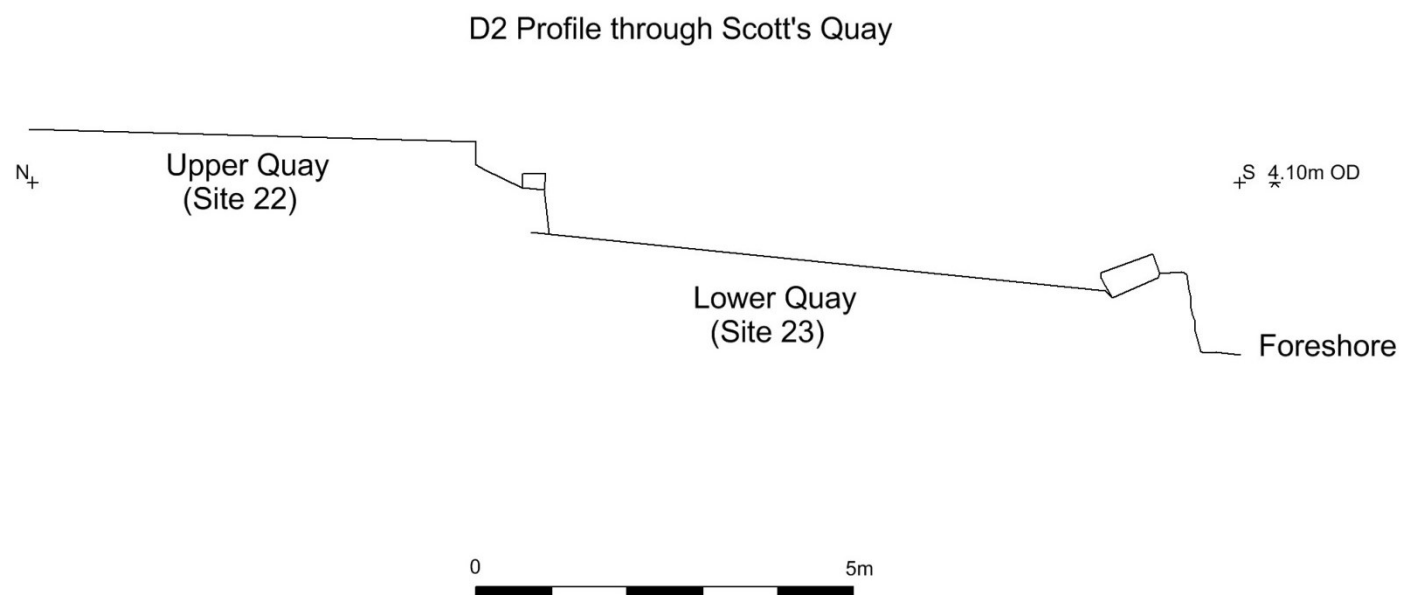


Figure 8 Profile drawing through Scott's Quay

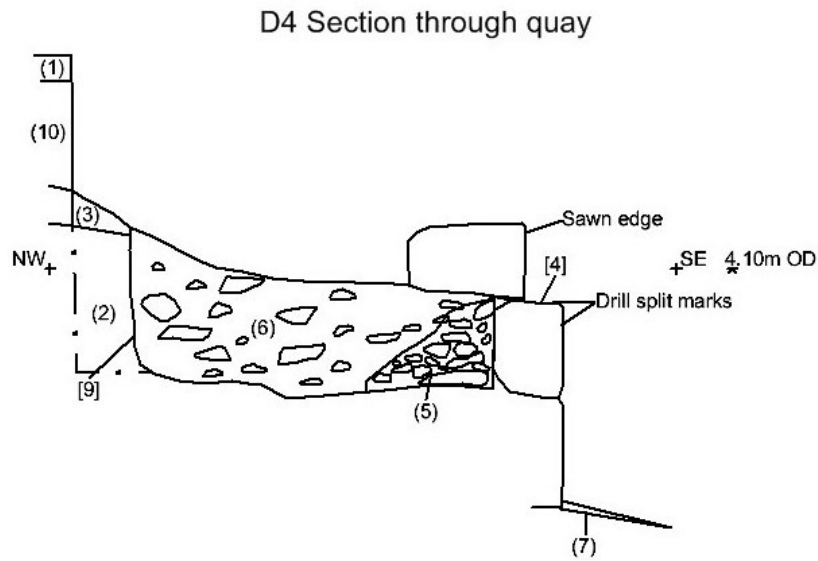


Figure 9 Section drawing through the Upper Quay wall in test-pit 2

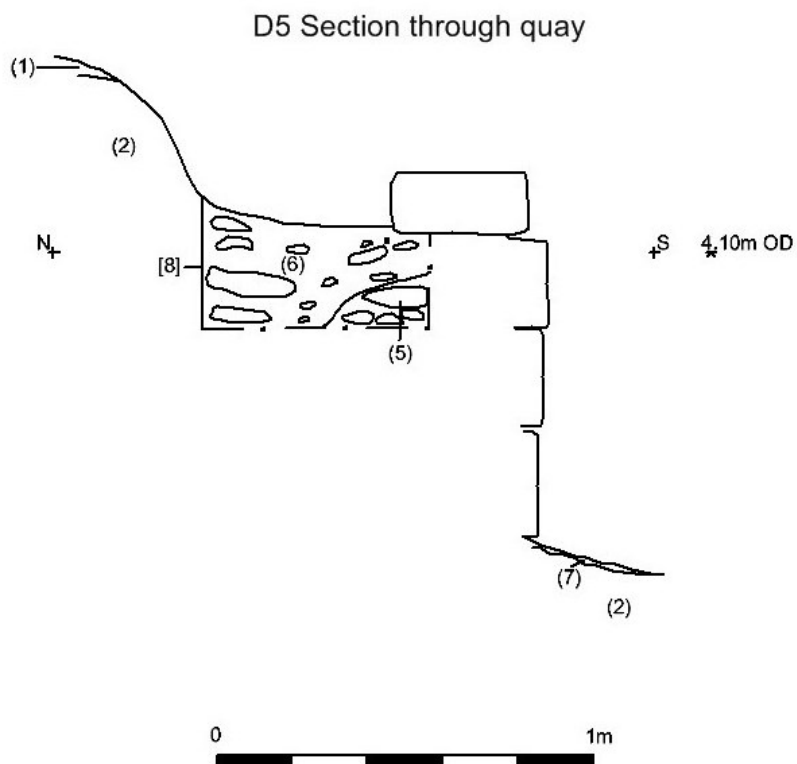


Figure 10 Section drawing through the Upper Quay wall in test-pit 1



Plate 1 Historic photograph of Scott's Quay c1910, looking southwest. Courtesy of Charles Pugh.



Plate 2 Historic photograph of Scott's Quay c1910, looking southwest, apparently showing work on-going on the Lower Quay. Courtesy of Charles Pugh.



Plate 3 Scott's Quay, looking southwest, showing the Lower Quay to the left and Upper Quay to the right, approaching low tide. AC/DP/2012/08/06/016



Plate 4 Historic photograph of Scott's Quay c1910, looking southwest, showing a small excavation in the foreshore silt (bottom left). Courtesy of Charles Pugh.



Plate 5 Historic photograph of Scott's Quay c1910, looking southwest, approaching high tide. Courtesy of Charles Pugh.



Plate 6 Historic photograph of Scott's or Nettis Wood apparently showing well established Scott's pine c1910. Courtesy of Charles Pugh.



Plate 7 Site 7 Aircraft Hanger,
looking southwest.
AC/DP/2012/08/06/002



Plate 9 Site 14 Trackway,
showing low branches over head.
AC/DP/2012/08/06/005



Plate 8 Site 10 Gateway,
showing a granite gatepost with
wedge splitting marks and Site 11
granite stile to the left, looking
south. AC/DP/2012/08/06/004



Plate 10 Site 13 Scott's Pine
Alignment silhouetted in the evening
sky, looking south.
AC/DP/2012/08/06/006.



Plate 11 Site 16 Trackway looking
north. AC/DP/2012/08/06/008



Plate 12 Mature ash trees along the top of quarry (Site 18), looking north. AC/DP/2012/08/06/040



Plate 14 Site 25 Mooring Post looking north. AC/DP/2012/08/06/031



Plate 13 Scott's Quay at mid tide looking south. AC/DP/2012/01/06/007



Plate 15 Scott's Quay looking north-northeast showing the Lower Quay in the foreground. AC/DP/2012/08/06/012



Plate 16 Site 24 Slipway looking northeast. AC/DP/2012/08/06/022



Plate 18 Wedge split-mark on a granite block on the Lower Quay. AC/DP/2012/01/06/012



Plate 17 Upper Quay walling showing battered wall face (4) on a slate foundation course. AC/DP/2012/01/12/005



Plate 19 Battered 1930s walling to the left with vertical repairs to the right, looking northeast. AC/DP/2012/01/06/014



Plate 20 Slate consolidation (10) for the Upper Quay surface looking west. AC/DP/2012/01/06/022



Plate 21 Concrete block used in the backfill to the Upper Quay wall. AC/DP/2012/01/06/021



Plate 22 Re-used granite gate-post failing to consolidate the top of the Upper Quay walling. Looking west. AC/DP/2012/01/12/003

Plate 24 Test-Pit 2 looking southeast. AC/DP/2012/08/08/002



Plate 25 Test-Pit 2 looking southeast. AC/DP/2012/08/07/002



Plate 23 Inspecting the base of the Upper Quay wall. AC/DP/2012/01/12/001



Appendices

Appendix 1 Brief

Brief for Project Management of Consolidation and Archaeological Recording at Scott's Quay, Goongillings, Constantine, Cornwall (SW 7379 2728)

Introduction

Scott's Quay on Polwheveral Creek was first built some time around the first half of the 19th century to ship granite from the Constantine quarries. The original quay face now survives as a low section of walling visible at low tide. The present quay face appears to have been rebuilt some time after c1907 (Second Edition Ordnance Survey), set behind the original quay wall. It is this second phase of the quay that requires consolidation works.

The farm has entered into the Higher Level Stewardship scheme (Agreement Number AG00315681) and the quay is to be consolidated under the scheme. Provision of this guidance is for the benefit of the HLS agreement holder to help ensure relevant tenders which fulfil HLS scheme requirements are received. Any contract however would be between the agreement holder and the contractors. All day to day agreements, health and safety requirements including CDM regulations etc are matters between these parties.

IMPORTANT: As the creek is tidal, works must be arranged to take this into account.

Outline brief

An appropriately qualified and experienced conservation architect, structural engineer or professional archaeologist/archaeological organisation should on behalf of the applicants prepare a Project Design/Written Scheme for project managing the following elements:

1. A pre works photographic record and measured archaeological survey of the quay face
2. A wildlife survey of the quay
3. Identifying the required consolidation works necessary
4. Preparing the schedule of repair works and specification
5. Professional building team on site, to be directly supervised by the architect etc, with guidance as required from building/heritage professionals.
6. An archaeological watching brief and post-works photographic record bought together in a single report.

It is expected that some of these elements could be carried out 'in-house' and some will have to be sub-contracted out, depending on the field of expertise of the project manager and their team.

Liaison with the Historic Environment Specialist of Natural England is essential throughout the assessment.

The project design/written scheme should be submitted to and agreed in writing by the Natural England Historic Environment Specialist before the work is commissioned and carried out. HLS will only fund an appropriate level of assessment and repair to the structure, not a 'gold-plated' approach. Please note that Natural England cannot accept

'contingency' amounts. All reasonably foreseeable work should be quoted for. The final amount payable will be based on work actually required and completed.

Those wishing to tender are advised to visit the site before completing their specification as there may be implications for accurately costing the project

All costings must be clearly itemised in the submitted tender. Each item should include identification of who will carry out the work and time allocated to it. The consultants are expected to add, itemise, justify and quote for any additional work not specifically included for within this brief but which in their opinion is required for the successful outcome of the project.

Quotations should allow for statutory responsibilities which arise, including but not limited to, any duties under the Construction (Design and Management) Regulations 2007.

The tender should take account of and cost: The wildlife, archaeological and structural surveys, contract administration, specification preparation, site supervision and meetings and the final report. The task list should be used to guide the itemisation of each element.

Aims

- to archaeologically record the quay wall
- to identify and evaluate the wildlife value of the quay
- to assess the feasibility and extent of required consolidation
- to provide a specification of the work required taking identified environmental factors into consideration
- to project manage the consolidation works and associated archaeological recording
- to identify future management requirements and management priorities

Tasks

The following tasks will make up this project, for which the project manager will have overall responsibility for ensuring they are carried out on time, to cost and at the appropriate professional standard:

1. Pre-works archaeological photographic record and measured survey of the quay face
2. Structural survey of the quay
3. Wildlife survey of the quay
4. Determine required consolidation works taking the results of the above into account.
5. Review point - meeting with Natural England and agreement holder to determine next stage.
6. Write schedule of repair works and specification of works
7. Manage tendering process for, and project manage, the work items below:
8. Consolidation work
9. Archaeological watching brief (level of input dependant on scale of works required)
10. Post-work photographic record

11. Collate results of the above into a single report

Guidelines

The following guidelines are given for the surveys:

The archaeological recording:

Undertake a survey of the quay wall, looking at its form, use of materials and methods of construction, past function, style of architecture and changes/adaptations over time and the reasons for the changes. A record of the quay wall should be made using appropriately scaled plans and drawings, and photographs, equivalent to the EH Level 2 standard, including written parts 1-3, 4, 6, 7, 9, 10, 15, 16, 17, 18, 21, 22 and photographic recording 1, 2, 5 and 9. It will be important to identify archaeological elements within the vicinity of and on the access route to the site that may be affected by any consolidation works and take specialist advice about their management/protection during the restoration process (such as the earlier quay wall).

The wildlife survey:

Identify the location of wildlife species using the quay either seasonally or throughout the year and consider their requirements, and the legal obligations under relevant wildlife legislation, when consolidating the quay.

The structural survey:

Undertake a condition survey of the quay wall and comment on the feasibility of repair, highlighting good points as well as looking at defects and identify the remedies required. Produce a statement of significance and a statement of guiding principles for the continuing management of the quay wall. Identify management and maintenance needed on a continuing basis once the quay is consolidated. Such work will be the owner's responsibility for the remaining duration of the agri-environment scheme.

Report Production

A report should be produced and should contain the following:

- Background to the project
- Methodology
- Archaeological and historical background
- Description of quay including relevant location plans
- Results of ecological survey
- Results of structural survey
- Scope for further archaeological or ecological works
- Summary of consolidation works undertaken
- Summary of future management requirements
- Site inventory including specific management requirements where appropriate
- Bibliography
- Archive
- copies of historic maps, historic photographs, works photos etc should be incorporated into the report

Deposition

A hard copy of the completed report should be sent to the Natural England Historic Environment Specialist at Exeter, and one copy to the NE Project Officer at Truro.

One copy should be deposited with the Historic Environment Record held by Cornwall Council, along with archived site notes, plans and photographs.

In addition digital copies should be sent to each organisation.

Dissemination & Publication

A summary of the results of the work should be sent to the Principal Archaeologist (Historic Environment Record Officer), Cornwall Council either through an Event Record Pro-forma or concise summary containing equivalent information.

Monitoring

Variations in the project design should be submitted in writing to the NE Historic Environment Advisor. Variations can only proceed if prior agreement has been given otherwise this may jeopardise the grant offer.

It is expected that site monitoring meetings will be included in the project at appropriate key stages in the work (to be identified by the project manager).

Timetable

The work should be completed and the final report submitted by the end of May 2012. There is **no scope to over-run** as this will preclude grant aid.

- details should be supplied of the projected programme of the project through to completion.
- the programme should be expressed on a cascade chart or by some similar form of graphic representation. The cascade chart should show:
 - all the tasks to be undertaken in the correct sequence
 - the inter-relatedness and interdependence of tasks
 - time-critical elements
 - the length of time allocated to each task
 - the personnel (or grade) allocated to each task
 - agreed monitoring points

Personnel

Each aspect of the work should be carried out by suitably experienced and qualified professionals with specialist expertise in their area of competence. The names and titles of the Project Manager and all staff should be listed with a précis of their relevant and recent experience. Personnel must have adequate professional indemnity insurance appropriate to the work involved.

It would be preferable for the professional organisations and key personnel to be members of their relevant professional institutions.

Evaluation of Tenders

Tenders must be returned by 31 January 2012 to the Agreement Holder Mr C Pugh, Goongillings Farm, Constantine, Falmouth, Cornwall.

The Agreement Holder does not undertake to accept the lowest or any Tender and reserves the right to accept the whole or any part of any Tender submitted.

During the evaluation period, the Agreement Holder reserves the right to seek clarification in writing from the Tenderers, to assist it in their consideration of Tenders.

Failure to provide a satisfactory response to any of the questions may result in the Agreement Holder not proceeding further with the Tenderer.

The Tender will be evaluated on the following criteria (not set out in order of importance):

- Price
- Capability and Quality (including the ability to meet the deadlines indicated)
- Previous relevant experience

Key contact for this assessment will be through Joy Ede, Natural England Historic Environment Advisor:

Joy Ede

NE SW Historic Environment Advisor

Renslade House

Bonhay Road

Exeter

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This brief has been prepared by Joy Ede and Ann Reynolds (Senior Archaeologist, Countryside Advice, Historic Environment Service, Cornwall Council).

If you have any queries concerning this brief then you can also contact either Ann Reynolds ann.reynolds@cornwall.gov.uk or Jeremy Clitherow, Lead Adviser for Natural England jeremy.clitherow@naturalengland.org.uk mobile 07785724821

Date: 11th November 2011

Suggested format for quoting

ACTION	Personnel	Time required	Cost
Initial on-site meeting to agree project details, timetable etc.			
Archaeological survey			
Structural survey			
Wildlife survey			
Prepare and distribute draft report including prioritised work outline			
Arrange an on-site meeting to present findings, discuss comments on draft report and to identify the way forward.			
Draw up specification and schedule of work.			
Tendering process			
Contract administration/financial and project management			
Final report production and distribution			

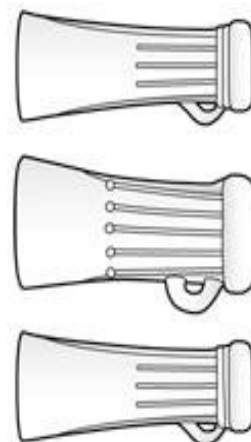
Add on all other work you identify as required in order to fulfil the brief.

Scott's Quay, Constantine, Cornwall.

Project Management of Consolidation and Archaeological Recording: Written Scheme of Investigation.

Author:	Matt Mossop MA MGSDip MIAI
Report Date:	13/7/2012
Client:	Charles Pugh
Project No:	AC12007E
Planning Reference:	N/A
Statutory Protection:	None
Proposal:	Consolidation of Quay
Parish:	Constantine
District:	West 2
County:	Cornwall
Country:	England
National Grid Reference:	SW 7379 2728

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1 Summary

Archaeological Consultancy Limited (AC) have been commissioned by Charles Pugh, to provide a Written Scheme of Investigation for the assessment and consolidation of Scott's Quay, in accordance with a brief provided by Joy Ede (Natural England) and Ann Reynolds (Senior Archaeologist, Countryside Advice, Historic Environment Service, Cornwall Council). The assessment will include archaeological recording, a wildlife survey and a structural survey in advance of any proposed consolidation works at Scots Quay (SW 7379 2728), 2 kilometres south-southeast of Constantine.

The present quay appears to have been rebuilt some time after c1907 (Ede and Reynolds, p1), though a number of sections have been repaired in the 20th century and the current structure is suffering from vandalism. Goongilling's Farm of which the quay is a part has entered into a Higher Level Stewardship scheme (Agreement Number AG00315681) and the quay is to be consolidated under the scheme.

2 Site location

2.1 Location

The site is located 2 kilometres south-southeast of Constantine at OS grid reference SW 7379 2728.

2.2 Topography

The quay lies at the southern terminus of a promontory where the Polpenwith and Polwheveral creeks converge to join the Helford to the south.

2.3 Geology

The bedrock is recorded (British Geological Survey) as Mylor Slate Formation - Slate and Siltstone. This sedimentary bedrock formed approximately 354 to 370 million years ago in the Devonian Period, when the local environment was dominated by open seas with pelagite deposits.

Superficial deposits include (British Geological Survey) Tidal Flat Deposits - Gravel, Sand And Silt. The superficial deposits were formed up to 2 million years ago in the Quaternary Period.

3 Project aims

The project aims to:

- to archaeologically record the quay wall
- to identify and evaluate the wildlife value of the quay
- to assess the feasibility and extent of required consolidation
- to provide a specification of the work required taking identified environmental factors into consideration
- to project manage the consolidation works and associated archaeological recording
- to identify future management requirements and management priorities

4 Method statement

4.1 Wildlife survey

The wildlife survey will identify the location of wildlife species using the quay either seasonally or throughout the year and consider their requirements, and the legal obligations under relevant wildlife legislation in advance of any recommended consolidation of the quay.

The wildlife assessment will comprise three elements; a desk study for designated sites, a site survey and a report.

- The desk study will consist of a search of all existing designated sites within 1km of the site using the information held by the Environmental Records Centre for Cornwall and the Isles of Scilly.
- A walk-over site survey will be carried out to:
 - identify the habitats present within and adjacent to the site of proposed works according to the Phase 1 Habitat Survey methodology (JNCC, 1993) and the Marine Habitat Classification (Connor, et al 2004).
 - identify key species of vascular plants and macro algae present.
 - undertake a preliminary faunal survey / habitat assessment to identify the presence or the potential of the site to support legally protected species or species of conservation importance.
- A brief report will be compiled to describe and evaluate the ecological interest of the site, identify likely ecological impacts and mitigation recommendations. Any requirements for further surveys will also be identified. This will be included as an appendix to the main report.

4.2 Archaeological recording

AC complies with the guidelines set out in the IfA's Standards and Guidance and follows the IfA and Institute of Historic Building Conservation codes of conduct. The terminology will be consistent with the English Heritage Thesaurus.

An initial DBA will concentrate on Sites and Monuments Records (SMR), records at the Cornwall Record Office, Courtney Library, historic photographs and other material provided by the client, as well as more recent publications and a map regression exercise. Further research will be undertaken as necessitated by the findings.

A walk over and comprehensive photographic survey will record any extant visible remains on the site and its access route, concentrating especially on aspects most likely to be affected by the consolidation works.

The scaled monochrome 35mm photographic survey will document identified structures in advance of conversion works. This will include: oblique views of the quay in its wider setting, a series of perpendicular shots of the quay wall elevations and additional detailed shots of structural detail as required. Scaled digital colour photography will augment this to provide general and detailed shots and may be used within the report. All negatives, contact prints and

where appropriate, CDs will be included in the archive accompanied by a photographic register detailing as a minimum, feature number, location and direction of shot. A plan will be annotated to show the location, direction and shot number for each photograph as appropriate.

A 1:100 plan will be drawn of the quay and annotated with archaeological detail. The quay face will be drawn at 1:20 or 1:50 as appropriate with representative details as required.

In conjunction with the structural engineer, two small test trenches will be positioned to allow the examination and recording of the make-up immediately behind the quay wall and the foundations of the quay. These will enable the drawing up of a cross-section of the existing quay walling and allow structural assessment of the quay make-up.

If very significant archaeological deposits are revealed, or objects with very significant conservation costs, a meeting will be convened with AC staff, the client, the HEPAO and relevant RCM staff member if appropriate, to discuss the most appropriate way forwards.

4.3 Structural Survey

A condition survey of the quay wall will be undertaken concurrently with the archaeological recording allowing the examination of the test trenches by the structural surveyor. The structural survey will assess the feasibility of repair, highlighting good points as well as looking at defects and identify the remedies required. The surveyor will produce a statement of significance and a statement of guiding principles for the continuing management of the quay wall. The surveyor will identify management and maintenance needed on a continuing basis once the quay is consolidated. Such work will be the owner's responsibility for the remaining duration of the agri-environment scheme.

4.4 Interim report

An interim report will be prepared to describe the results of the wildlife assessment, archaeological work and structural recommendations.

The interim report will contain:

- Background to the project
- Methodology
- Archaeological and historical background
- Description of quay including relevant location plans
- Results of ecological survey
- Results of structural survey
- Scope for further archaeological or ecological works
- Summary of consolidation works recommended
- Summary of future management requirements
- Site inventory including specific management requirements where appropriate
- Bibliography
- Archive

- Copies of historic maps, historic photographs and works photos will be incorporated into the report.

4.5 Review Point

The interim report will be used to inform the review point meeting with Natural England and the agreement holder which will result in the drawing up of a written schedule of repair works and specification of works.

4.6 Final report

Following the consolidation of the quay in line with the schedule and specification of repair works, the interim report will be amended to include an illustrated summary of consolidation works undertaken and any archaeological findings from the watching brief.

Copies of the final report will be submitted to: the client; Natural England Historic Environment Specialist at Exeter; NE Project Officer in Truro; the County Historic Environment Record (HER); Cornwall Record Office; National Monuments Record (NMR) in Swindon and all significant contributors where (with the exception of the client's and contributors' copies) they will be available for public consultation.

4.7 Archive

The archive is likely to be of a documentary nature and will be deposited in a suitable form with the Cornwall Record Office, within 6 months of the completion of the final report.

4.8 Web-based publications

The online OASIS record will be completed when the report is submitted.

4.9 Monitoring

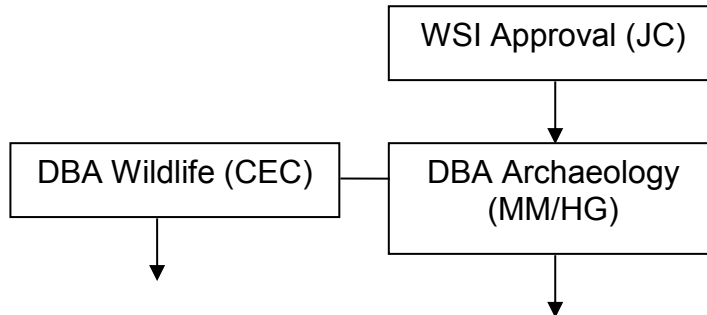
The NE Historic Environment Advisor (NEHEA) will be kept regularly informed of progress, including specifically the provision of the assessment draft report in advance of the review point meeting, written notice of the start of consolidation work, the completion of fieldwork, report production and archive transferral. Any necessary variations to this WSI will be agreed with the NEHEA, preferably in writing in advance of their implementation.

5 Timetable

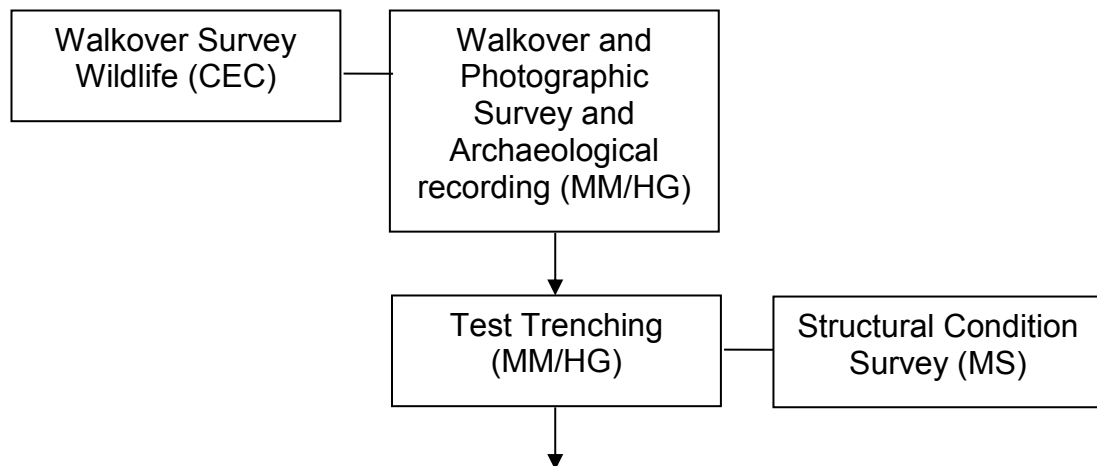
The work is anticipated to commence as soon as we have written approval of this WSI from the **NEHEA**.

Phase 1

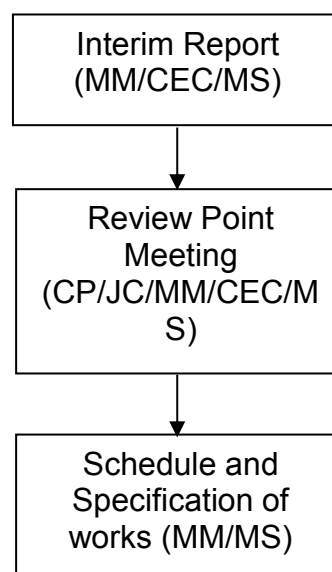
July



August

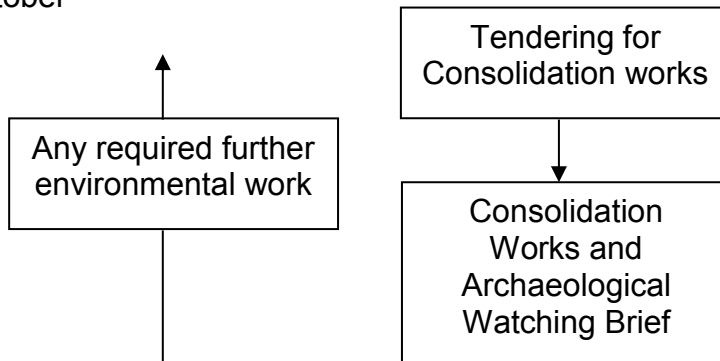


September

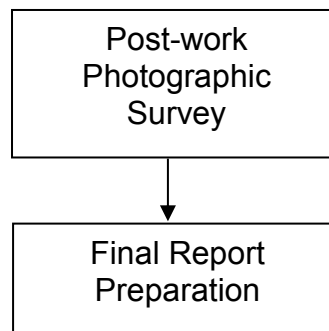


Phase 2 (Dependant on Phase 1 findings)

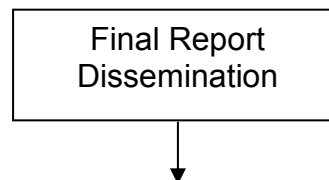
October



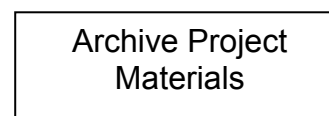
November



December



2013



6 Project management and structure

6.1 Staff

Phase 1 will be managed by Matt Mossop of Archaeological Consultancy Ltd who will also direct the fieldwork and compile the reports assisted by Hayley Goacher (AC) and additional staff as required. Archaeology students from Truro College may assist with the archaeological recording under appropriate archaeological supervision to further their practical skills in line with their course programme and required placements. Associated post-excavation is likely to be

staffed by the same AC team or other staff of comparable skills and experience.

Cornwall Environmental Consultants Ltd (CEC) will undertake the ecological work whilst Mark Smith will undertake the structural engineering work, including the condition survey, the schedule and specification of works, contributing to the report.

On completion of Phase 1 tendering will take place to appoint appropriate contractors for Phase 2 as relevant.

Matt Mossop MA (Hons) MGSDip MIAI Project Manager

Matt has extensive archaeological experience in England, France and Ireland from 1992 onwards, becoming a licensed director in Ireland (2001). He has directed numerous excavations and presented papers for the World Archaeological Congress, Royal Society of Antiquaries of Ireland, National Museum of Ireland, Council for British Archaeology, universities and local groups in Ireland and the UK.

Matt has considerable management experience co-ordinating multidisciplinary projects frequently involving archaeological, ecological and construction teams. He has worked on numerous high profile infrastructure projects in the UK and abroad at everything from EIS through to project completion. Matt previously worked for Frontier, The Devon Wildlife Trust and Cornwall Council amongst other organisations before establishing Archaeological Consultancy Ltd in 2006.

Matt has a special interest in intertidal and wetland archaeology, with a subsidiary post graduate diploma in Maritime Archaeology from the University of St Andrews. He has been responsible for numerous intertidal and wetland projects including assessments, historic building recording, watching briefs, quay stabilisation works and flood defence schemes on sites such as Cobh Harbour, St Mawes, Boscastle, Sladesbridge, Newlyn SBP, Anchor Warehouse, Truro City Wharf as well as the internationally significant excavation of a Mesolithic mooring and fishing platform at Clowanstown 1.

Hayley Goacher BA (Hons) PlfA Project Officer

Hayley completed her BA in archaeology at The University of Durham in 2009 and has archaeological experience, from 2004 onwards, of both excavation and post-excavation, principally with contractual archaeological firms. She joined AC in July 2010 and has since undertaken a number of site assessments, walkover and photographic surveys, historic building surveys, watching briefs, evaluations and excavations most recently including Perran Foundry, Trewarthenick and Gwel An Mor.

Hayley has considerable historic building recording experience including World Heritage Sites, Scheduled Ancient Monuments and Listed Buildings recently lecturing for the Council for British Archaeology on an important early Palladian House at Trewarthenick.

Mark Smith CEng CEnv mCIWEM Environmental Engineer

Mark is a Chartered Engineer, Chartered Environmentalist and Chartered Water & Environment Manager working in sustainable construction and river & coastal engineering.

Mark has very considerable experience as a project executive and senior project manager previously working for the UK Environment Agency running a £50M portfolio of engineering projects. He manages teams of project managers, consultants and contractors to design and construct high quality environmental projects from river restoration and tidal defences to sustainable buildings (BREEAM).

Mark has a passion for sustainable building and is qualified as a PRINCE2 practitioner.

Specialist contractors:

Carl Thorpe	Finds	HES
Imogen Wood	Ceramics	
Laura Ratcliffe	Conservation	RCM
Gordon Cook	C14 dating	SUERC
Dr Ben Gearey	Environmental Analysis and Osteology Birmingham Archaeo-Environmental	
Ecology	Cornwall Environmental Consultants Ltd	

Whilst we endeavour to avoid changes to senior project staff, AC reserves the right to change the nominated personnel if necessary.

6.2 Project facilities and infrastructure

The project will be based at the AC office in Halvasso, Penryn. AC has a computer network running Windows XP Professional and Vista. Report texts are generated in Word 2007 and PDF.

6.3 Health and safety

AC complies with all relevant health and safety guidelines and legislation. A risk assessment will be prepared for the site work and all staff will be briefed on the contents of the final version. PPE will be issued and used as required.

6.4 Insurance

AC has adequate insurance for employer's liability, public liability and professional indemnity. Further details are available on request.

Appendix 3 Context Register

Context	Area	Description	Date	Initials
(1)	TP1&2	Soft brown silt - topsoil	6/8/12	MM
(2)	TP1&2	Compact light orange-brown silty-clay with 15% slate fragments <80mm diameter	6/8/12	MM
(3)	TP2	Soft dark pink silty-clay with 10% angular slate fragments<20mm diameter and occasional shell fragments	6/8/12	MM
(4)	TP1&2	Roughly dressed/faced granite block built quay wall with numerous 15mm diameter drill split marks	6/8/12	MM
(5)	TP1&2	Slate fragments <200mm diameter, with nylon fishing net with 100mm square mesh. A single bent square profile iron nail was recorded in test-pit 2.	6/8/12	MM
(6)	TP1&2	Light brown silty-clay with 40% slate fragments	6/8/12	MM
(7)	TP1&2	Grey sand and slate fragments	6/8/12	MM
[8]	TP1	Cut for Upper Quay walling in Test Pit 1	6/8/12	MM
[9]	TP2	Cut for Upper Quay walling in Test Pit 2	6/8/12	MM
(10)	TP2	Slate consolidation sealing (3) in Test Pit 2	6/8/12	MM
(11)		Slate foundation course for Upper Quay wall	6/8/12	MM