Report No: 2014R001

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CORNWALL COUNCIL

South West Coast Path Project, South Hams, Devon

Archaeological recording

Historic Environment Projects

South West Coast Path Project

Archaeological impact assessments of
sites at Burgh Island, Torcross and West Soar,
South Hams, Devon

Client	**South West Coast Path Project Team (Jo Kiddell)**
Report Number	**2014R001**
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This archaeological recording report was commissioned by the South West Coast Path Project Team, Devon County Council. It was carried out by the Historic Environment Projects team, Cornwall Council.

Within Historic Environment, the project manager was Colin Buck and figures reproduced in this report were compiled by Carolyn Royall, Colin Buck and 'as built' survey drawings by Knevitts Cons. Eng's. The report was edited by Andy Jones.

The South Devon Area of Outstanding Natural Beauty manager was Robin Toogood, and the Devon County Archaeologist Bill Horner. The South West Coast Path Project manager was Jo Kiddell. The structural engineer was Andrew White of Knevitt Cons. Eng.)

The views and recommendations expressed in this report are those of the Historic Environment Service projects team and are presented in good faith on the basis of professional judgement and on information currently available.

Freedom of Information Act

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Cover illustrations

Front cover images (© CC HE Projects C Buck) of each of the three sites described in this report (Burgh Island (top), West Soar (right) and Torcross (left)), following building conservation works in 2013.

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Abbreviations

CC	Cornwall Council
CLS	Cornwall Lime Sand
DCC	Devon County Council
DHER	Devon Historic Environment Record
DHES	Devon Historic Environment Service
DoB	Defence of Britain
EH	English Heritage
EU	European Union
HBC	Historic Buildings Consultant
HEP	Historic Environment Projects
NGR	National Grid Reference
OS	Ordnance Survey
SDAONB	South Devon Area of Outstanding Natural Beauty
SWCP(T)	South West Coast Path (Team)
WWII	World War Two

1 Summary

An archaeological impact assessment was produced by HE Projects, Cornwall Council for three sites (Buck 2012), in the South Hams, Devon. These sites are at Burgh Island (SX 64644385), West Soar (SX 7064 3710), and Torcross (SX 8231 4192). This detailed the site histories and recommendations for sensitive building conservation. Following a separate structural engineering report (Knevitts 2012 (No B7607 July 2012), and detailed specifications within a tender report (Knevitts (No B7607 December 2012), contractors were tendered and building conservation works were undertaken by Ryearch Ltd (of Plympton, Plymouth) from the 9th September 2013 to mid November 2013.

The key archaeological recording results were as follows: At Burgh Island, the impact of conservation works to this building were minimal and limited to remediation for some WWII structural roof and lintel components as well as general lime mortar repointing on all internal and external elevations. In addition, some original timber components were replaced (primarily of WWII origin).

At Torcross, works to three WWII sites were planned. This work included: the remains of two pillboxes, and a mortar bunker/emplacement. For both the pillboxes, over the past seventy years, iron decay and erosion had split and cracked the concrete, particularly the lintels. Treatment was required to arrest this deterioration. Unfortunately, works to the 'outfall' pillbox had to cease as some of the near vertical cliff face on its north side collapsed onto the side and top of the building – making any work dangerous. This site was subsequently removed from the conservation works contract. However, vegetation clearance works to the mortar bunker roof and north side were successful, as was the installation of a grilled doorway to restrict public access. The hotel pillbox was treated for arresting iron bar deterioration, and a small section of wall built to restrict public access to what is a vertical cliff face (and access to the pillbox), to the beach below.

At West Soar is an extremely rare example of an extant Admiralty Signal Station (see Appendix 10.1 for supplementary information). The conservation works to this building focussed on the remediation of significant structural movement to some of the walls. In addition, repointing was required to all exterior (and some interior) faces and roof. Internally, the timber floor joists were replaced and planking to mimic the original construction. The main north facing doorway was fitted with a grilled doorway, to restrict public access.

These conservation works were informed by both archaeological and structural management reports produced in 2012, and the site consultancy ensured that each site's special qualities and importance were mitigated, preserved and enhanced by the building conservation project. This was funded by EU and government grant aid provided through the Rural Development Programme for England.

2 Introduction

2.1 Project background

This report provides information on the building conservation works to three sites in the South Hams District of Devon: Burgh Island (ruined lookout building on site of a medieval chapel at SX 64644385), West Soar (Admiralty signal station at SX 7064 3710), and Torcross (Second World War anti-invasion structures at SX 8231 4192). All of the sites are privately owned, with public access at the discretion of the landowners.

This building conservation project has been led by the South West Coast Path Team - SWCP(T), Devon County Council, and funded by EU and government grant aid provided through the Rural Development Programme for England. The works on the various historic sites have been progressed through a range of local partnerships involving local authorities and AONB services etc, for these sites, South Devon AONB. These sites are a small part of a number of other building conservation projects around the Devon and Cornwall coast path as part of the *'Unlocking our Coastal Heritage' Project.*

The South West Coast Path (SWCP) is seen as a regional 'icon', and a major tourism attraction in its own right, attracting serious walkers and ramblers from all over the UK and beyond. This broad ranging programme of South West Coast Footpath projects has raised the profile of the SWCP as a 'cultural corridor' with a wealth of historic, artistic, and cultural heritage – as well as promoting its more widely-recognised environmental qualities. For the three sites relating to this part of the scheme, the project has conserved, enhanced and aided management of sites on or adjacent to the SWCP that were currently at risk of being irreparably damaged or lost, or which as a result, have been made more accessible for wider audiences.

The partnership of Knevitt Consulting Engineers and Historic Environment Projects (HEP) were successful in their tender for this project (confirmed 5th April 2012). Knevitt's (Project B7067) produced a structural condition survey (July 2012) and a fully detailed specifications and tender document (December 2012) for the three sites, but external factors caused site work to be delayed until September 2013.

The first stage of the archaeological component of this project was production of the archaeological impact assessment report (Buck October 2012, Report No. 2012R045).

This report details the two remaining phases: The second phase relates to Historic buildings consultancy; helping to prepare specifications for the building conservation element, and site consultancy during works. The third phase is a record of archaeological recording after completion of works with production of a watching brief report.

2.2 Aims and objectives

The project brief was prepared by Jo Kiddell of the South West Coast Path Project Team (Devon County Council) which guided the project design which was produced by the Historic Environment Projects. Detailed aims and objectives for all phases are given in the HEP Project Design (reproduced in Appendix 10.2).

The purpose of the historic buildings consultancy, historic buildings recording and archaeological recording was:

- To ensure that the agreed mitigation strategy produced in the proposed archaeological assessment report was followed during the site works.
- To ensure that site works were undertaken in such a way as to maintain the integrity and authenticity of the historic resource, minimising adverse impact upon the resource.


Figure 1: South West Coast Path
Project Sites Location map
Devon
Burgh Island
Kingsbridge
Torcross
Salcombe
West Soar
START POINT
BOLT HEAD
PRAWLE POINT
0
1.5
3
6
Kilometres
© Crown copyright. All rights reserved. Cornwall Council 100049047, 2012.

- To ensure that the highest possible standards of workmanship were maintained during the conservation works, which must be carried out to recognised current best standards in this discipline.
- To ensure that works were undertaken in such a way as to allow adequate recording of remains affected by building conservation.
- To ensure (through site and monitoring meetings), that the methodologies and techniques of all aspects of the site works accord with the method statements and agreed methodologies outlined in the schedule of works and specifications.
- To ensure that there was an agreed appropriate communication link strategy for progress and any issues, etc with the landowner, SWCPT and SDAONB throughout the duration of the project.
- To record sites, features, deposits and artefacts affected by or uncovered by the works for Devon's Sites and Monuments Record.
- To record the character and extent of works to the sites for Devon's Sites and Monuments Record.
- To disseminate the results of the project appropriately and arrange for the deposition of the project archive for Cornwall and Devon's Sites and Monuments Record.

Detailed aims and objectives for all phases are given in the HEP Project Design (reproduced in Appendix 10.2).

3 Project methodology

All archaeological recording work were undertaken according to the Institute of Field Archaeologists *Standards and Guidance for Archaeological Investigation and Recording.* Staff will follow the IFA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology.*

3.1 Historic buildings consultancy

Prior to the start of works, the SDAONB manager agreed with landowners (on site); the scope of works, site access, the location of site compounds and stockpile areas. In the pre contract meeting the structural engineer attended with the SWCPT and site contractors (Ryearch Ltd), to agree a working programme, details of contracts, site constraints, the location/preparation and number of mortar test panels, to agree working methods and any changes to proposed work programme and discuss health and safety issues and other access requirements (as recommended by the SWCPT), to provide safe access and to minimise damage to known or unknown sub-surface archaeological features.

- The HBC (HE Projects) and engineers (Knevitt's), regularly liaised (via email) with the SWCPT. The archaeological recording and HBC roles were carried out within one post.
- The HBC provided historic building conservation advice to the site engineer and site contractor in line with English Heritage guidelines during regular site visits.
- The HBC photographed the buildings before, during and after works took place (digital and archive B/W), and undertook to fulfil any specific recommendations made by Devon's HES.
- The HBC and structural engineer attended at least three regular site meetings; at the beginning, the middle and the end of each contract phase for each site. The meetings also discussed ongoing site conservation work methods, detail of repairs and resolved any conservation work problems. Both the structural engineer and site contractor have a proven track record in historic building conservation.

- The HBC ensured that site conservation works were carried out to standards recommended by English Heritage best practice, and had the opportunity to halt inappropriate or sub-standard work and to inform the landowner and SWCPT, or Conservation Officer as appropriate.
- The HBC had the opportunity to advise the landowner, the Structural Engineer, and the SWCPT where variations to repair and conservation work and recording may have had to be agreed with DCC (Historic Environment Officer).

3.2 Historic building recording

Detailed archaeological recording was undertaken for all newly exposed architectural features and any additional features revealed through excavation. Recording also included the extent of repointing and rebuild (see relevant 'as-built' survey plans and elevations produced by Knevitt's). This function was combined with the HBC role.

- As well as new detail, the nature and extent of all conservation works has been added to the existing archaeological/engineering building survey drawings by the structural engineer as part of the CDM Regulations (provision of 'as-built' survey drawings).
- Measured survey was carried out by hand measurements (using offset techniques at a scale of 1:50), using a paper copy of the survey supplied by the Client. This record was then added to the original survey using CAD (or equivalent) software.
- The resulting survey output is a revised measured survey drawing showing all conservation works that have been undertaken. This has been reproduced at a suitable scale of either 1:50 or 1:100 (appropriate to the size of area recorded) and forms part of the Historic Buildings archive watching brief report. 'As-built' electronic survey drawings have been sent to the SDONB Manager (Robin Toogood) under separate cover.
- If archaeological deposits of a regional or national importance were uncovered, contingency was allowed within the works programme to review options to ensure their preservation *in situ*. In the event that significant remains could not be preserved *in situ*, strategies for their relocation or detailed recording would have been agreed with the Devon County Archaeologist.
- Any variation in named personnel for archaeological recording and historic buildings consultancy would have been agreed with the SWCPT and DCC.
- The site archaeologist/HBC adhered to Health and Safety policies (see below), under the direction of the designated Site Safety Officer.

3.3 Site recording (general)

Site drawings (plans, sections, locations of finds) were made by pencil (4H) on drafting film; all plans were linked to the Ordnance Survey landline map and all drawings includes standard information: site details, personnel, date, scale, north-point.

- The site archaeologist undertook archaeological building recording in line with recommendations given by IFA. Where appropriate sections and plans were drawn on site at appropriate scales to adequately record structures or features at appropriate levels of detail.
- All features and finds have been accurately located by means of a National Grid reference.
- A location plan will be made which will allow site detail to be accurately placed within the context of the Ordnance Survey Landline mapping and produced within either the assessment and/or this archaeological recording report.
- This archaeological watching brief report will detail (and if appropriate summarise) all forms of archaeological recording that has been undertaken at each of the sites.

Each site will have a single archaeological watching brief report that details all project related work to that site.

3.4 Treatment of finds

Assessment and recording during site works did not produce any artefactual material.

3.5 Photographic recording

Black and white scaled photography used a 35mm camera and fine grain archive quality film (400ASA).

- Each shot was carefully composed, focused and lit appropriately with a flash if necessary.

The photo record comprised:

- General views.
- Examples of structural and architectural detail.

Methodology for the archive standard photography is set out as follows:

- Photographs of details was taken with lenses of appropriate focal length.
- Difficulties of back-lighting was dealt with where necessary by balancing the lighting by the use of flash.
- A range of appropriate photographic scales was used and a metric scale included in all archive recording photographs, except where health and safety considerations made this impractical.
- Selected digital images have been scanned into the archive reports.
- Black and white photographs will be archived to HER standards and incorporated into the HES photo database.
- Supporting colour photographs will be taken with a high resolution digital camera (3MP or higher), to illustrate the report and for possible presentation purposes. This will be archived electronically onto each report CD.
- Care was taken that each shot was focused and that with delayed shutter action camera shake did not occur. Each shot was of appropriate quality and used for reports and/or power-point presentation.

3.6 Project archives

Cornwall HEP (CC)

A paper copy of all relevant correspondence relating to the project, the project design, and a single paper copy of the report will be stored in an archive standard (acid-free) documentation box. The project archive will be temporarily deposited in paper form with the HEP (Fal Building), in the medium term will be stored at Re-store (Liskeard) and in the long term with the Cornwall Record Office. All digital records will be filed on the Cornwall Council network.

- An electronic version of all relevant correspondence relating to the project, the project design, the report and digital photographs will be stored on the CC network.
- Black and white photographic prints will be stored in archive standard print holders within an archive box. If appropriate, other photographic records will be supplied with written captions and subject to appropriate batch archiving to be held in safe archival storage.
- Digital colour photographs will be stored according to the Historic Environment Projects, CC guidelines. Copies of the images will be provided to the client on CD.

- Photographic material will be archived and then stored in archive standard negative holders and archive print holders at the RIC Museum, Truro.

Devon HER (DCC)

- The archaeological consultant will contact Plymouth City Museum (if appropriate) to obtain an accession number and agree conditions for deposition.
- Any archaeological finds resulting from the project (which are the property of the landowner), would have been deposited with Plymouth City Museum - in a format to be agreed with the museum, and within a timetable to be agreed with DHES. The museum's guidelines for the deposition of archives for long-term storage will be adhered to. If ownership of all or any of the finds is to remain with the landowner, provision and agreement will be made for the time-limited retention of the material and its full analysis and recording, by appropriate specialists.
- Any drawn archive will be stored in A2 plastic wallets.

4 Site description

4.1 Location, settings and background of the three sites

The study area encompasses three distinct sites in the South Hams District, Devon: Burgh Island, Second World War anti-invasion structures at Torcross and a rare late 18th century Admiralty signalling station at West Soar (Fig 1).

Burgh Island

Burgh Island is a popular and distinctive destination with its famous art deco hotel and famous for its VIP associations, particularly in the nineteen thirties. The site (a ruined 18th century lookout building on the site of a medieval chapel, later re-roofed in WW2 as an Observation Post at SX 64644385), is at the highest point on the south-west side of the island, overlooking the channel. Figure 2 shows its present open grassed aspect, fully appreciated in the summer months but at other times it is windy and exposed to the elements. The island is privately owned although public footpaths go across the island and it can be reached by walking along the connecting beach (accessed via a sea tractor at times of high tide).

Torcross

Torcross, for many generations a small coastal fishing settlement, is now more focussed on the seasonal holiday trade alongside residential occupation. It is located at the southern end of Slapton Sands, one of a number of similar small coastal communities in the South Hams area such as Hallsands and Beesands. There are a number of Second World War anti-invasion structures (SX 8231 4192). All are a poignant survival of perhaps the most significant event which affected this small community. The seaside location has, however, meant that throughout its history Torcross has been vulnerable to severe weather which has inflicted major damage to some buildings, the sea wall defences and even the Dartmouth road.

West Soar

West Soar (Admiralty signal station at SX 7064 3710), is also in an isolated coastal setting, located south-west of Salcombe, and located in what is now an open flat cultivated field. The site and field are privately owned, but the coastal footpath goes relatively close to it, giving a panoramic view of the English Channel. The building was constructed in the 1790s, and originally had an accommodation block attached on its west side (which appears to have had two construction phases). The tower provided height to facilitate visual communication via a stand-alone mast for using a system of balls and flags to communicate both with ships and with other signal stations along the coastline, to both Plymouth and the Admiralty (See Appendix 10.1).

4.2 Statutory Designations

Only the West Soar site is designated as a Listed Building Grade II (EH Building ID: 100728 8/32 at SX73NW).

- All of the sites lie within the South Devon Area of Outstanding Natural Beauty (AONB).
- Torcross lies at the southern end of Slapton Ley National Nature Reserve and SSSI.

4.3 Devon Historic Environment Record sites

The sites (bolded) and close to the study area (not bolded) have all been identified from the Devon Historic Environment Record:

- **Burgh Island Observation Post (52972)**
- **Admiralty Flag Station, West Soar (7031)**

Torcross:

- **Torcross Hotel Pillbox (39402)**
- **Torcross Outflow Pillbox (39403)**
- **WWII Covered Way (Passage) (39404)**
- **WWII Defensive Wall (Gun emplacement) (39405)**
- WWII Pillbox south of Torcross (39406)
- WWII Gun emplacement at Torcross (39407)
- Pillbox near Cove House, Torcross (78710)

5 Archaeological recording results

5.1 General comments

Refer to Figures 2 - 5 for Burgh Island, Figures 6 - 15 for Torcross, and Figures 16 - 25 for West Soar.

- All identified structures and sites are located by a 10-figure grid reference (NGR). In most instances these relate to a point at the centre of the feature/structure. Site location plans for Burgh Island and West Soar are reproduced in the archaeological assessment report – duplication of the same figures are not necessary within this report.
- Specifications for all building conservation works were agreed with the SWCPT, respective landowners and Devon County HES prior to tenders being sought. The historic buildings consultant was part of the project team, to advise on the nature and extent of the works and to undertake archaeological and building recording.
- Only summary site details (and selective images) are given in this report, more detailed site specifications of works undertaken are given in the structural and condition survey report (Knevitts Cons. Eng. Project Ref. B7607), and the specifications and tender report (Knevitts Cons. Eng. Project Ref. B7607 December 2012). However, 'as-built' survey drawings produced by Knevitt's are reproduced within each relevant section of this report.
- The historical and archaeological background for each site is given in detail in the archaeological impact assessment report (Buck 2012). The archaeological recording site inventory reproduces the assessment recommendations followed by a description of works undertaken, and their impacts.

5.2 Burgh Island building

SX 64640 43861 DHER 52972 (WWII Observation Post) DoB 6604

Recommendation (Buck 2012, 31)

Detailed structural recommendations are made by Knevitts Cons. Eng. (Project Ref. B7607 June 2012), but summary comments are given here. The building seems to be relatively structurally sound. However, cracking of the north and south lintels (due to the iron inserts rusting/expanding), will need specialist treatment. It is not recommended to replace these lintels with new equivalents. There will be the necessity of ensuring the tops of the walls are sealed, to restrict water ingress. As these are cement based (from the Phase 3 period), repointing should also use cement. Given the site access issues, a small tower scaffold could be used (and moved around the building). There is also the need for a small amount of deep repointing to the exterior wall face.

Future management recommendations relate to minimising masonry and mortar erosion through weathering, by annual site visit condition checks. Vegetation damage appears to be negligible, as well as vandalism issues. There is no site information provided. In fact, whilst undertaking the field survey interested members of the public frequently asked about the building. It is recommended that summary information is provided by installation of an interpretation board to the inside the building. This should provide an opportunity for those people who want more (i.e. web based information), to have internet links (perhaps to SDAONB).

Site impacts

The overall impact of the conservation scheme on the fabric of the building remnant will be to make an already robust, stable, building able to withstand another generation of weathering and interested site visitors. The visual impact will be negligible.

Residual impact

It is certain that there will continue to be regular visiting members of the public throughout the year. By using the mechanism of trial test panels for matching new lime (and cement) mortar aggregate mixes with the existing colour and pointing style etc, it is hoped that the new mortar pointing will be very similar to the existing, resulting in little visual impact. However, it is sometimes a problem that vegetation growth appears to accelerate once buildings have been conserved (both on the buildings and at ground level). Thus, an annual condition survey is advisable, if finances permit.

Reduction of impact

A method statement may need to be produced by the site contractors in order to describe how site access will be achieved (minimising impact to the footpath routes up to the site). An historic buildings consultancy during the site works may be able to minimise any additional site impacts (i.e. contractor's site access/scaffolding which may adversely impact on potential below ground remains located within the vicinity).

Description of works (2013)

During the week commencing 9th September, the successful tenderers (Ryearch) took materials to both the West Soar and Burgh Island sites in order to prepare mortar panels that reflect the constituents and pointing style of the original lime mortar finish. These were inspected by the structural engineer and historic buildings consultant on 13th September. Unfortunately the mortar mix was pure sand without the correct aggregate and so did not match with the original repointing. It was recommended a further visit to the Cornish Lime Co was necessary.

It was also became apparent to the engineer that *'During the site visit to Burgh Island, it was noted that since our initial survey in May 2012 to carry out a Structural Assessment of the structures, that further deterioration of some areas has occurred.*

Figure 2 External view (from the west) of the Huer's observation building after works showing porch and windows © HE Projects, CC 24/10/2013.

Figure 3 Internal view (from the north) of the Huer's observation building after works showing fireplace, window and WWII roof line © HE Projects, CC 24/10/2013.

On the internal West Elevation, some of the stonework above the existing lintel with the blocked up door has become detached. Consequently, it was agreed that a new timber lintel will be installed and the stonework replaced. This is shown on the attached revised Drawing No.B7607/03A. The soffit to the concrete slab over the door entrance on the West Elevation has deteriorated. It was agreed that this area will need to be broken out and repaired using the concrete repair system. This is also identified on revised Drawing No.B7607/03A' (Knevitt email dated 17/9/2013).

A second site visit was arranged for the 19/9/13 to view revised mortar panels for Burgh Island and West Soar. After obtaining bagged (and washed) sea pebbles (Ballast) to match the original specification, it was recommended that this be sieved to less than 5mm diameter. The following mix ratio was used: Three parts sharp sand (CLS 21), two parts fine sand (CLS 37), two parts lime (i.e, Ratio 5:2), and 1 part Ballast with 1/2 part carbon (or coal soot) when necessary. The aggregate was mixed in a bucket without any mechanical means – given the difficulties of transporting a mixer to site. An experienced stone mason was employed to undertake the repointing at this site. Externally patch repointing was necessary, and internally, deep repointing in places near ground level was necessary (see Figs 4 and 5). In addition the window seats were repaired/rebuilt where appropriate.

Work on this building fell into three categories: Lime repointing, cement and concrete repairs and timber repairs (replacement). The extent of the lime repointing can be seen with reference to the 'after works' images shown in Figures 2 and 3 (and see front cover), whilst the internal and external elevational 'as-built' surveys are also indicative. Generally speaking, the western side of the building needed more repointing than its eastern equivalent, and the exterior to a greater extent than the interior. Given the greater degree of weathering on the west side, the external eastern elevation still had evidence of the original 'lime rendering'.

The cement and concrete repairs all related to the WWII re-use (by addition of shallow pitched roof)of the building as an observation post. Generally, concrete/cement had been mixed with beach pebbles to form lintels with additional iron reinforcing bars. Through time these have been progressively rusting, causing the concrete lintels to split in places. At an early stage it was decided to arrest this process by using 'paint on products' rather than replacing the entire lintels, etc. The concrete treatment used was Fosroc Nitocote SN502, the reinforcement treatment was Fosroc Nitoprime Zincrich and concrete repair Fosroc Renderoc HB. Where appropriate, masonry cracks were either stitched with stone or 6mm stainless steel tie bar system. Missing masonry and voids were appropriately filled to the upper (WWII) sections of the upper flat roof structure.

A new timber door frame was inserted in place of the existing WWII frame which had rotted to the west internal door elevation. The new timber matched the same specification as the original. On the east side of the building, new timber door fixing points were inserted into the masonry 'notches', to aid site interpretation (see east elevation-internal: Fig 5).

A further archaeological recording site visit was undertaken on 7/10/13 and a final visit on 24/10/13. Apart from some additional repointing at ground level internally (completed a few days later), the conservation works were finished and passed as being of an acceptable standard.

The site impacts are essentially visual, in terms of the new lime repointing, although this will fade quickly in time (given its high exposure to the elements). The cement and concrete repairs are far less visible, but should increase the life-span of these structural components and preserve the form of the WWII re-use. A high proportion of these 2013 building conservation works are reversible and overall will preserve the form of this highly visual and iconic building for at least another generation.

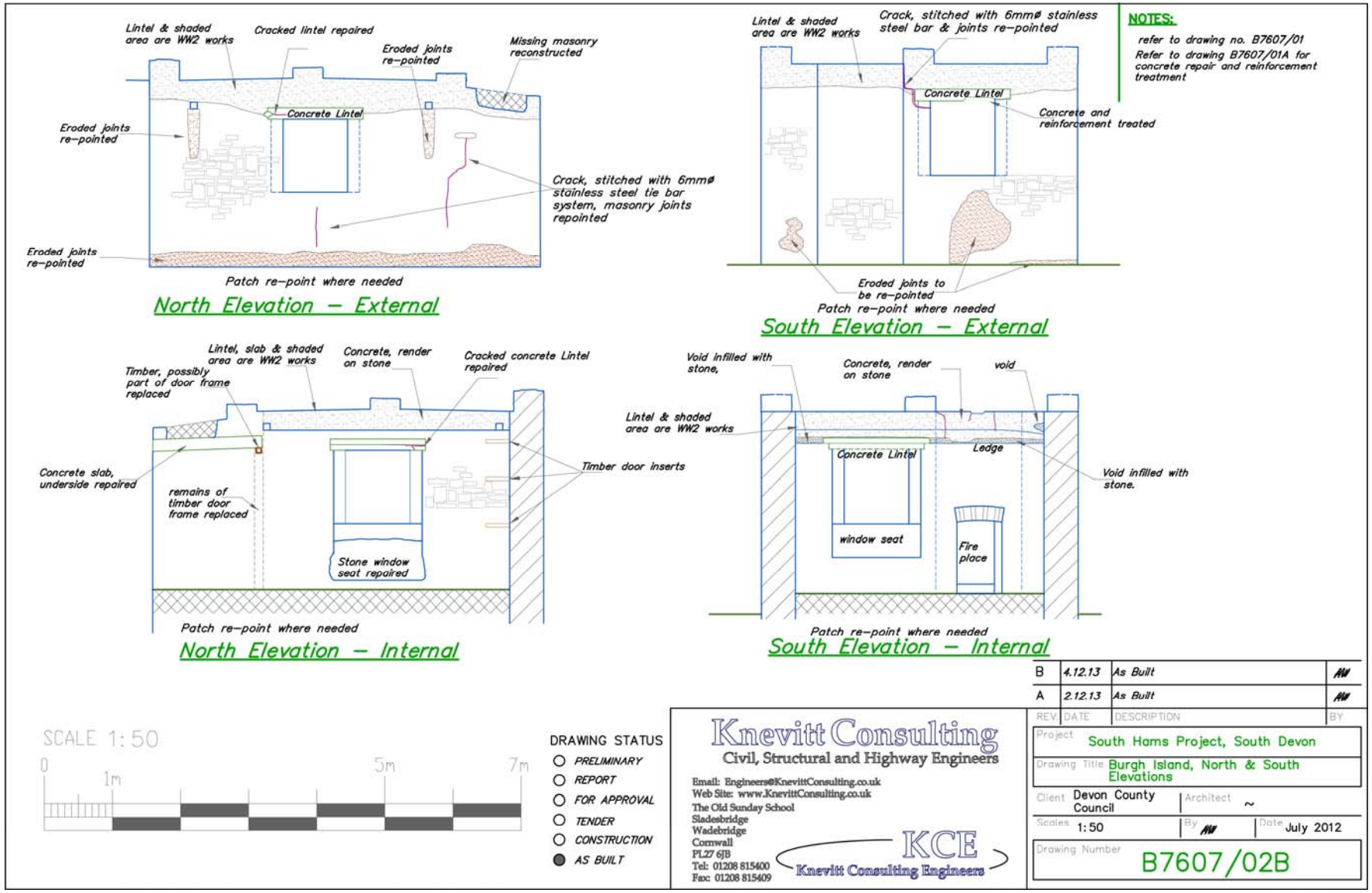

Figure 4 North and South elevational surveys (internal and external) of the Huer's observation building after works © Knevitts 4/12/13.

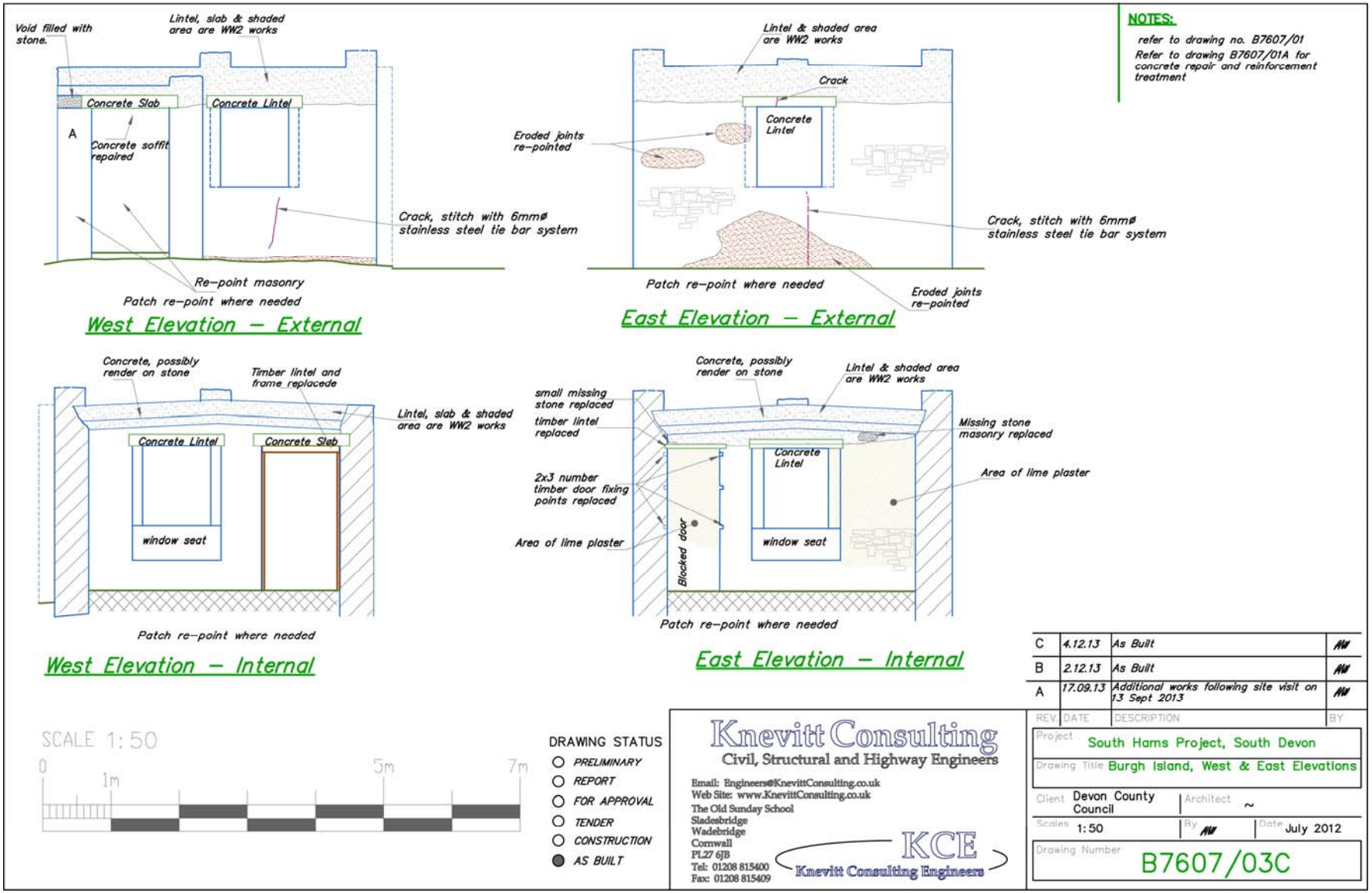

Figure 5 West and East elevational surveys (internal and external) of the Huer's observation building after works © Knevitts 4/12/13.

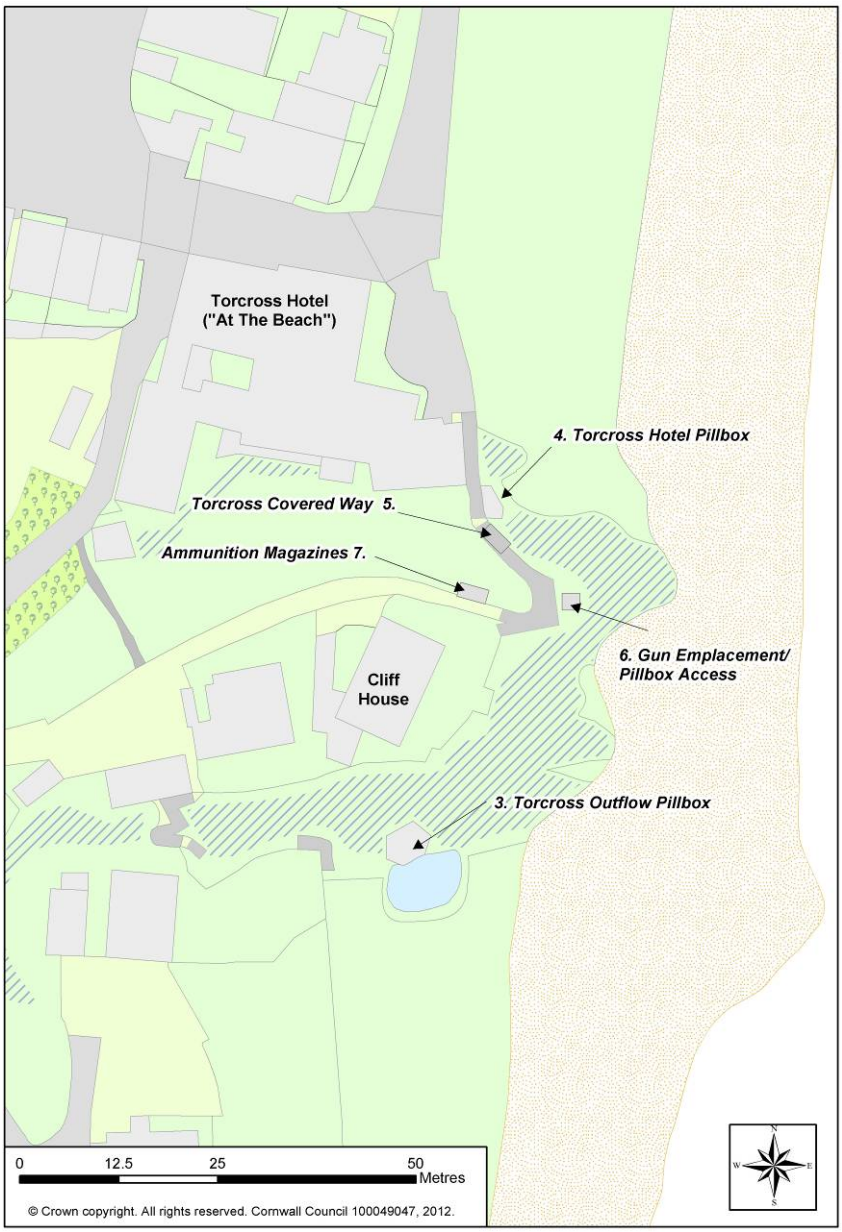

Figure 6 Site plan of the Torcross WWII sites © HE Projects, CC (Buck 2012, 36).

5.3 Torcross outflow pillbox

Note: Works were only undertaken at the Torcross Hotel Pillbox and the (Mortar) ammunition magazine. Works had been planned for the Outfall Pillbox, but a cliff fall onto the structure meant works could not proceed at this site.

SX 82330 41932 DHER 39406 DoB 6529

Recommendation (Buck 2012, 35)

Detailed structural recommendations are made by Knevitt Cons. Eng (Project Ref. B7607 June 2012). A summary of these observations are incorporated into the following account:

The building seems to be relatively structurally sound. However, cracking of the machine gun slit lintels (due to the iron inserts rusting and expanding) will need specialist treatment. It is not recommended to replace these lintels with new equivalents. The top of the stone cladding wall should be sealed to prevent water ingress, and this will be achieved by re-screeding the roof with a similar cement-based

product as existing. There may be a requirement for small areas of additional patch repointing around the stone facing cladding. As these are cement-based (from the single construction phase), repointing should also use cement. The topography is challenging for easy access (see Fig 12), but a small scaffold could be used (and moved around the building) during conservation works, or alternatively, a 'bosun's chair' anchored from the adjacent (higher) rock face. There is also the need to stitch/seal the horizontal crack above the outflow opening lintel.

Future management recommendations relate to monitoring masonry and mortar erosion through weathering, by annual inspections. Vegetation damage appears to be negligible, as well as vandalism issues. There is no on-site information, but perhaps a centralised information board located at Site 6 for all the Torcross WWII sites (3-7), next to the coastal footpath, would be more appropriate. In terms of access management, dialogue with the site owner could be initiated as to whether the interior pebbles should be removed to allow people to enter the building, to further explore/experience its character.

Site impact

The overall impact of the conservation scheme on the fabric of the building remnant will be to make an already robust, stable, building able to withstand another generation of weathering and accessible to interested site visitors. The visual impact of the scheme should be negligible.

Residual impact

It is certain that there will continue to be regular visiting members of the public throughout the year. By using the mechanism of trial test panels for matching new cement based mortar aggregate mixes with the existing colour and pointing style etc, it is hoped that the new mortar pointing will be very similar to the existing, resulting in little visual impact. If finances permit, an annual condition survey is advisable.

Description of works (2013)

Preparatory works were undertaken during the first week of October 2013. This included the pointing of a mortar panel on the south side. On the 7th October the mortar panel was photographed during a site visit, but during a night of the weekend before the visit – sections of the near vertical rock face immediately north of the pillbox collapsed onto the ground obscuring the entrance and its north elevation. Given the instability of the rock face, the SWCPT agreed with the recommendation that it was no longer safe for the contractors to undertake further works to this site. Images reproduced as Figures 7 and 8 show the nature and extent of the rock face collapse, whilst Figure 9 is a reproduction of the survey plan and elevation of the pillbox.

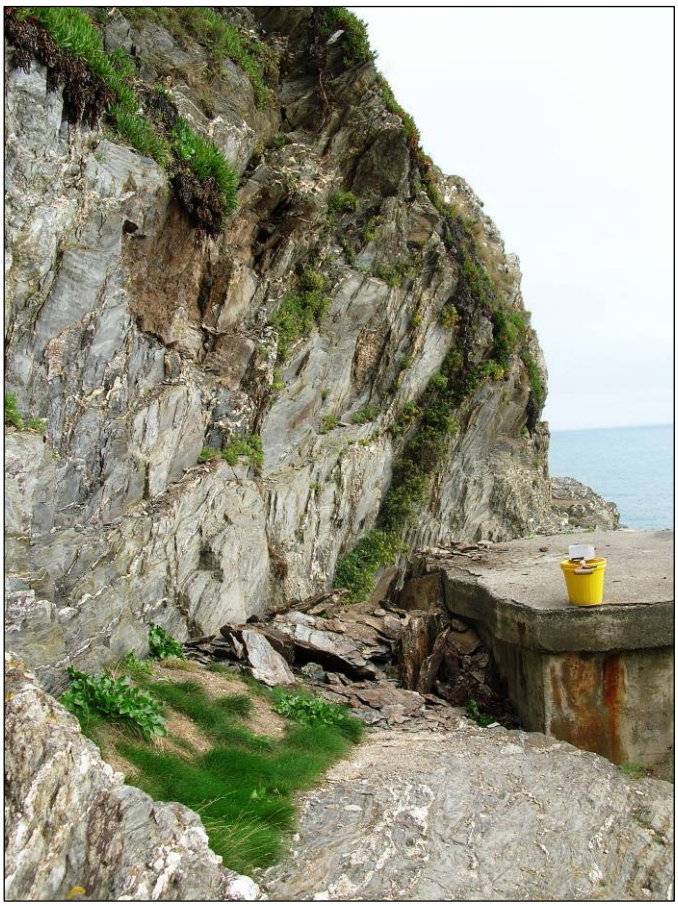

Figure 7 Image (from the west) of the Outflow pillbox rock face collapse © HE Projects, CC 7/10/2013.

Figure 8 Image (from the east) of the Outflow pillbox rock face collapse © HE Projects, CC 7/10/2013.

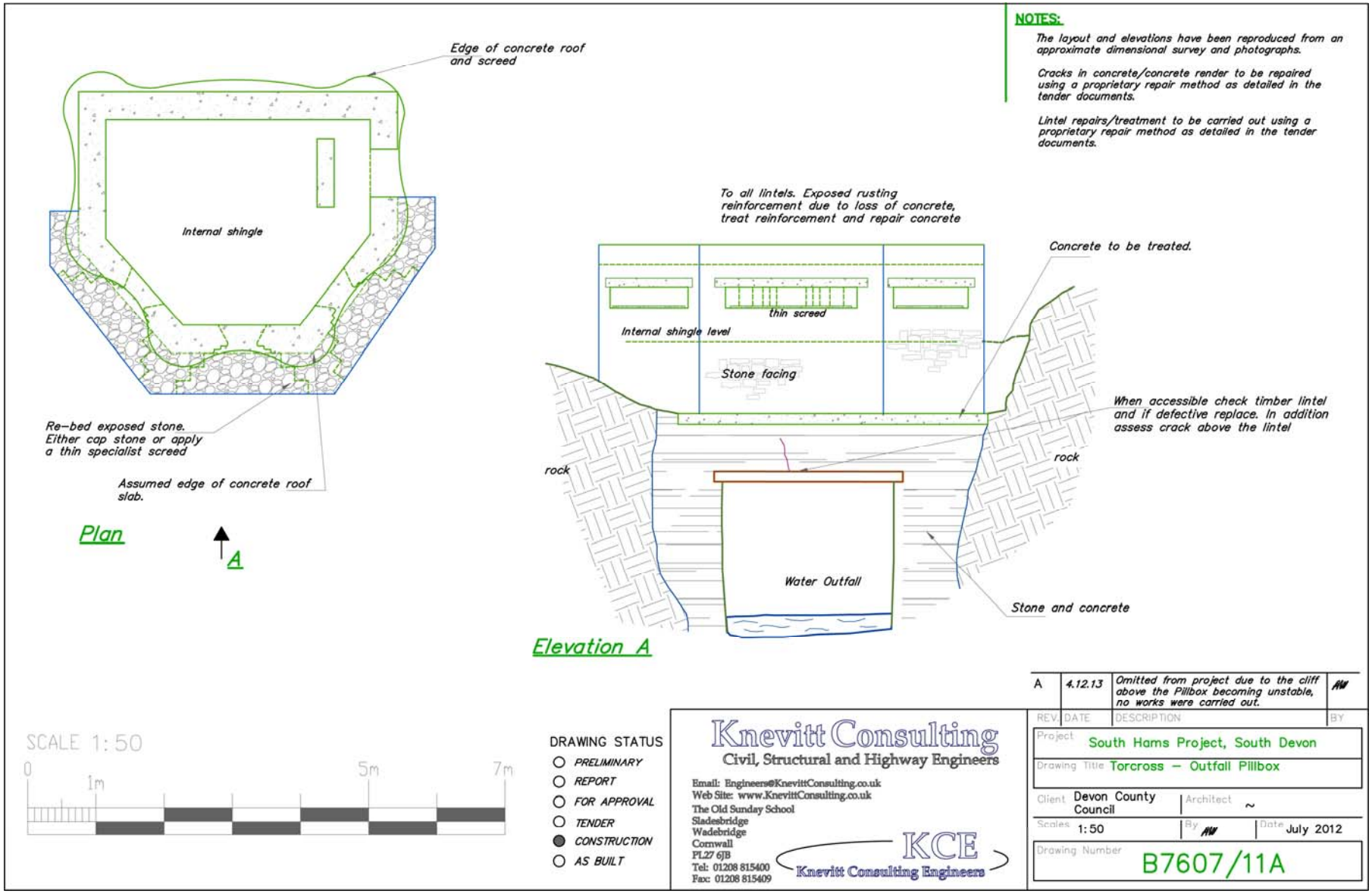

Figure 9 Survey plan and elevation of the Outflow pillbox before works © Knevitts 4/12/13.

5.4 Torcross Hotel Pillbox

SX 82341 41975 DHER 39402 NMR 1320483 (eDoB 23791)

Recommendation (Buck 2012, 39)

Detailed structural recommendations are made by Knevitt Cons. Eng (Project Ref. B7607 June 2012). The building seems to be relatively structurally sound. However, cracking of the vertical iron reinforcing bars and cement surrounds will need specialist treatment. It is not recommended to replace these bars with new equivalents. There may be the necessity of ensuring that the weight of the earth/stones/grass currently on the top of the roof is not structurally affecting the building. Small areas of additional patch repointing around the stone facing cladding are required. As these are cement based (from the single construction phase), repointing should also use cement. Care should be taken not to 'repoint' the possible ordnance 'damage'. Given the site access issues a small scaffold could be used (and moved around the building), or alternatively using a 'bosun's chair' anchored from the adjacent (higher) bank or pillbox roof.

Future management recommendations relate to monitoring its condition by annual inspections for vegetation damage, and vandalism, if finances permit. The site is easy to access from the adjacent footpath (via the blocked doorway). However, there is a health/safety access management issue of the vertical drop near the pillbox and access opening. It is recommended that a metallic handrail is erected to restrict access to the vertical drop of the beach below. Specifications for these proposals will be provided by the structural engineer within the condition survey report. Historical information on this and other WWII Torcross sites could be provided by a single board erected on the side of the gun emplacement parapet wall (Site 6).

Site impact

The overall impact of the conservation scheme on the fabric of the building remnant will be to make an already robust, stable, building able to withstand another generation of weathering and interested site visitors. The visual impact of the scheme will be negligible, unless substantial safety works are undertaken.

Residual impact

It is certain that there will continue to be regular visiting members of the public throughout the year. By using the mechanism of trial test panels for matching new cement based mortar aggregate mixes with the existing colour and pointing style etc, it is hoped that the new mortar pointing will be very similar to the existing, resulting in little visual impact. An annual condition survey is advisable.

Description of works (2013)

Minimal conservation works were necessary for this WWII building. Generally, concrete/cement had been mixed with beach pebbles to form lintels with additional iron reinforcing bars. Through time these have been progressively rusting, causing the concrete lintels to split in places. The impact also of ordnance holes (presumably from WWII US beach landing training events), has, in places, through the impact hole, revealed the iron reinforcement. At an early stage it was decided to arrest this process by using 'paint on products' rather than replacing the entire lintels, etc. The concrete treatment used was Fosroc Nitocote SN502, and the reinforcement treatment was Fosroc Nitoprime Zincrich. These materials were painted directly onto the de-laminating iron structural reinforcement. Figure 12 shows the nature and extent of the conservation works although the new section of wall is not shown on plan.

There was no other conservation works necessary for the building; however, open public access was available straight from the adjacent public (coastal) footpath to the pillbox and to a vertical drop down to the beach below. Given Health and Safety concerns, both the SDAONB manager and the owner thought it appropriate to extend the adjacent walling to restrict physical access, but to permit visualisation of both the

pillbox and the beach below. The HBC suggested that the new walling reflect the style and character of the adjacent (thin slatestone) walling, and that a similar stone was available from Millhill stone quarry near Tavistock. The new stone wall is 0.5m high, 1.2m long, was erected by 14/11/13 and can be seen in Figure 10.

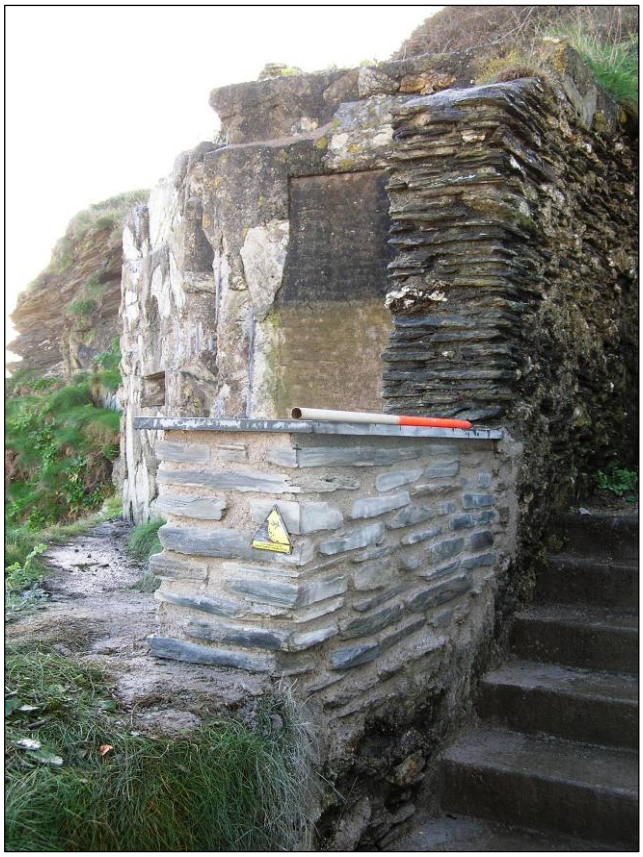

Figure 10 Image (from the north) of the Hotel pillbox repairs and new wall © HE Projects, CC 14/11/2013.

Figure 11 Image (from the south) of the Hotel pillbox works and new wall. The Mortar bunker can be seen top left © HE Projects, CC 14/11/2013.

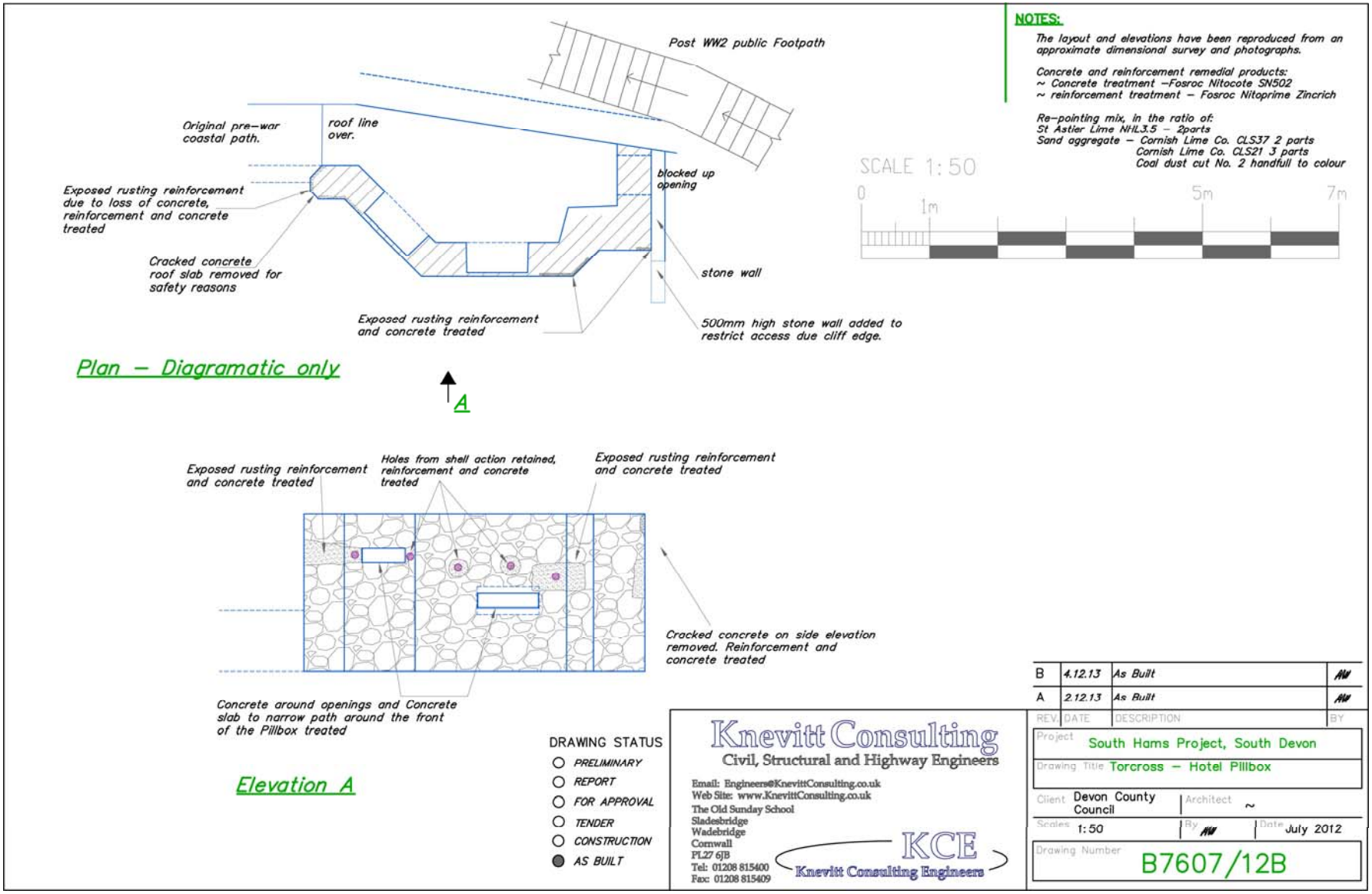

Figure 12 Survey plan and elevation of the Hotel pillbox after works © Knevitts 4/12/13.

5.5 Torcross mortar bunker

SX 8233941963 DHER 39405

Recommendation (Buck 2012, 42)

This excellently preserved (and structurally sound) site is privately owned, albeit next to the coastal footpath. Short term management recommendations relate to clearing and reducing vegetation growth from the sides and top of the building as a high priority. Vegetation clearance also should be carried out around the site entrance and the removal of dumped rubbish from the internal corridor is recommended. There are no recommended building/structural remedial works. For military interest occasional public access (through pre-arranged 'WWII military' guided walks), is recommended, if permitted by the landowner. Installation of a door or grille to restrict unwanted access could be considered. An information board could be sited close by at Site 6,

Site impact/Residual impact/Reduction of impact

The impact of vegetation removal from the site would aid public viewing from the adjacent coastal footpath, and people would understand this site within the context of other adjacent WWII structures.

Description of works (2013)

In order to enable the site to be more visible from the adjacent coastal footpath, vegetation and earth clearance from the flat concrete roof of the mortar and ammunition bunker structure was undertaken and some adjacent bushes reduced in height (see front cover image). In addition, as part of longer term site management, vegetation was removed along the north side of the structure, revealing the original sides of the building (see Figs 13 and 14).

Given that this private site has a low stone wall next to the footpath, and the entrance down into the site from its west end can easily be seen from the footpath, a decision was taken to construct a galvanised metal grilled gate (see front cover image). This was sited at the bottom of the steps in the side walls of the structure (see Fig 15). Figure 25 shows this specification in more detail.

Figure 13 Image (from the east) of the mortar bunker firing point and north side vegetation clearance © HE Projects CC 14/11/2013.

Figure 14 Image (from the west) of the mortar bunker firing point and north side vegetation clearance © HE Projects CC 14/11/2013.

5.6 West Soar Admiralty Signalling Station

SX 70643 37107 DHER 7031

Recommendation (Buck 2012, 47)

This building will need to be scaffolded during works (perhaps one elevation at a time with a tower design). Patch repointing with lime mortar is necessary to all exterior walls, and the roof. It is advisable to analyse a sample of mortar to ascertain the constituents (there appears to be a high lime content). However, the west elevation (weather side), will need more repointing than the other sides. There are structural cracks above all stone lintels, which will need masonry 'stitching', and repointing. Internally, the blocking to both the west and east elevation openings needs to be repaired, and partially repointed. A small amount of internal repointing is necessary. The two remaining timber joists should be removed (both are rotted, one is about to fall). Replacing the timbers would be advantageous for structural reasons, and to help with internal site interpretation, especially if an information board explaining the internal and external layout is used.

Future management recommendations relate to annual inspections (if finance permits), to ensure that there is no vegetation growth over the repointed walls. Patch repointing of the weather side (west) of the building and possibly the roof may need to be undertaken after a decade. In terms of public access, the site is privately owned, there is no public footpath to the site, and so can only be accessed over cultivated land. A desire-line footpath could be agreed and formalised with the landowner. Given its remoteness, vandalism has not been an issue but if the landowner wishes to restrict public access, perhaps a lockable metal door grill could be inserted into the doorway

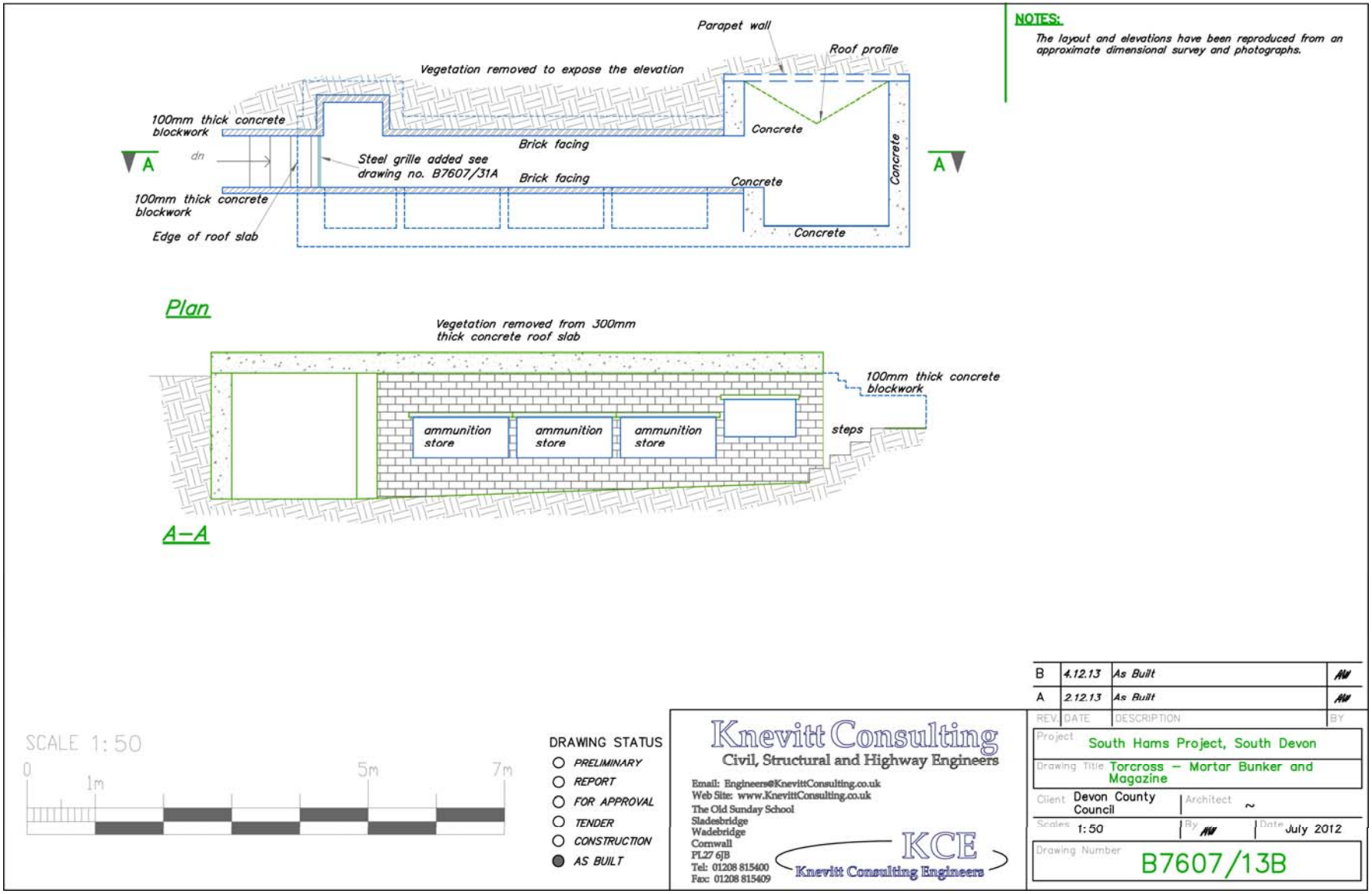

Figure 15 Survey plan and section of the mortar bunker and magazine after works © Knevitts 4/12/13.

(sited to minimise visual impact), and an interpretation sign sited next to the public footpath. Fencing is not recommended as this would have a negative affect on the character, ambiance and setting of the building. Listed Building Consent may be required for these works. A survey to assess whether there are any roosting bats in the building may need to take place prior to any conservation work. Given the historical importance of the site and its interesting operation, it is recommended that an artist be tendered to provide an illustration of the operational use of the building during use.

Site impact

The overall impact of the conservation scheme on the fabric of the building remnants will be to remove old and crumbling mortar, infill where weathering has occurred and replace with new lime mortar. This may well entail repointing some surfaces of the building to retain structural strength, especially where stitching will be necessary (some masonry will need to be added as part of the stitching procedure) and samples of imported stone will need to be approved by the engineer and historic buildings consultant – although some is at ground surface near the building. It is the intention of the project to make the building structurally more stable by replacing the rotted timber joists and this will ensure its long-term maintenance. The unique history of the building is likely to attract guided walks particularly themed ones associated with historical coastal defence. If a doorway grille is inserted to safeguard the building from vandalism, then this low-cost solution would have only a slight impact on the character of the building (the door bolts would be resin anchored between the masonry joints). Fencing the site would have a far greater visual site impact.

Residual impact

By using the mechanism of analysing the existing mortar matrix, and undertaking mortar test panels for matching new lime mortar aggregate mixes with the existing colour and pointing style etc, it is intended that the new lime mortar pointing will be very similar to the existing, resulting in little visual impact. However, it is a known problem that vegetation growth appears to accelerate once buildings have been conserved (both on the buildings and at ground level), thus annual site inspections are recommended. The residual/physical impact of a doorway grille is minimal and preferable to a site fence.

Reduction of impact

The project specifications produced by the structural engineer (Knevitts Report No. B7607 June 2012) should guide any necessary method statements provided by the contractors who are appointed to undertake any conservation work. An historic buildings consultant will be able to advise on minimising impacts and be on hand to record during and after conservation works.

Description of works (2013)

It became apparent (from a member of the public who had researched this site in detail), that the building had been used as target practice for possibly a couple of centuries – given that he had picked up from the surrounding field a number of lead bullets and other larger pieces of ordnance. It was recommended that the building be searched for any other spent (or possibly un-spent) ordnance by the MOD Ordnance Team. During that survey (before the site contractors came to site in early September 2013), some ordnance was found.

During the week commencing 9th September, the successful tenderers (Ryearch) took materials to both the West Soar and Burgh Island sites in order to prepare mortar panels that reflect the constituents and pointing style of the original lime mortar finish. These were inspected by the structural engineer and historic buildings onsultant on 13th September. Unfortunately the mortar mix was pure sand without the correct aggregate and so did not match with the original repointing. It was recommended a further visit to

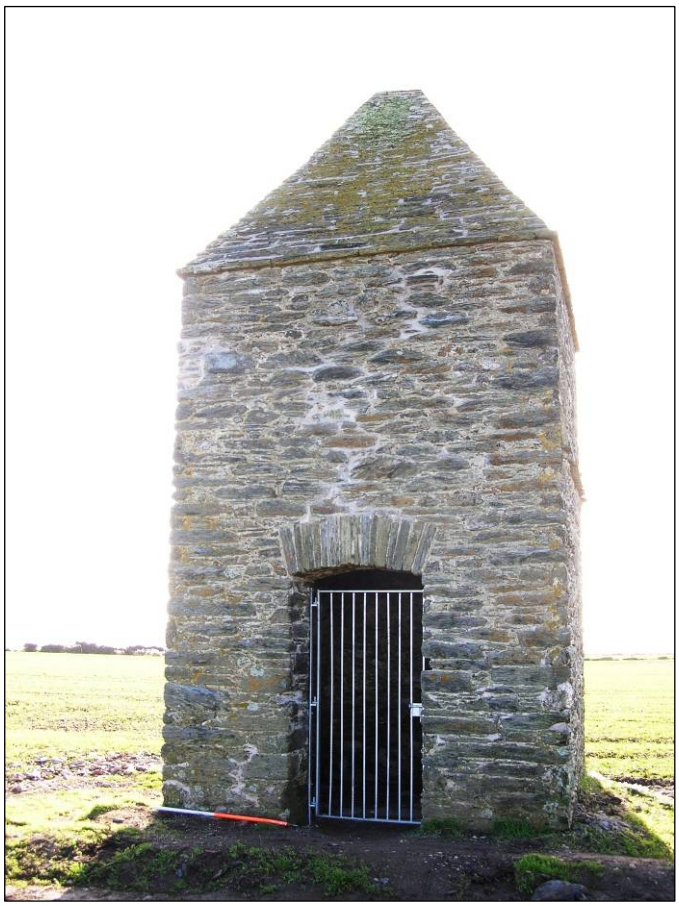

Figure 16 Image of the north side of West Soar Admiralty signal station. New grilled door added © HE Projects CC 14/11/2013.

Figure 17 Image of the south side of West Soar Admiralty signal station. Extent of repointing and binocular opening with sight opening evident © HE Projects CC 14/11/2013.

Figure 18 Image of the east side of West Soar Admiralty signal station. Window opening evident © HE Projects CC 14/11/2013.

Figure 19 Image of the west side of West Soar Admiralty signal station. High percentage of repointing necessary and two phases of former junction with residential block visible © HE Projects CC 14/11/2013.

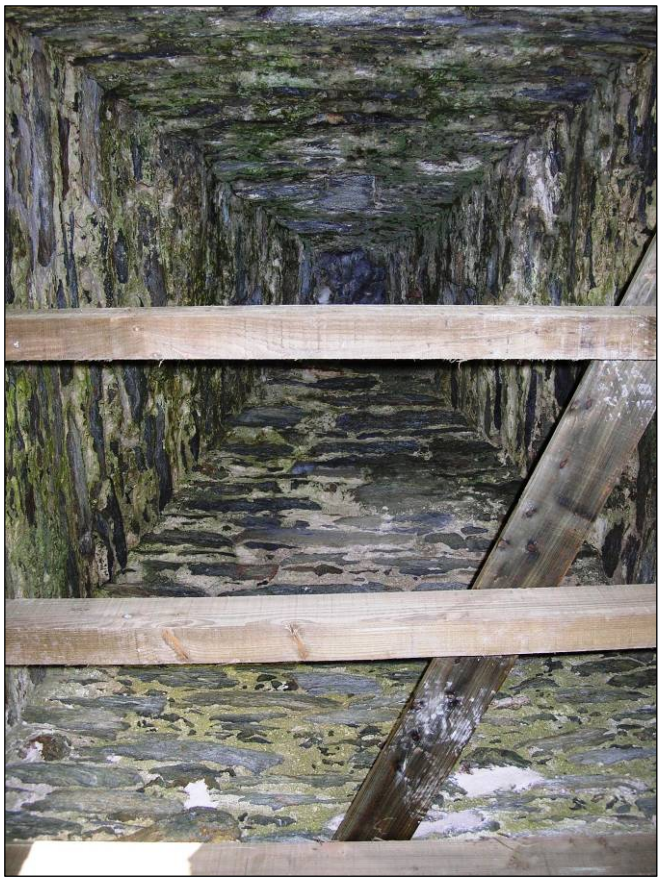

Figure 20 Internal image of the West Soar Admiralty signal station. New timber joists evident and two planks indicative of the floor (to aid interpretation) © HE Projects CC 14/11/2013.

it was necessary to procure aggregate that was more in keeping with the original specification found on the building.

A second site visit was arranged for the 19/9/13 to view the revised mortar panels for West Soar. This mortar mix was much improved, although it was suggested that too much aggregate had been used – but that it be mixed more thoroughly and possibly sieved to remove the larger grit. The following mix ratio was used: Three parts sharp sand (CLS 21), two parts fine sand (CLS 37), two parts lime (i.e, Ratio 5:2), and 1/2 part slate with 1/2 part stone and 1/2 part carbon when necessary. The aggregate was mixed in a bucket without any mechanical means – given the difficulties of transporting a mixer to site.

Externally patch repointing was necessary at all elevations (see Figs 16 to 19) including the stone roof, and internally, a small amount of repointing necessary – especially within cracks in the north and west elevations. A 6mm stainless steel tie bar system was used to stitch the crack in places, as well as stone. The building was scaffolded during the repointing works, and during repointing another piece of ordnance found within the masonry – which again was removed by the MOD Ordnance Team.

Work on this building fell into two categories: Lime repointing, and timber repairs (replacement). The extent of the lime repointing can be seen with reference to the 'after works' images shown in Figures 16 to 19 (and the front cover), whilst the internal and external elevational 'as-built' surveys are also indicative (Figs 21 to 24). Generally speaking, the western side of the building needed more repointing than its eastern equivalent, and the exterior to a much greater extent than the interior.

A further archaeological recording site visit was undertaken on 7/10/13 and a final visit on 24/10/13, when the conservation works were finished and passed as being

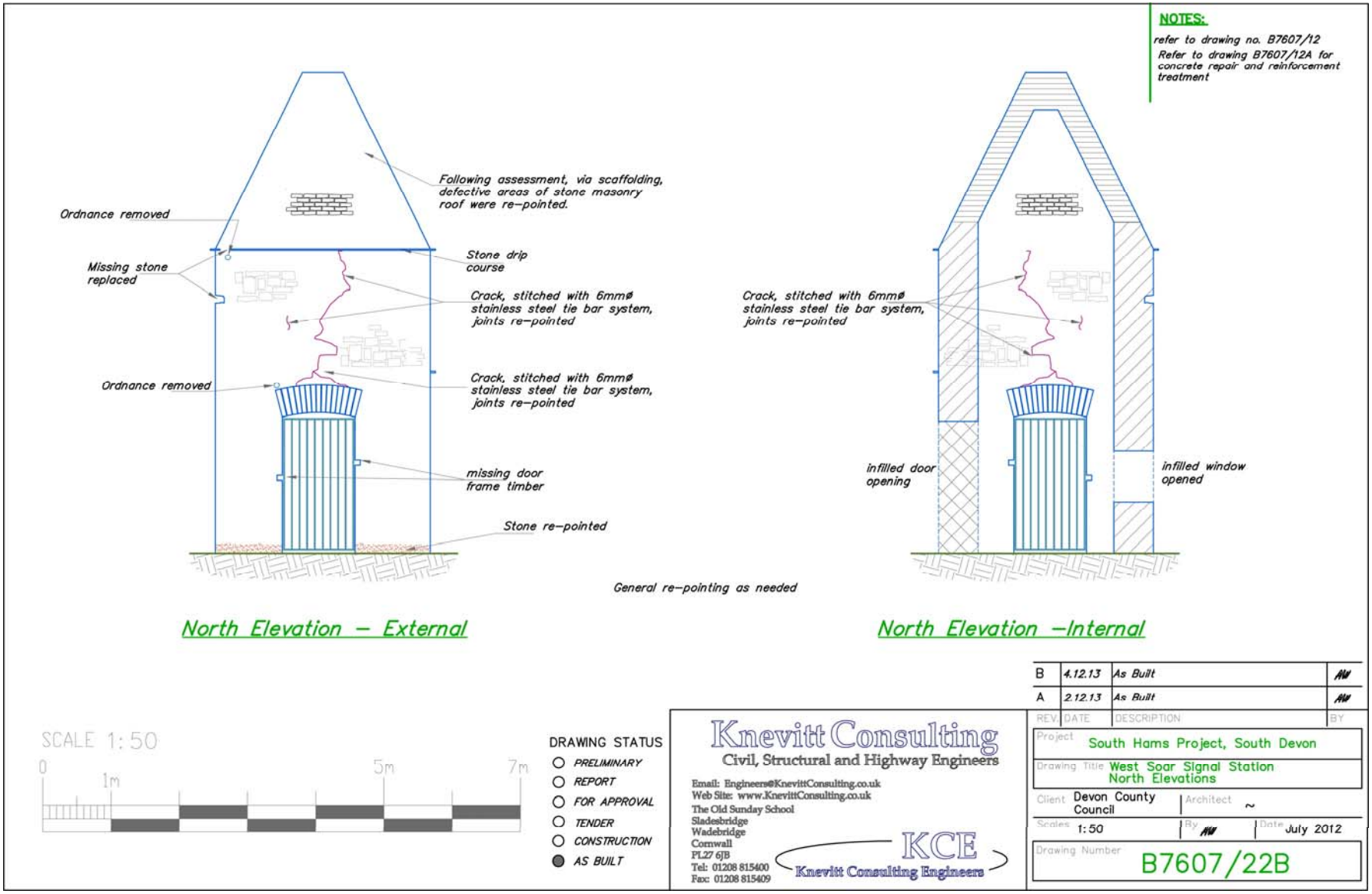

Figure 21 North elevations of the West Soar Signal Station after works © Knevitts 4/12/13.

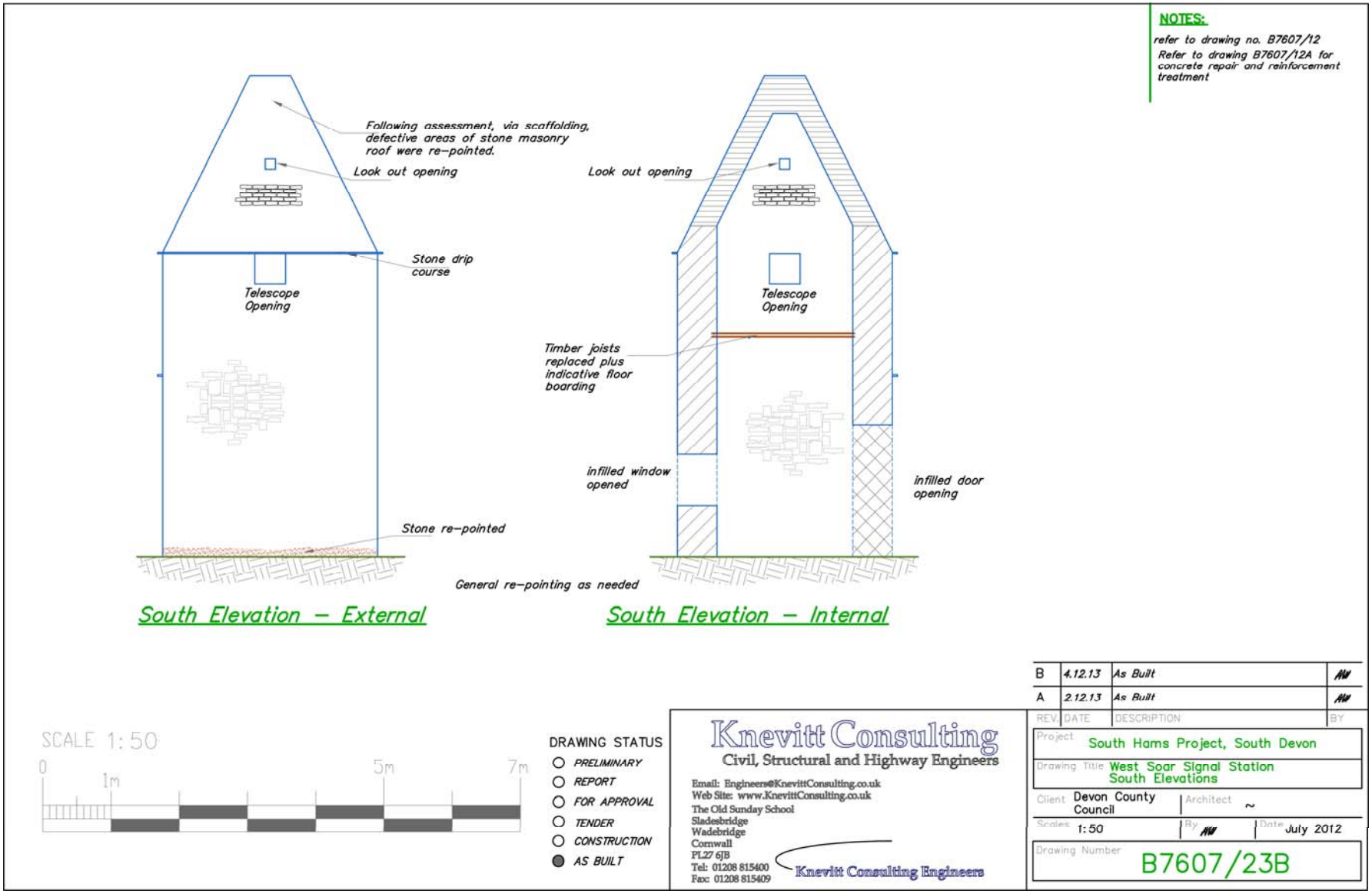

Figure 22 South elevations of the West Soar Signal Station after works © Knevitts 4/12/13.

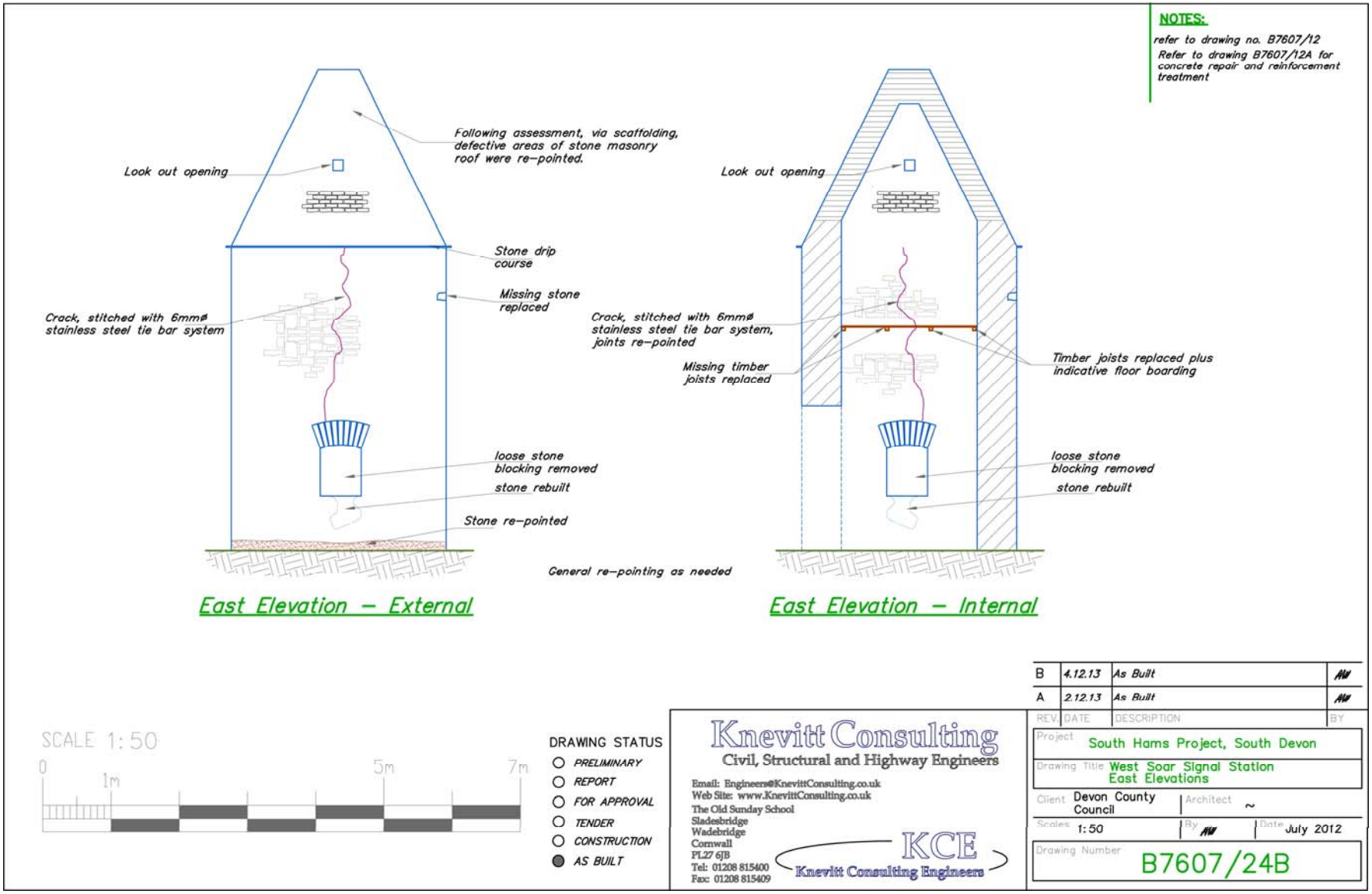

Figure 23 East elevations of the West Soar Signal Station after works © Knevitts 4/12/13.

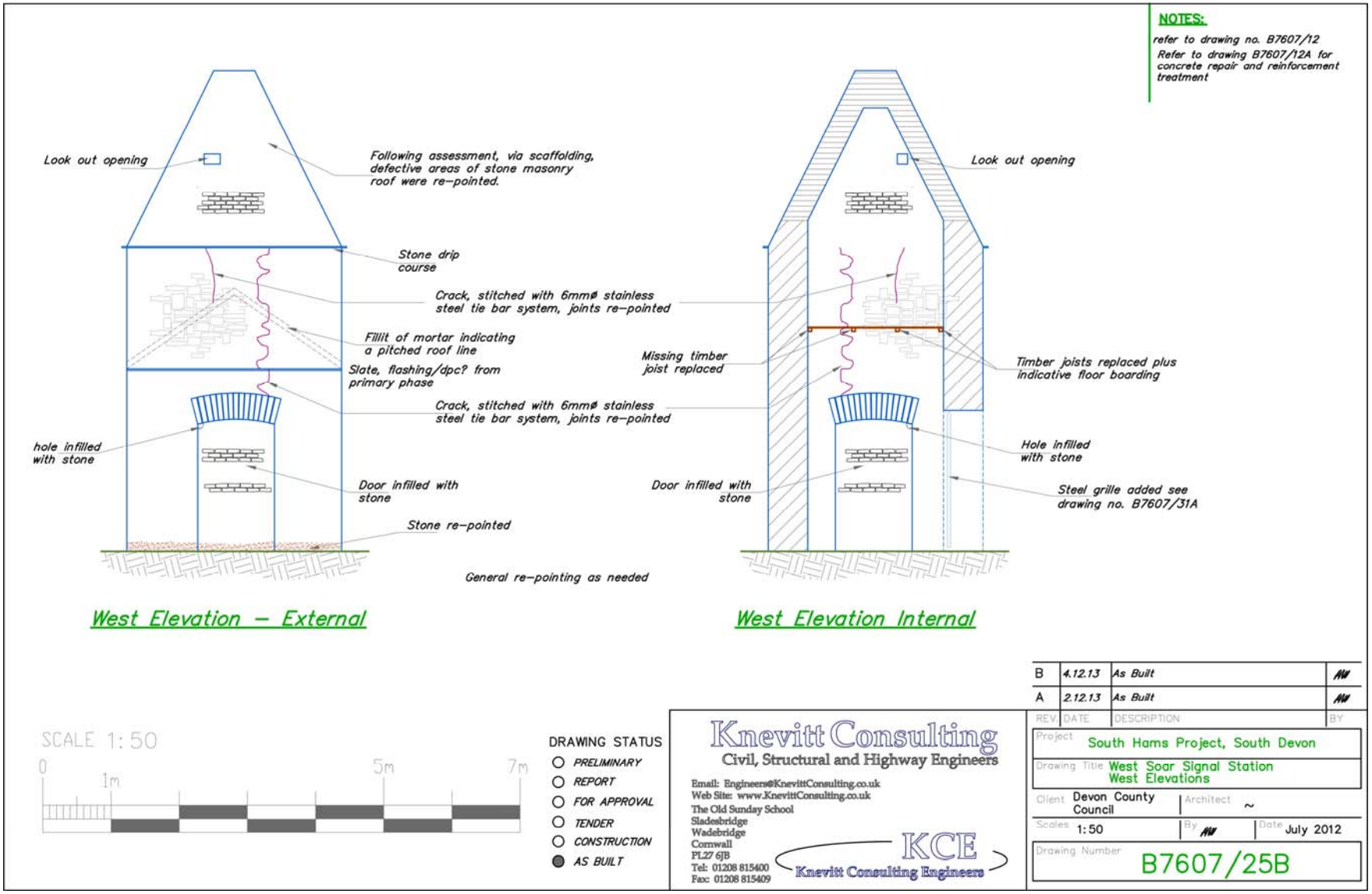

Figure 24 West elevations of the West Soar Signal Station after works © Knevitts 4/12/13.

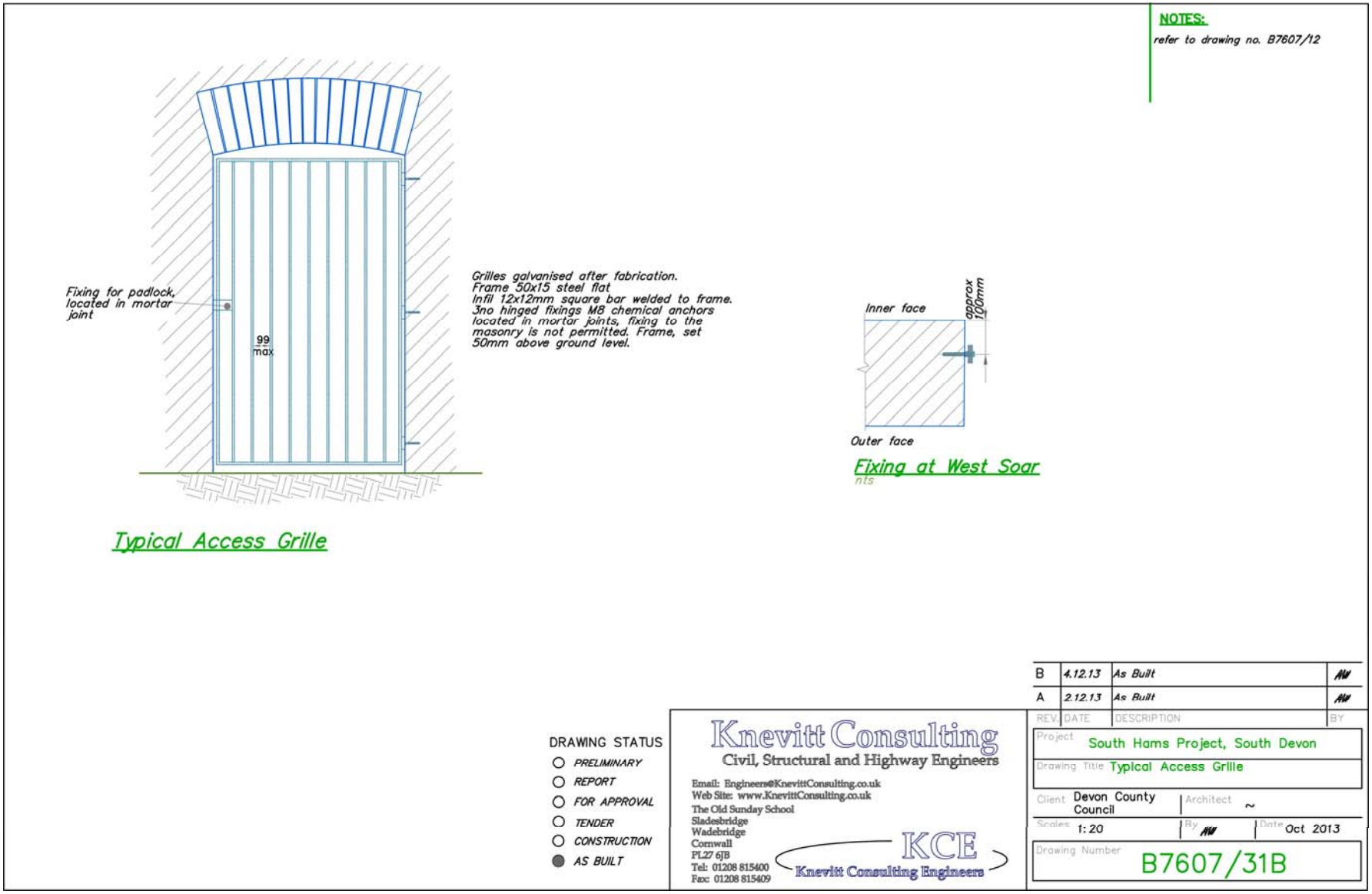

Figure 25 Detail drawing of the grille door fixed at both West Soar and the Torcross Mortar Bunker entrance © Knevitts 4/12/13.

of an acceptable standard. The site impacts are essentially visual, in terms of the new lime repointing, although this will fade quickly in time (given its exposure to the elements). A high proportion of these 2013 building conservation works are reversible and overall will preserve the form of this highly visual and iconic building for at least another generation. See Appendix 10.1 for additional supplementary information.

6 Site Inventory summary

This section of the report summarises the information and management recommendations presented in Section 5.0 (archaeological recording results).

6.1 Summary Management Table of archaeological sites

This following section provides a guide to the site works as well as summarising health and safety mitigation measures.

The significance ratings relate to a combination of factors including the quality and extent of the remains (both within the site and compared to adjacent sites), as well as the importance and understanding of the feature as part of a complex and or group and how it contributes to the overall site character.

Table Notes:

S (Rating)**:** Significance rating denotes the relative significance of **L**ow, **M**edium or **H**igh.

Site No.	Feature	NGR (SX)	Building conservation works	S (Rating)
	Burgh Island		**DHER No. 52972**	
1	Burgh Island building	64637 43860	Structural repairs to north and south concrete window lintels. Lime and cement repointing where necessary. Timber replacements added where necessary.	H
	Torcross		**DHER No. 39402 - 39407**	
3	Outflow Pillbox	82330 41932	No works undertaken due to adjacent rock face collapse.	H
4	Hotel Pillbox	82341 41975	Structural repair to corners where iron reinforcing bars revealed to reduce further de-lamination. Construction of small section of wall as H & S measure.	H
7	Mortar bunker/magazine	82339 41963	Vegetation clearance to enhance visibility of site and grille door to restrict access.	H
	West Soar		**DHER No. 7031**	
8	Admiralty signalling station	70643 37107	Stitch repair north, west and east elevations (internally/externally). Repointing where necessary internally and externally (incl. roof). Replace timber joists.	H

6.2 Public access & interpretation

All of the sites are privately owned. However, public access to (or close to), all the sites via adjacent public footpaths is permissible.

Low impact Interpretation boards have been installed at some of the sites by SDAONB, using the assessment report (Buck 2012) as an information resource. Site location and content was agreed with each landowner and the SDAONB manager. In addition, web based site information and leaflets are planned for production by SDAONB and the coordination of occasional guided walks, as part of a related project.

7 Management recommendations

This section describes the building conservation works to each site's significant assets. The following management recommendations cover a broad range of conservation requirements following a previous summary impact assessment and building conservation guidance. Site management and maintenance guidelines, South Devon AONB management policies and recommendations for further archaeological work, should be taken into account during the post-project stage.

7.1 Future uses/threats/issues

- The WWII defensive structures in Torcross and the Burgh Island (observation) building are not proposed to be Scheduled/Listed by EH, nor in the near future.
- The landowners for all the three project sites have intimated that there are no current plans to re-use or adapt any of the historical structures described in this report.
- Appropriate vegetation clearance and building conservation works will minimise further structural deterioration, preserve the sites for future generations and be more visible for walkers of the coast path. This is particularly relevant for the Mortar Bunker site at Torcross.
- It is possible that due to visitor pressure, erosion could be caused to footpaths up to and near the Burgh Island site. This is unlikely to occur at other sites. Public footpath grants may be available for footpath erosion repair.
- Pre-arranged public access through guided walks and educational school site visits should not result in an additional threat to any of the sites, given their low perceived frequency and guided (informed) nature of their visits.
- Prior to the start of any additional future conservation works, specific low-risk areas on each of the sites should be identified and agreed to allow contractor's vehicular access, site accommodation and a mortar mixing location (as agreed by the landowner). These zones should have minimal impact on the site's historic environment assets.
- For future projects, consultation between the project developer and the relevant agencies should form a cohesive overall site project and conservation plan that not only conserves and protects the main significant site assets, but promotes these in a positive way to ensure safe, informative and pre-arranged educational public access.
- It is unlikely that any future proposed building conservation works will result in major disturbance of below-ground archaeological remains.

7.2 Future site management and maintenance requirements

Future management requirements will vary for each site. However, these broadly fall into specific categories depending on the size, nature and extent of each building or site.

- Buildings or masonry remnants that have been consolidated by repointing and wall

capping (i.e, rebedding the top two masonry courses and mortar pointing to achieve run-off), will need little maintenance, although annual/bi-annual vegetation/weed growth checks and removal may be necessary.

- Masonry conservation sites which are prone to extremes of weather may need surface re-pointing at a greater incidence than slight patching (for wall capping) once every decade. However, it is expected that a high proportion of the sites within the project will not need to be patched. The one exception is the observation building on Burgh Island, given its exposed and high location to the elements. This site will need to be checked every five years for increased weathering of mortar joints, particularly at the west (prevailing wind) side.

7.3 Suggested further work

It is important to ensure that a dialogue is set up for the continued managed preservation of these archaeological/historical sites (perhaps utilising Environmental Stewardship Schemes).

- Although all of the sites are on private land, some discussion to improve access particularly for pre-arranged guided trips (at the discretion of the landowner) may be necessary: possibly through a limited number of guided walks and educational visits from schools. Given the extent and national significance of the WWII remains surviving at Torcross, this site would be a good example where the provision of a guided circular walk is relatively straight forward (close to car parking and other public amenities). This would enable visitors to visit and learn the history and significance of these rare defensive structures.
- The inclusion of all sites in published material (SDAONB guidebooks/leaflets-histories/web sites etc) is recommended. These should include detailed maps derived from research and surveys.
- The SWCP project has not commissioned a conservation management plan to combine the main summary reports of the historical, ecological, geotechnical/structural and archaeological assets, following their respective site surveys and propose ongoing conservation of these significant assets. Therefore a long-term conservation management plan for the surviving archaeological remains is recommended.

8 References

8.1 Primary sources (Site reports)

Knevitts Consulting Engineers, July 2012 B7607, *Structural Appraisal Report: Consolidation works: Burgh Island, West Soar and Torcross, South Hams, Devon*

Knevitts Consulting Engineers, December 2010 B7607, *Structural Safety Works, Contract Documents, Form of Tender, Conditions of Contract, Schedule of Works, Specifications etc – Consolidation works: Burgh Island, West Soar and Torcross, South Hams, Devon*

Knevitts Consulting Engineers, December 2013 B7607, A set of 'As built' survey drawings to accompany the CDM Health & Safety file.

8.2 Secondary sources (Publications)

Buck, C., 2012, *South West Coast Path Project, South Hams, Devon – Archaeological impact assessment* CC HEP

9 Project archive

The HE project number is **2012039** (South West Coast Path: South Hams)

The project's documentary and photographic archive is housed at the offices of Historic Environment, Cornwall Council, Fal Building, New County Hall, Treyew Road, Truro, TR1 3AY. A copy of the report will be deposited in Devon's Sites and Monuments Archive as well as a copy of all digital images.

The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration (File No. 2012039).
2. Digital photographs are archived in Cornwall's Sites and Monuments Archive (R:/Images/HES Images/Devon/SWCP South Hams 2012039).
3. Black and white photographs (**GBP**) are archived under the following index numbers: Assessment GBP 2236/2-37; 2249/2-31
   Watching brief GBP 2322/1-2, 7-19; 2323/23-25, 2324/1-5
4. This report is held in digital form at HE CC as: G:\Historic Environment (Documents)\HE Projects\Sites\Devon\SWCP South Hams (WB) 2012039
5. EH OASIS No. cornwall2-127201

10 Appendices

10.1 Admiralty Signalling stations

Admiralty Flag stations, built along the coastal channel from the late 18th century – to communicate information from ship to shore (and vice versa), were later followed by other forms of optical signalling, namely shutters, then semaphores from the turn of the 19th century. Networks both along the coast and inland were soon constructed, to pass information quickly and efficiently (assuming good visibility). The signalling equipment consisted of a stand-alone 50 ft main post, and two 30 ft flagstaffs. However, the high cost of maintenance and manning, with a lack of all year round effectiveness, meant that the new electric telegraph was preferred from the mid 19th century. It is also probable that these stations were used to transmit weather information, for example the course and nature of advancing storms, etc – an early attempt at weather forecasting, allowing the Admiralty to be forewarned and transmit this information to ships (in-coming or out-going), where possible.

The site at West Soar, is one of the earliest type of flag stations, its construction in stone (rather than timber and canvas as was the case for many), has ensured its survival (in its original isolated coastal setting), although its associated accommodation building has not survived.

In 1795 the Admiralty ordered the erection of signal stations all along the Channel Coast to maintain a watch against a potential French invasion following the onset of war with France. Sites were chosen for their good sight lines out to sea and along the coast to the next signal station. The land was compulsorily rented from the landowner, who was to have the option of keeping the buildings when they were decommissioned.

Prefabricated timber huts were sometimes supplied, together with a signal mast, signals and a code book. These prefabricated huts were to be roofed with canvas sections weatherproofed with tar. Perhaps the West Soar building was also coated with tar (virtually all of which has been weathered away). They were to be managed by (often retired) Royal Navy Lieutenants with a staff of up to three men who were to maintain a constant watch and sleep on site. Following the introduction of the Sea Fencibles in 1798 the Signal Stations came under the jurisdiction of the Captain in

charge of the Sea Fencibles in that district, and again in 1803 on the re-activation of the Fencibles, until the demise of the Sea Fencibles in early 1810.

Other comments of note include:

On 24th June 1803 the Admiralty issued a circular to the signal stations on the coast directing them to send in a report listing all transactions that have been carried out, and including details of the wind and weather, etc.

On the 19th November 1803 it is reported that the naval signal stations along the coast were directed to make certain signals in the night, by burning one or more blue lights, accompanied with a fire-blaze of no long duration. Care wss to be taken by army personnel manning their beacons not to confuse signals from the naval signal stations with those from the army beacons.

In addition to the transmission of messages the presence of French privateers on the coast was noted and transmitted for the benefit of the merchant service and for directing RN cruisers to where the privateers were lurking (for example, on 14 May 1807 a signal was made at 1 pm from a signal post to the east, and repeated at Maker, of a privateer being off the Start). The following signals were particularly for the benefit of merchant vessels:

a. For an enemy frigate or frigates = 1 ball above a flag.

b. For the enemy's small cruisers = 2 balls above a flag.

c. For an enemy's ship or vessel close under the land = 3 balls above a flag.

Similarly the Customs and Admiralty Boards arranged that the coast signal stations would signal the presence of suspected smuggling vessels in the offing and perhaps transferring goods out at sea to smaller boats, or waiting for nightfall, and in the event of the revenue vessels making a capture the signal station would be entitled to a portion of any prize money arising from the information.

On 29th June 1812 the then current method of communication by flags and balls was reviewed in favour of something similar to the French method, i.e. using a high pole with hinged signal arms (semaphore). The persons employed in sending and repeating signals are to be accommodated in a building on which the signal mast will be erected. This was put on hold until the peace. However, following the end of the war with France, it was proposed to maintain the coast signal stations as a means of curtailing the activities of smugglers, and in some cases this was certainly the case, as it would appear that the coast guard took over some of the signal stations following the termination of the coast blockade in about 1830-31, but it would appear that most of the signal stations were slowly disposed of over time.

(excerpt from *'Signal Stations during the Napoleonic Period and Afterwards - Some Miscellaneous Notes'*)

http://freepages.genealogy.rootsweb.ancestry.com/~pbtyc/RN/Signal_Stations.html

Colin Buck (revised)

Revised December 2013

10.2 Project design for assessment, historic building and archaeological recording consultancy

A submission to Devon County Council

South West Coast Path Team: South Hams

Project Design

for

Assessment, Historic Building and Archaeological Recording Consultancy for

Sites at Burgh Island, Torcross and West Soar,

South Hams, Devon

Colin Buck Dip. Arch MIFA

January 2012

HISTORIC ENVIRONMENT PROJECTS

Cornwall Council

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Client contact:	Jo Kiddell
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1 Background

1.1 Introduction

This project design (with separate costings) includes the combined stages of production of an archaeological/historical assessment report, provision of an Historic Buildings Consultancy and archaeological recording for a buildings conservation scheme to three sites in South Hams, Devon: Burgh Island (ruined lookout building on site of a medieval chapel at SX 64644385), West Soar (Napoleonic period Admiralty signal station at SX 7064 3710), and Torcross (three Second World War anti-invasion structures at SX 8231 4192).

This Project Design (PD) has been prepared by the Historic Environment Service (Projects), Cornwall Council, to set out how the archaeological assessment, historic building and archaeological recording consultancy works are to be undertaken. These consist of an appropriate level of historic building consultancy work with a structural engineer (A White of Knevitt's), and historic building/archaeological recording, all of which is required by the South West Coast Path Project Team (Devon County Council). It is considered appropriate that a PD should be produced by the archaeological contractor for:

(1) Production of an archaeological/historical assessment report

(2) An historic buildings and safety works consultancy for the supervision of conservation works to all three sites

(3) A programme of archaeological recording

This PD will be submitted to the South West Coast Path Project Team (Devon County Council), at the tendering stage for approval, setting out the project methodology and standards. A separate document will be provided by the Structural Engineer (Knevitt's Ltd).

1.2 Project Background

The 'Unlocking our Coastal Heritage' Project (excerpts from the commissioning brief):

The South West Coast Path (SWCP) is a regional "icon" – and a major tourism attraction in its own right, attracting serious walkers and ramblers from all over the UK and beyond.

This broad ranging programme of projects aims to raise the profile of the SWCP as a "cultural corridor" with a wealth of historic, artistic, and cultural heritage – as well as its more widely-recognised environmental quality. By so doing, the quality of the product will be improved, new users will be attracted, repeat visits increased and expenditure in local businesses raised.

Distributed along the full length of the SWCP, historically and archaeologically significant sites abound; from mining infrastructure to ritual burial sites, and from modern signal and lookout stations to ancient defensive fortifications. The project will conserve, enhance or manage up to 45 sites on or adjacent to the SWCP that are currently at risk of being irreparably damaged or lost, or which could be made more accessible for wider audiences.

The project is led by the South West Coast Path team within Devon County Council, with EU and government grant aid provided through the Rural Development Programme for England. The works on the various historic sites are being progressed through a range of local partnerships involving local authorities, AONB services, the National Trust etc.

Cornwall Council (CC), Historic Environment Projects (HEP) were asked by Knevitt Consulting Engineers (email dated 20/1/12), to supply a cost estimate for working in partnership to fulfil the main tenets of the project brief (Historic Building Consultancy (HBC) for the conservation of historic structures accessed by the South West Coast Path in South Hams). It should be noted that HEP have worked with Knevitt's Consulting Engineers to undertake building conservation schemes to a large number of historic building sites (including Listed and Scheduled Buildings), for the past decade (including the South Hooe project – used as a project methodology template for this tender).

The archaeological component is described in the remainder of this project design, and includes production of an historical assessment report, historic buildings consultancy (before, during and after works), and an archaeological recording report detailing the impacts of before and after building conservation works to the three sites.

1.3 Project outline

The Historic Environment (HE) Projects will:

- Supervise (with the structural engineer), the historic buildings conservation aspect of the project (incl. liaising with the South West Coast Path Team, the Project Steering Group, the SDAONB, and Conservation Officer.
- Provide HBC for the structural engineers (Knevitt's) to produce a condition survey assessment report (with EH Level 2 building survey plans), and produce detailed building conservation recommendations, produce a project Specification document, tender for site contractors, supervise structural works on site and produce an 'as built' report.
- Produce an archaeological/impact assessment and management/maintenance requirements report for all three sites. The archaeological assessment and structural reports will identify general repair proposals for each structure as part of the general management recommendations.
- Provide an historic buildings and safety works consultancy to form the building conservation proposals (with the structural engineer), and to supervise conservation works to all three sites.
- Undertake archaeological recording before, during and after site works.
- Produce an archaeological recording report to describe the nature and extent of the building conservation works (incl. structural engineers 'as built' survey drawings).

2 Site information and structures to be treated

The suggested level of assessment/archaeological consultancy/recording is given below.

- Historic Buildings Consultancy prior to and during the proposed works.
- Archaeological recording of those works are required for each archaeological site.
- The archaeological watching brief report will disseminate the results of the consultancies, measured surveys, and photography.

To summarise, the following (pre-assessment) South Hams, Devon archaeological sites are identified as being affected by the proposed building conservation project. The sites given in the table are reproduced from the project brief (Kiddell 2011).

Site No	Site Name	Proposed works	NGR (SX)
1	**Torcross:** (three Second World War anti-invasion structures)	Building recording; building conservation work (scaffolding,minor treatment of spalled concrete, installation of grills/gates to manage public access; Information summary for interpretation.	8231 4192
2	**West Soar:** (Napoleonic period Admiralty signal station).	Building recording; scaffolding; building conservation work (localised crack stitching, masonry consolidation, occasional repointing and in-filling of voids); information summary for interpretation.	7064 3710
3	**Burgh Island:** (Ruined lookout building on site of medieval chapel)	Building recording; building conservation work (localised repairs to stone capping of walls, localised re-pointing, possible replacement of lintels; information summary for interpretation.	6464 4385

3 Aims and objectives

3.1 Assessment Survey

The assessment survey project for the South Hams Project aims to provide a report based resource to inform Devon County Council SWCPT. The report will:

- Provide an understanding of all three sites building developmental archaeological and historic environment history through archive research and fieldwork survey.
- Carry out an archaeological site survey for each site to identify archaeological remains (and describe their condition), and to investigate the potential for related buried features close to the coastal footpath.
- Assess the feasibility for building consolidation and provide an outline of the scale and extent of building conservation work with the appropriate level of analysis and building recording (specified to EH Level 2 standard).
- Identify and prioritise necessary consolidation works in terms of short, medium and long term objectives.
- Identify the need for further archaeological recording and investigation.
- Propose appropriate priorities for conservation management recommendations to ensure that each site's special qualities and importance are preserved and enhanced by any landscape conservation proposals (minimising any adverse impact upon the archaeological resource).
- Guide future long term management of the site, buildings, access routes (within the site for the landowners), and their interpretation to members of the public.
- Assess the importance and significance of individual and grouped features in terms of local, regional, national or international historic landscape criteria, in conjunction with stated research questions for events, periods and processes.

- Provide a resource for grant funding for building conservation works and any necessary statutory consents.
- Disseminate and publish the results in a medium that can be utilised by information boards, leaflets, booklets, WHS web site and related sites.

3.2 Historic buildings consultancy and historic buildings/archaeological recording

The purpose of the historic buildings consultancy, historic buildings recording and archaeological recording is:

- To ensure that the agreed Mitigation strategy produced in the proposed archaeological assessment report is followed during the site works.
- To ensure that site works are undertaken in such a way as to maintain the integrity and authenticity of the historic resource, minimising adverse impact upon the resource.
- To ensure that the highest possible standards of workmanship are maintained during the conservation works, which must be carried out to recognised current best standards in this discipline.
- To ensure that works are undertaken in such a way as to allow adequate recording of remains affected by the works.
- To ensure (through site and monitoring meetings), that the methodologies and techniques of all aspects of the site works accord with the Method statements and agreed methodologies outlined in the Schedule of Works and Specifications.
- To ensure that there is an agreed appropriate communication link strategy for progress and any issues etc with the landowner, SWCPT and SDAONB throughout the duration of the project.
- To record sites, features, deposits and artefacts affected by or uncovered by the works for Devon's Sites and Monuments Record.
- To record the character and extent of works to the sites for Devon's Sites and Monuments Record.
- To disseminate the results of the project appropriately and arrange for the deposition of the project archive for Cornwall's Sites and Monuments Record.

4 Project methodology

All archaeological recording work will be undertaken according to the Institute of Field Archaeologists *Standards and Guidance for Archaeological Investigation and Recording.* Staff will follow the IFA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology.*

4.1 Project management

The principal factor in effective project delivery will be the employment of key project staff who are expert in the management and recording of the industrial heritage. Historic Environment Service project staff are able to draw upon a substantial and experienced track record in undertaking similar work throughout Devon and Cornwall, as well as a detailed knowledge of the project areas:

- 2001 – 2006: Archaeological assessments of a number of mine sites on the Devon side of the Tamar valley (for mine site conservation works incl: Devon Great Consols Mine (over 500 archaeological sites, Bedford United Mine (180 archaeological features), Wheal Russell Mine (65 archaeological features: Buck 2005), Gawton Mine (70 archaeological features).

- 1996 – 2011: Supervised conservation to numerous 18th to 20th century buildings as an Historic Buildings Consultant acting for Cornwall Council, Devon County Council (TVMHP), Natural England (including South Hooe), and private developers.

Section 6 is a brief summary of previous experience in this field by the CC HEP, Senior Archaeologist (MIFA) who will be undertaking HBC for the project, carrying out the assessment survey and producing the final report. Appendix 11.1 is a personal description of Archaeological/Historic Building Consultancy work and Appendix 11.11.2 is a summary of CC HE Projects work experience.

It is expected that there will be a meeting with the SWCPT at Totnes at the outset of the project (prior to fieldwork) to confirm the programme, timetable, working arrangements (incl. physical access and landowners consent etc), during the course of the project and appropriate monitoring points.

4.2 Archaeological desk based assessment survey

Carry out a desk-based assessment of all three sites, to gather historical background, site significance and to establish their historical development and relationship with adjacent sites. Documentary and archive map data will be collected from Devon County Record Office. The following sources will be consulted:

- Devon Historic Environment Record (including archive/un-catalogued reports), Exeter
- Devon Record Office (documentary and archive map data), Exeter
- Westcountry Studies Library (Exeter): other relevant sources (published/unpublished)
- Relevant aerial photographic surveys (1947 to present day) Devon Historic Environment Record
- Published secondary sources
- Local Journals/archives
- Existing (statutory and non statutory) designation records

4.3 Assessment fieldwork

Site inspections will be undertaken to identify the character, extent and condition of the sites and to consider requirements and opportunities for conservation, access and interpretation.

Prior to undertaking fieldwork it will be necessary to prepare base maps for the field survey (based on the OS 1884 map (min 1:2500), and to gain access permission from the landowner. It is hoped that given the partnership relationship with CC (and OS Copyright License agreements), these maps can be obtained by CC from DCC.

- Rapidly compile field notes on the function, materials, significance, rarity and condition of features (both above and below ground).
- Particular attention will be paid to identify features of special historical significance and features likely to either pose problems to the proposals for greater public access (by virtue of contamination, condition etc.) or requiring specific management works in the short and long term (structural safety works, consolidation, area scrub reduction, tree removal etc).
- A digital photographic record will be compiled for illustrative purposes, in particular in relation to management issues. This will include all main structures and features within the project area. Photographic evidence of selected features will also be taken in a high resolution digital format.
- There will be a descriptive condition survey of all buildings (within the site gazetteer) which will analyse its form, use of materials, construction technique,

function and adaptions over time. This information will be cross-referenced to other sections of the archaeological report and to the structural engineers report.

- Recommendations for each site (within the site gazetteer) will include elements of site significance, short/long term management priorities, conservation works priorities and any specific factors relating to conservation (ie mortar analysis, extent of works – rebuilds etc).
- All archaeological features will be accurately located by means of a National Grid reference and a location plan will be produced in the report which will allow site detail to be accurately placed within the context of the Ordnance Survey Landline mapping.
- Measured survey drawings undertaken by the structural engineer during the structural survey will be produced to EH Level 2 standard (elevations/plans/sections – as per the South Hooe spec by Knevitts, supervised by C Buck), as the conservation works will focus only on repointing and possible replacement of existing structural elements. Surveys created during the field survey will be reproduced by the structural engineer (Knevitts) using CAD, and shown in the structural assessment condition report. All survey plans will be linked to the Ordnance Survey landline map; all drawings will include standard information: site details, personnel, date, scale, and north-point.
- Following receipt of the draft building survey (undertaken by the tendered structural engineer), the Historic Buildings Consultant (Colin Buck – as part of the post assessment stage), will correct and annotate the plans to include all archaeological/architectural features and structural remediation recommendations prior to their inclusion in a report for tendering contractors for building consolidation.
- Detailed building conservation recommendations will be given for each building on sketch measured (EH Level 2) building survey elevations and plans (agreed by the Structural Engineer and the Historic Buildings Consultant), which will be reproduced in the Schedule of Works and Tender document (Forthcoming 2012) prepared by the structural engineer. In addition this will contain a project Specification report with details of the mortar and pointing mix as well as a general approach to the conservation of the standing archaeology of the mine buildings affected by the works. The report will include Preliminaries, General Conditions, Schedule of Works, Provisional Sums and detailed survey plans with building conservation annotations. This document will be informed by the Structural Assessment Report.
- A Risk Assessment will be undertaken by the relevant field officer prior to fieldwork progressing. Cornwall Council Health and Safety procedures will be activated during the fieldwork (HES Lone-working scheme) if appropriate (the landowner lives close to the site).

4.4 Assessment report production

Following completion of the fieldwork survey stage, a report will be compiled, which will contain details for each archaeological site, describe the nature of the assessment work undertaken, and relevant management recommendations. The following components will be included within the site report:

- Summary
- Project background
- Aims and objectives
- Methodology (desk top assessment and fieldwork)

- Site background (location and setting, statutory designations, historic landscape characterisation and general site history), within the project area and to adjacent factors.
- Description of the site – summary description of the archaeological resource and heritage assets, cross-referenced to the site inventory
- Significance – statement of the importance of the site
- Management recommendations (building consolidation, archaeological potential, further archaeological evaluation work and known site hazards)
- Summary management table of sites and table of structures requiring treatment (prioritised)
- Site gazetteer (descriptive) of each archaeological feature or building which will contain site description/condition, prioritised management requirements (short/long term), appropriately illustrated with photograph(s) relating to a site map (max 1:2500).
- Summary table of site gazetteer (cross-referenced with other known site information, geotechnical etc)
- Impact assessment of proposed conservation works to each sites/and effect on landscape character etc
- Summary recommendations for future management, including any further requirement for conservation works or other archaeological work (incl. a statement of guiding principles for future repair, consolidation and continuing management).
- References and Project archive index
- Supporting illustrations and site photographs throughout the text: location map, historic maps, mine plans/sections, photographs etc.

In addition (to meet the Project Brief requirements) the report will also contain:

- Details of the archaeological organisation, personnel and methodology involved.
- An evaluation of the significance in national, county and local terms, of specific features and the site as a whole, using recognised criteria and including reference to relevant statutory and non-statutory designations.
- Reproduction of available GIS derived phase mapping for the site (to include c1840s, c1880s, c1908, 1950s and present) and of archaeological remains and any other relevant data.
- General recommendations for site management, archaeological constraints, conservation of individual structures, lines of site, and archaeological potential below ground.

Following production of the assessment report (see Report dissemination - Section 4.8.3), production of the structural report (with building consolidation recommendations/specifications), contractors will be tendered for the proposed building consolidation works.

4.5 Historic buildings consultancy

- The HBC will attend a pre-works meeting with the SWCPT and landowners (on site), to agree site access, site compounds, stockpile areas, agree details of location/preparation and number of mortar test panels, agree working methods and any changes to proposed work programme and discuss Health and Safety issues and other access requirements (as recommended by the SWCPT), in order to provide safe access and to minimise damage to known or unknown sub-surface archaeological features.

- The HBC will regularly liaise with the SWCPT and the landowners. Using the mechanism of two weekly update emails and/or site visits. The archaeological recording and HBC roles will be carried out within one post.
- The HBC will provide historic building conservation advice to the site engineer and site contractor in line with English Heritage guidelines (referred to in section 7 below), during regular site visits.
- The HBC will also photograph the buildings before, during and after works take place (digital and archive B/W), and undertake to fulfil any specific recommendations made by Devon's HES.
- The HBC and structural engineer (A White of Knevitts), will attend at least three regular site meetings; at the beginning, the middle and the end of each contract phase for each site. The meetings will also be held with the site contractor and landowner as appropriate, to discuss ongoing site conservation work methods, detail of repairs and resolve any conservation work problems. The structural engineer and site contractor will have a proven track record in historic building conservation.
- HBC will ensure that site conservation works are carried out to standards recommended by English Heritage best practice, and will halt inappropriate or sub-standard work and inform the landowner and SWCPT, or Conservation Officer as appropriate.
- HBC will advise the landowner, the Structural Engineer, and the SWCPT where variations to repair and conservation work and recording may need to be agreed with DCC (Historic Environment Officer).

4.6 Historic building recording

- Detailed archaeological recording will be undertaken for all newly exposed architectural features and any features revealed through excavation. Recording will also include the extent of repointing and rebuild. This function will be combined with the HBC role (by Colin Buck).
- As well as new detail, the nature and extent of all conservation works will be added to the existing archaeological/engineering building survey drawings by the Structural Engineer (to be supplied to HES by the client), as part of the CDM Regs. (provision of 'as built' survey drawings).
- Measured survey will be carried out by hand measurements (using offset techniques at a scale of 1:50), using a paper copy of the survey supplied by the Client. This record will then be added to the original survey using CAD (or equivalent) software.
- The resulting survey output will be a revised measured survey drawing showing all conservation works that have been undertaken. This will be reproduced at a suitable scale of either 1:50 or 1:100 (appropriate to the size of area recorded) and will form part of the Historic Buildings archive watching brief report.
- If archaeological deposits of a regional or national importance are uncovered, contingency should be allowed within the works programme to review options to ensure their preservation in situ. In the event that significant remains cannot be preserved in situ, strategies for their relocation or detailed recording will be agreed with the Devon County Archaeologist.
- Any variation in named personnel for archaeological recording and historic buildings consultancy will be agreed with the SWCPT and DCC.
- The site archaeologist and HBC will adhere to Health and Safety Policies (see below), under the direction of the designated Site Safety Officer.

4.7 Site recording (general)

- Site drawings (plans, sections, locations of finds) will be made by pencil (4H) on drafting film; all plans will be linked to the Ordnance Survey landline map; all drawings will include standard information: site details, personnel, date, scale, north-point.
- The site archaeologist will undertake archaeological building recording in line with recommendations given by IFA. Sections and plans will be drawn on site at appropriate scales which will adequately record structures or features at appropriate levels of detail, and appropriate sections reproduced in the archive report at either 1:50 or 1:100 to adequately demonstrate revealed archaeological features.
- All features and finds will be accurately located by means of a National Grid reference.
- All archaeological contexts will be described using a standard format and linked to a continuous numbering sequence.
- A location plan will be made which will allow site detail to be accurately placed within the context of the Ordnance Survey Landline mapping.
- The archaeological watching brief report will detail (and if appropriate summarise) all forms of archaeological recording that has been undertaken at each of the mine sites. Each major mine site will have a single archaeological watching brief report that details all project related work to that site (ie trails works, building conservation works, interpretation works etc).

4.8 Treatment of finds

- It is recognised that fieldwork may produce artefactual material.
- It will be important to agree the arrangements for deposition of any finds prior to the start of the project, and ensure that transfer agreements are arranged and signed.
- An allowance has been included in the cost tender for discussions with the landowner for the deposition of archaeological finds in an appropriate museum.
- All significant finds in stratified contexts will be plotted on a scaled base plan and described.
- All finds will be collected in sealable plastic bags which will be labelled immediately with the context number or other identifier.
- Plymouth Museum is the designated repository museum. Unless otherwise agreed, mining-related artefacts and significant small finds to be removed from site will be deposited at Plymouth Museum, pending detailed discussions over their loan to other local smaller local museums and interpretation centres (for example Tavistock), near the site. Plymouth Museum guidelines will be followed and accession numbers for finds and archives for each project will be obtained at the start of the project.

4.9 Photographic recording

- Black and white scaled photography using either a 35mm camera or medium format camera using fine grain archive quality film (400ASA).
- Provision will be made for a range of lighting conditions and the photographic equipment will be available to the historic building recording personnel.
- Each shot will be carefully composed, focused and lit appropriately with a flash gun if necessary.

The photo record will comprise:

- general views
- examples of structural and architectural detail.

Methodology for the archive standard photography is set out as follows:

- Photographs of details should be taken with lenses of appropriate focal length.
- Difficulties of back-lighting should be dealt with where necessary by balancing the lighting by the use of flash.
- A range of appropriate photographic scales should be used and a metric scale included in all archive recording photographs, except where health and safety considerations make this impractical.
- Selected prints will be scanned into the archive reports.
- Black and white photographs will be archived to HER standards and incorporated into the HES photo database.
- Supporting colour photographs will be taken with a high resolution digital camera (3MP or higher), to illustrate the report and for possible presentation purposes. This will be archived electronically onto each report CD.
- Care will be taken that each shot is focused and that with delayed shutter action that camera shake does not occur. Each shot will be of appropriate quality and used for reports and/or power-point presentation.
- Digital colour photographs will be stored according to the Historic Environment Service's guidelines. Copies of the images will be provided to the client.
- The archaeological record will include a plan showing the location of the photographs reproduced in the report.

5 Archaeological recording/HBC report

The site report will summarise the results of the measured survey, photographic recording and archaeological recording for buildings treated as part of this project, and will include the following components:

- Summary
- Project background
- Aims and objectives
- Methodology (Conservation philosophy/strategy/HBC)
- Summary of conservation works (incl. mortar spec) per site (detailed tabulated sections for site management)
- Summary of how mitigation strategy has enhanced the site's understanding/technology/character
- Future research aims and conservation objectives
- Recommendations for future management and long term priorities (including any further requirement for conservation works and public interpretation).
- Conclusions
- References
- Project archive index
- Supporting illustrations (Appendices): location map, historic maps, plans, elevations of 'as built' surveys of each building, photographs, LBC application (incl decision notice and PD).

5.1 Draft and summary report

A draft report containing the project results, as outlined above, will be produced and circulated to the landowner, SWCPT, SDAONB and DCC for comment within three months of completion of the project.

5.2 Final report format

- A paper copy and a digital (PDF) copy of the report, illustrations and any other files will be held in the Cornwall HER.
- Three paper copies of each report, and a CD containing an electronic copy of the report and the digital photographic archive will be produced for each landowner, the DHER and SWCPT.
- Paper (and if requested electronic) copies of the report will be distributed to local Devon archives (including Devon Historic Environment Record) and national archaeological record centres (OASIS).

5.3 Final report dissemination (Assessment and building recording/WB)

- Three bound full colour copies of the final reports will be sent to the SWCPT. In addition DCC will have a digital .pdf copy of the report on CD in Microsoft Word format, within 2 months of the placement of the order for the works. One bound copy will be sent to each site owner, and a CD copy if requested.
- It is understood that the reports may in future be made available to researchers and public reference via Devon's Historic Environment Record and web-based versions.
- The archaeological consultant shall complete an online OASIS (*Online AccesS to the Index of archaeological investigationS*) form in respect of the archaeological work. This will include a digital version of the report. The report to the Historic Environment Record will also include the OASIS ID number and (if appropriate) a Plymouth Museums Accessions number.
- Two copies will be sent to local archive centres and one copy to the EH national archive centre.
- Copyright of all material gathered as a result of the project will be reserved to both the Historic Environment Projects, Cornwall Council and DCC. Existing copyrights of external sources will be acknowledged where required. Use of the material will be granted to the client.

Note:

It is advisable for the structural engineer's reports to be freestanding and produced separately from the archaeological report – although the results of these reports can inform and be integrated into the archaeological report. The measured building survey output will be in the form of paper copies and CAD files, these will be reproduced in the Structural assessment report and final archaeological recording report. The project's building conservation Specifications and Schedule of Works are a separate report and will be compiled by the Structural Engineer (ready for issue to tenderers after Stage 1). A brief summary of all of the above reports will be described in the archaeological report, and recommendations for undertaking the second stage (building conservation works).

6 Project archive

Following review with the HEP Manager the results from the fieldwork will be collated into an archive following the Society of Museum Archaeologists Guidelines, and for sites in

West Devon, Plymouth City Museum Deposition guidelines. This will involve indexing and cross-referencing of photographs and drawings. All records (photographs, etc) and paper/digital archives will be ordered, catalogued and stored in an appropriate manner (according to DHES guidelines).

- An index to the site archive will be created and the archive contents prepared for long term storage, in accordance with Plymouth City Museum Deposition guidelines (which will follow the Society of Museum Archaeologists Guidelines).

Cornwall HEP (CC)

- A paper copy of all relevant correspondence relating to the project, the project design, and a single paper copy of the report will be stored in an archive standard (acid-free) documentation box. The project archive will be temporarily deposited in paper form with the HEP (CC Kennall Building), in the medium term will be stored at Pound and Co (Penryn) and in the long term with the Cornwall Record Office. All digital records will be filed on the Cornwall Council network.
- An electronic version of all relevant correspondence relating to the project, the project design, the report and digital photographs will be stored on the CC network.
- Photographic material will be archived and then stored in archive standard negative holders and archive print holders at the RIC Museum, Truro.

Devon HER (DCC)

- The archaeological consultant will contact Plymouth City Museum (if appropriate) to obtain an accession number and agree conditions for deposition before fieldwork commences.
- Any archaeological finds resulting from the project (which are the property of the landowner), will be deposited with Plymouth City Museum - in a format to be agreed with the museum, and within a timetable to be agreed with DHES. The museum's guidelines for the deposition of archives for long-term storage will be adhered to. If ownership of all or any of the finds is to remain with the landowner, provision and agreement will be made for the time-limited retention of the material and its full analysis and recording, by appropriate specialists.
- The drawn archive will be stored in A2 plastic wallets.
- Black and white photographic prints will be stored in archive standard print holders within an archive standard acid free archive box (and deposited with Plymouth City Museum - in a format to be agreed with the museum). If appropriate, other photographic records will be supplied with written captions and subject to appropriate batch archiving to be held in safe archival storage (at Plymouth City Museum).

7 Site interpretation

Given the relative local importance of each site, it is acknowledged that there is scope for wider public dissemination of the results of this project. This dissemination could take the form of one or more of the following, subject to the agreement of funding for this work by the SWCPT (this may not be included in the tender associated with this PD, although it can be included if requested by the SWCPT):

- Provision of information about the sites, works carried out and dates of open days etc via web sites (DCC)
- Popular publications (DAS: Journals)
- Media/newspaper articles via CCC/NE/WHS publicity officer.

- Provision of site consultancy and text within the reports for production of appropriate site interpretation.

8 Project staff

The Historic Environment Service (Projects) has accumulated a great deal of experience in industrial archaeology, having been involved in this aspect of archaeology for the last twenty years (see the HES CV and the specific personnel CV in Appendix 11.11.2). The project will be partly managed and carried out by an HES Senior Archaeologist with proven experience in building conservation, who will also carry out the historic buildings consultancy and historic buildings recording. The HBC will:

- Take responsibility for the overall direction of the historic building consultancy and archaeological recording project.
- Discuss and agree the detailed objectives and programme of each stage of the project with SWCPT, including arrangements for health and safety.
- Monitor progress and results for each stage.
- Edit the project report.

Key personnel within the project may be:

Colin Buck, DipCert, Senior Archaeologist. cbuck@cornwall.gov.uk

Specialist in conservation works to Cornish mining landscapes, archaeological assessments and watching brief recording since 1993. Involved in numerous projects including conservation works to many engine houses and other structural conservation works, shaft safety works and mine site access improvements, particularly in the east of Cornwall. Other projects include archaeological Impact Assessments, Conservation Management Plans and Historic Building Consultancies for the Mineral Tramways Project, East Cornwall Regeneration Project, Tamar Valley Mining Heritage Project and Caradon Hill Area Heritage Project. Involved in the preparation of policies for the Cornish Mining World Heritage Site Bid's Management Plan. Produced over 80 archaeological assessments and watching brief reports over the last fourteen years for Cornwall Archaeological Unit (now Historic Environment Service). A fuller CV for Colin Buck (Senior Archaeologist/HBC) can be provided upon request.

9 General arrangements

Project Timetable

Following guidelines provided by the Landowner/NE, the consultancy and fieldwork (for a projected duration of six months), is anticipated to be commenced during February 2010. HES will require at least two weeks notice before commencement of work, in order to allow the allocation of field staff time and arrange other logistics.

Anticipated project management timeline:

Submission of tender for HBC/Engineer: 5pm on Wednesday 8th February 2012

Consideration/evaluation of tenders: Friday 17th February 2012

Offer of appointment: By end of March (dependent on clearance by funding body)

Commencement of Contract: March 2012

Archaeological/survey assessment: late March 2012

Structural Engineers Project spec/tender docs report: late March 2012

Tender for building conservation contractors: May 2012

Site works commence: early July 2012 (single contract from site to site)

Archaeological recording report: September 2012

Completion of Contract: End of December 2012

Monitoring and Signing Off Condition

- Monitoring of the project will be carried out by the SWCPT and DCC, who should be informed 1 week in advance of the intention to start the site works.
- The HBC will liaise with the SWCPT and DCC to discuss the programme, progress of work, and agree site meetings as required.
- A summary of the results for each major contract stage will be presented to SWCPT and DCC within 2 weeks of the completion of the relevant fieldwork.

Draft reports will be provided to the SWCPT and DCC for comment.

Monitoring points during the project will include:

- Approval of the agreed wording of the PD
- Regular email updates during site works
- Site meetings prior to, during and after site work
- Completion of archive report
- Deposition of the archive

Professional standards

The historic building and archaeological recording will be carried out to the standards of the Institute of Field Archaeologists and all work and advice will be carried out in line with the IFA Code of Conduct and Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology.

Historic Environment, Cornwall Council, is registered as an Archaeological Organisation within the Institute of Field Archaeologists.

As part of Environment, Planning and Economy, Cornwall Council, the HES has certification in BS9001 (Quality Management), BS14001 (Environmental Management), OHSAS18001 (Health, Safety and Welfare), Investors in People and Charter Mark.

The site archaeologist and Historic Buildings Consultant is a Member of the Institute of Field Archaeology (MIFA).

Professional publications

The historic building consultancy work will be informed by the practice and philosophy contained in the following publications (copies of which are held in the HES library and regularly used for Reference):

Ashurst, J. and N. 1989, *Practical building conservation, Vols 1 (Stone masonry) and 3 (Plasters, mortar and render),* English Heritage

Bereton, C. 1991, *The repair of historic building – advice on principles and methods*, English Heritage

Schofield, J. undated, *Lime in buildings – a practical guide*, English Heritage

Websites

http://www.stastier.co.uk A particularly useful website by the manufacturers of St. Astier brand lime products detailing methodologies for their application.

http://www.cornishlime.com The website of the Cornish Lime Company

http://www.matchingbrick.co.uk A useful website for those seeking matching brick for the repair of historic structures

Copyright

Copyright of all material gathered as a result of the project will be reserved to Cornwall County Council. Existing copyrights of external sources will be acknowledged where appropriate.

Compliance and Variations

Minor variations to this PD will be discussed in liaison with the SWCPT and DCC. The Structural engineer is responsible for gaining consent from DCC (Conservation Officer) for any Listed Building Consents.

Contract

The HE projects team is part of Historic Environment, Cornwall Council. If accepted, the contract for this work will be between the client (DCC), Knevitts and Cornwall Council.

The views and recommendations expressed will be those of the Historic Environment projects team and will be presented in good faith on the basis of professional judgement and on information currently available.

Health and safety

The Service follows the County Council's *Statement of Safety Policy*. For more specific policy and guidelines the Unit uses the manual *Health and Safety in Field Archaeology* (2002) endorsed by the Standing Conference of Archaeological Unit Managers).

All sites are privately owned. Responsibility for Health & Safety lies with the owners (who have Public Personal Liability Insurance), until the building contractors start work, whereupon the latter hold responsibility for their employees on site.

The site archaeologist/historic building consultant will adhere to the Health and Safety Statement of the Principal Contractor (tendered building contractor), during site works. The Health and Safety co-ordinator for CDM Regs. would be the tendered structural engineer. Under CDM Regulations the site contractors are responsible for their own H & S (and anyone visiting the site whilst work is in progress).

Prior to carrying out on-site work HES will carry out a Risk Assessment for HES personnel.

Insurance

As part of Cornwall Council, HE Projects is covered by Public Liability and Employers Liability Insurance.

Colin Buck,

Senior Archaeologist,

Historic Environment,

Cornwall Council,

Truro,

25/1/2012, Rev CB 2/2/12