



Wheal Martyn, Cornwall. Asbestos Survey.
Archaeological Watching Brief.

Cornwall Archaeological Unit

Report No: 2016R079

Report No

2016R079

Report Name

Wheal Martyn, Cornwall. Asbestos Survey.
Archaeological Watching Brief.

Report Author

C. M. Thorpe

Event Type

Watching Brief.

Client Organisation

Wheal Martyn Trust

Client Contact

Julia Orchard

Monuments (MonUID)

Pan Kiln
MCO 42024

Mica Dry
MCO 42026

Scheduled
Monument
1003265

Fieldwork dates (From)

07/12/16

(To)

08/12/16

(Created By)

CMT

(Create Date)

Dec 2016

Location (postal address; or general location and parish)

Wheal Martyn. The parish of St Austell.

(Town – for urban sites)

(Postcode)

Carthew

PL26 8XQ

(Easting) X co-ord

SX 00370

(Northing) Y co-ord

55457



Cornwall Archaeological Unit, Cornwall Council is a Registered Organisation with the
Chartered Institute for Archaeologists

© Cornwall Council 2016

No part of this document may be reproduced, stored in a retrieval system, or
transmitted in any form or by any means without the prior permission of the publisher.

List of Figures

Cover. Overview of Pan Kiln and Mica Dry courtyard, looking north

Figure 1. General site location map.

Figure 2. Site location showing Scheduled Area (in red).

Figure 3. Site plan showing Gazetteer numbers allocated to structures (Source: Smith 1999). Structures examined for asbestos indicated in blue.

Figure 4. Plan of Mica Dry, and Pan Kiln Building. Location of photos shown in blue.

Figure 5. Building 17. Mica Dry. Furnace area at east end. Checking for asbestos.

Figure 6. Building 17. Mica Dry. Furnace room, checking for asbestos.

Figure 7. Building 17. Mica Dry. Collapsed floor above furnace.

Figure 8. Building 17. Mica Dry. Looking NE. Searching for asbestos.

Figure 9. Examining flue of Stack 15.

Figure 10. Structure 13. Pan Kiln. NE end. Looking for asbestos.

Figure 11. Sampling roof of reconstructed crib area within Structure 14 Pan Kiln.

Figure 12. Sampling for asbestos Structure 14 Pan Kiln.

Figure 13. Looking for asbestos within Structure 13 the Pan kiln linhay.

Figure 14. Structure 14. Pan Kiln linhay. Searching blocked loading bay.

Figure 15. Sampling roof of Structure 14, Pan kiln linhay.

Figure 16. Structure 14 Pan kiln. Examining the furnace area.

Abbreviations

CAU	Cornwall Archaeological Unit
HER	Historic Environment Record
MCO	Monument number in the Cornwall and Scilly HER
SMC	Scheduled Monument Consent

1 Project background

Cornwall Archaeological Unit (CAU) was commissioned by Julia Orchard, Clay Works Project Officer with the Wheal Martyn Trust, to undertake an archaeological watching brief and recording during an asbestos refurbishment survey to be carried out in the Pan Kiln and Mica Dry on the site (centred at SX 00370 55457) the watching brief being a requirement of the Scheduled Monument Consent (SMC) for the works (Figs 1 and 2).

A Written Scheme of Investigation (Appendix 1), was produced (02/11/2016) by Adam Sharpe (Archaeology Projects Officer CAU).

This short report covers the results of an archaeological watching brief carried out on 7th and 8th of December 2016.

2 Location and background

The Wheal Martyn works were established in the 1820s by Elias Martyn and were one of the major producers of china clay in Cornwall until his death in 1872. The site was further developed from 1880 until 1931 with new machinery and techniques being introduced to maximise production. The pit closed at this time but the dry remained in use until finally closing in 1966. By 1975 much of the now redundant processing facilities had been opened to the public as a museum.

The site became a Scheduled Monument (National No 1003265) in 1978. Wheal Martyn is important because it demonstrates and preserves the earlier innovations of the China clay industry before it became the highly mechanised process of today with most of the structures complete and the machinery in working order.

Previous archaeological work on the site has included a desk-based assessment of Wheal Martyn undertaken in 1999 by CAU (Smith 1999), and a gazetteer and condition survey produced by Southwest Archaeology in 2013 (Laing-Trengove 2013).

The current work was concentrated around the Mica Dry (MCO 42026), and Pan Kiln (MCO 42024) operated by the Wheal Martyn Works (Figs 2, 3, and 4).

3 Aims and objectives

The principal aim of the work was to make a record of any areas of the physical fabric of the Scheduled Monument affected by intrusive activities undertaken as part of the refurbishment survey carried out by Shield Environmental Ltd, and to produce a short report on the results of the watching brief. A further objective was to produce an entry to the Historic England OASIS/ADS online database of archaeological projects.

4 Working methods

A photographic record was made of those areas of the Scheduled Monument affected by the refurbishment survey works. This was accompanied by site notes about the affected areas recorded on a site plan provided by the client. The photographs included general views, and examples of structural and architectural details and were to include, where possible, a metric scale.

5 Results

The Mica Dry (Structure 17)

This structure lay at the northern end of the main block of buildings to be examined (Fig 4). The first area looked at was around the eastern side which was the room containing the furnaces for the mica dry pan kiln (Figs 5 and 6). No structural asbestos was located though there were a few loose fragments of corrugated asbestos sheeting on the floor. A small sample of this was taken for examination. No structural features or fittings were affected within this part of the building.

The second area examined was within the pan kiln area itself, and where possible where the original floor had collapsed into the flues below (Fig 7). Part of this area had had rubble tipped over it, probably to infill exposed holes. Again no structural asbestos was located though there were a few loose fragments of corrugated asbestos sheeting and asbestos slate fragments within the rubble on the floor. Small samples of these were taken for testing. No structural features or fittings were affected by the sampling within this part of the building (Fig 8).

The roof of the Mica dry was covered in slate so was free from asbestos.

The Linhay (loading area) for the Mica Dry which formed the southern part of the building has been converted into a display area for the museum. No asbestos was located within this part of the building and no sampling was undertaken (Fig 13).

The westward extension to the Mica Dry (Structure 18) which was ruinous, with no roof and filled with debris from a collapsed stack was examined, as was the flue into chimney stack 15 as it was proposed to develop this area as part of the museum. No asbestos was located (Fig 9).

The Pan Kiln (Structures 13 and 14).

This building ran roughly north to south from the Mica Dry (Figs 3 and 4).

The first area examined was the pan kiln floor space itself, especially the northern 2/3rds of the building which has not as yet been opened up for public access (Fig 10). Some small broken fragments of corrugated asbestos sheeting and asbestos slate were located lying on the floor in the north-west corner of the structure, perhaps derived from material dumped within the Mica Dry. Small samples of these were taken, but as elsewhere no structural features or fittings were affected by the sampling within this part of the building.

It was noted though that one of the displays at the southern end of the Pan Kiln illustrating a crib hut had been roofed with corrugated asbestos sheeting. A sample was taken of this material (Fig 11).

It was noted that the Pan Kiln building was covered in a roof made out of corrugated asbestos sheeting. A small sample was taken of this material adjacent to the western entrance to structure 14 (Fig 12). The sample measured less than 2cm x 2cm, was removed from the edge of a roofing sheet obscured from view by a wooden launder, so has no visual impact on the Scheduled structure.

The linhay area of the Pan Kiln, which lies on the eastern side of the building, has been converted into display areas for the museum. Inspection of this area did not reveal any asbestos, so no sampling was undertaken (figs 13 and 14).

The eastern roof of the Pan Kiln linhay was again roofed in corrugated asbestos sheeting, and the gutter launder also appeared to be made out of the same material. Small samples were taken from the roof and launder at the south-east corner of the building. These samples, again very small, were from areas obscured from view and thus again had no visual impact on the Scheduled structure (Fig 15).

Finally the furnace area for the Pan Kiln, located at the southern end of the building was examined. This is now another display area, fitted out as a blacksmiths workshop. No asbestos was located and no samples were taken (Fig 16).

Three other structures within the Scheduled Area were also examined for asbestos.

These were the two crib huts (Structures 27 and 62) and the Bluing Hut (Structure 25). No evidence for asbestos was located within these structures and no samples were taken (Fig 3).

The asbestos survey within the Scheduled area located very little in the way of the presence of asbestos. Only a small amount (mostly fragments of corrugated sheeting, or asbestos slate) was found in rubble on the floor of the Mica Dry, while within the Pan Kiln nothing was located except at the north western end within a deposit of rubble which may have been derived from the Mica Dry. Thus within both these buildings (including the linings) no structural features or fittings were affected by the sampling.

The largest occurrence of asbestos was in the form of corrugated sheeting forming the roof of the Pan Kiln, along with gutter launders on the eastern side of the building. Small samples were taken of these from locations chosen to be obscured from view. The samples themselves (less than 2cm x 2cm) were of a size that would have no visual impact of the structure of the Scheduled building.

In conclusion, the process of the asbestos refurbishment survey had no impact on the archaeological fabric or fittings of the buildings examined.

6 References

Laing-Trengove, D, 2013. *Wheal Martyn China Clay Museum, St Austell, Cornwall. Site Gazetteer and condition survey.* Southwest Archaeology. Rep Nos 130529.

Smith, J, 1999. *Wheal Martyn, Carthew. An Archaeological Assessment.* CAU archive report (1999R072).

7 Project archive

The CAU project number is **146644**

The project's documentary, digital, photographic and drawn archive is maintained by Cornwall Archaeological Unit, Cornwall Council, Fal Building, County Hall, Treyew Road, Truro, TR1 3AY. The contents of this archive are listed below:

1. Projects file containing site records and notes, project correspondence and administration (146644).
2. An annotated field plan is stored in an A2-size plastic envelope (GRE 867/1).
3. Digital photographs stored in the directory: R:\Historic Environment (Images)\SITES.U-Z\Wheal Martyn Asbestos Survey photos. December 2016
4. English Heritage/ADS OASIS online reference: cornwall2-271004
5. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites W\Wheal Martyn asbestos survey WB 2016\Report
6. No artefacts were recovered in the course of the project.



Figure 1. General site location map.

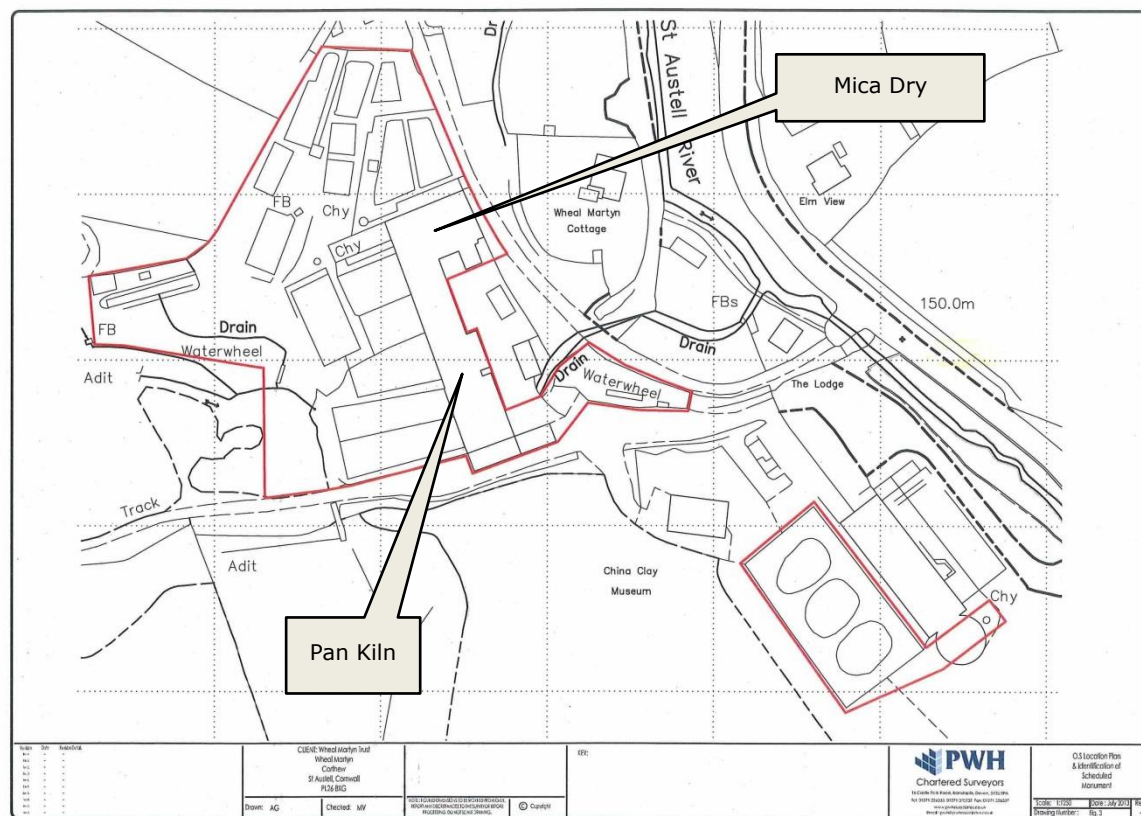


Figure 2. Site location showing Scheduled Area (in red).

5

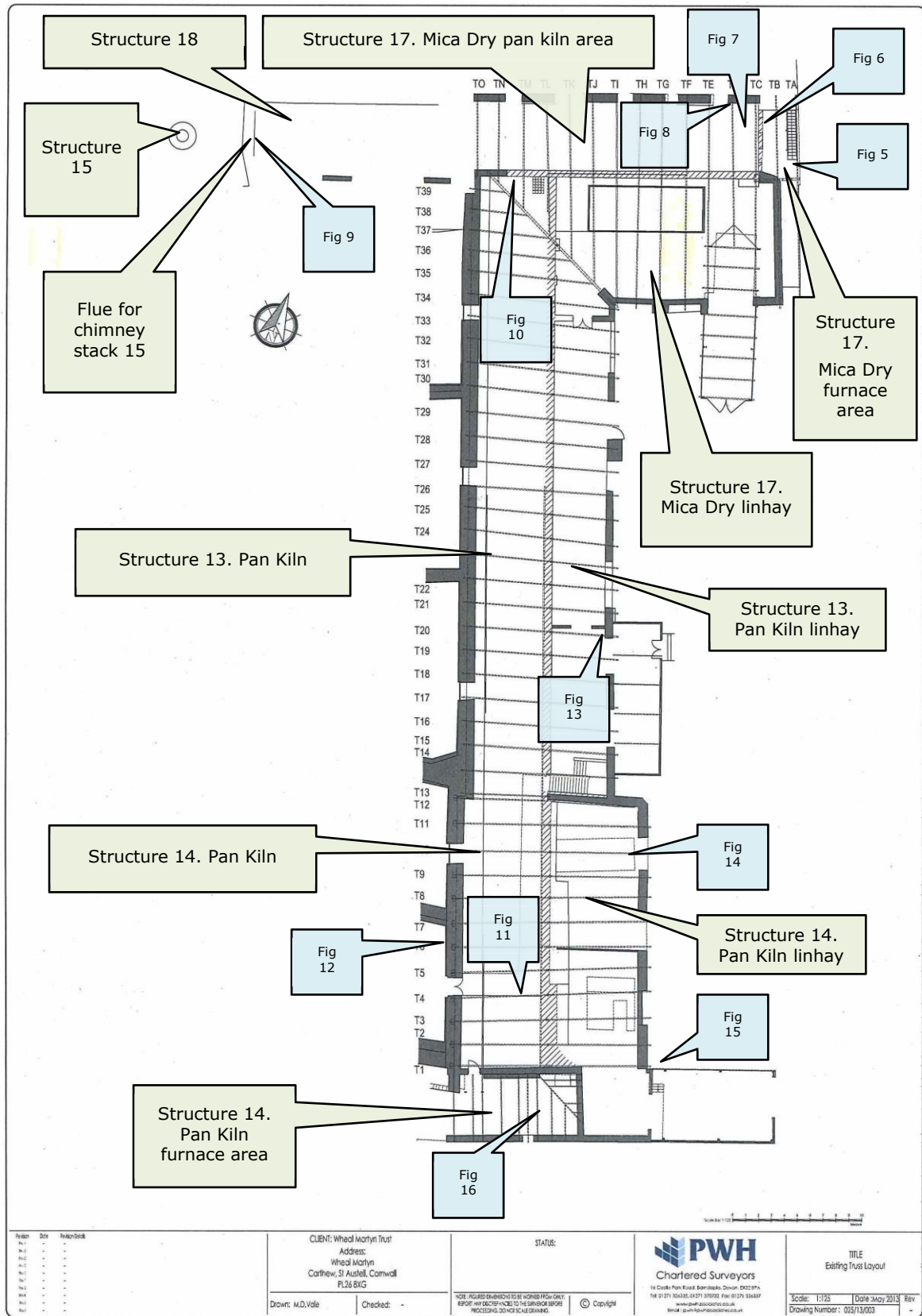


Figure 4. Plan of Mica Dry, and Pan Kiln Building. Location of photo's shown in blue.



Figure 5. Building 17. Mica Dry. Furnace area at east end. Checking for asbestos.



Figure 6. Building 17. Mica Dry. Furnace room, checking for asbestos.



Figure 7. Building 17. Mica Dry. Collapsed floor above furnace.



Figure 8. Building 17. Mica Dry. Looking NE. Searching for asbestos.



Figure 9. Examining flue of Stack 15.



Figure 10. Structure 13. Pan Kiln. NE end. Looking for asbestos.



Figure 11. Sampling roof of reconstructed crib area within Structure 14 Pan Kiln.



Figure 12. Sampling for asbestos Structure 14 Pan Kiln.



Figure 13. Looking for asbestos within Structure 13 the Pan kiln linhay.



Figure 14. Structure 14. Pan Kiln linhay. Searching blocked loading bay.



Figure 15. Sampling roof of Structure 14, Pan kiln linhay.



Figure 16. Structure 14 Pan kiln. Examining the furnace area.

Appendix 1. Wheal Martyn: Written Scheme of Investigation for archaeological watching brief during an asbestos refurbishment survey.

Client: Wheal Martyn Trust
Client contact: Julia Orchard
Client tel: 01726 850362
Client email: JOrchard@swlakestrust.org.uk

• Project background

Cornwall Archaeological Unit were contacted by Julia Orchard, Clay Works Project Officer with the Wheal Martyn Trust, managers of the former Wheal Martyn china clay works at Carthew to the north of St. Austell with a request to submit costs for an archaeological watching brief during an asbestos refurbishment survey to be carried out in the Pan Kiln and Mica Dry on the site (the watching brief being a requirement of the SMC for the works).

• Summary site history

The Wheal Martyn works were established in the 1820s by Elias Martyn and were one of the major producers of china clay until his death in 1872. After a period of partial closure, the works were re-opened by John Lovering who developed the works and introduced new techniques to maximise production. In 1931 the clay pit closed following a slump in demand but the dry remained in use working lower grade clay from other pits in the area and finally closed in 1966. By 1971 the clay pit was again operational and by 1975 much of the processing facilities were opened to the public as a museum. The surviving equipment generally dates to the period when Lovering took over production.

The site became a Scheduled Monument in 1978 and this falls into two areas of protection, including part of a china clay works situated in the Ruddle Valley by the St Austell River at Carthew. The surviving clay works includes a water engine for pumping slurry from the clay pits by vertical rods and a balance bob connected to a working over-shot water wheel, a second waterwheel which worked flat rods to the clay pit, an engine house, a series of mica and sand drags, settling tanks, the blueing house, workers shelter or crib hut, the linhay or drying area and the coal fired furnace. Most of the structures are complete and the machinery in working order and form the core of exhibits in a museum. Further remains to the south including three oval settling tanks survive but are not on display.

Wheal Martyn is important because it graphically demonstrates and preserves the earlier innovations of the industry before it became the highly mechanised process of today. The china clay quarry is still in use and produces about 2000 tons of china clay per week, which is approximately the same quantity Elias Martyn generated in a year.

Wheal Martyn holds a unique collection of artefacts and archives as the only china clay museum in Europe, probably the world. Preserving a significant part of Cornwall's industrial heritage and history of English China Clays, Wheal Martyn also provides a focus for culture within the 'Clay Country' keeping alive the heritage of local bands, choirs and chapels which are fast disappearing.

A desk-based assessment of Wheal Martyn was undertaken in 1999 by CAU (Smith 1999), and the history of the site was also investigated by Southwest Archaeology in 2013 as part of the gazetteer and condition survey they produced for the site.

- **Project extent**

The watching brief will be confined to works undertaken in the Pan Kiln and Mica Dry.

- **Aims and objectives**

The principal aim of the study is to make a record of any areas of the physical fabric of the Scheduled Monument affected by intrusive activities as part of the refurbishment survey and to produce a short report on the results of the watching brief.

- **Working methods**

All recording work will be undertaken according to the Chartered Institute for Archaeologists *Standards and Guidance for Archaeological Investigation and Recording*. Staff will follow the CIfA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology*. The Chartered Institute for Archaeologists is the professional body for archaeologists working in the UK.

- **Desk-based assessment**

The Project archaeologist will consult the desk-based assessment undertaken by CAU in 1999 and the gazetteer and condition survey for the site produced by Southwest Archaeology for relevant information

- **Fieldwork: archaeological watching brief**

A photographic record will be made of any areas of the Scheduled Monument affected by the refurbishment survey works. This will be accompanied by site notes. The affected areas will be marked up on a site plan to be provided by the client.

- **Fieldwork: photographic recording**

Photographic recording will consist of colour photography using a digital SLR camera with a resolution of 10 million pixels or higher.

CAU follows Historic England guidance on digital image capture and file storage (2014).

The photo record will comprise:

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

Methodology for the archive standard photography will be as follows:

- Photographs of details will be taken with lenses of appropriate focal length.
- Where appropriate a tripod will be used to take advantage of natural light and slower exposures.
- Difficulties of back-lighting will be dealt with where necessary by balancing the lighting by the use of flash.
- A metric scale will be included in all views, except where health and safety considerations make this impractical.

- **Creation of site archive**

An ordered and cross-referenced site archive will be produced. Site plans, photographs and other records will be completed and indexed, and any artefacts retrieved will be washed and marked (where appropriate) and catalogued.

A Historic England /ADS OASIS online archive index will be created at this stage of the project.

- **Archive report**

The results from the watching brief will be presented in a concise report. A copy of the report will be distributed to the Client for dispersal as required. Other copies of the report will subsequently be sent to the local and main archaeological record libraries. A PDF copy of the report will be produced.

A digital (PDF) copy of the report, illustrations and any other files will be lodged with the Cornwall HER. Paper copies of the report will be distributed to the client, to local archives and national archaeological record centres.

- **Archive deposition**

An index to the site archive will be created and the archive contents prepared for long term storage, in accordance with CAU standards.

The archiving will comprise the following:

1. All correspondence relating to the project, the WSI, a single paper copy of the report together with an electronic copy on CD, stored in an archive standard (acid-free) documentation box.
2. The project archive will be deposited initially at ReStore PLC, Liskeard and in due course (when space permits) at Cornwall Record Office.
3. Digital data will be stored on the Cornwall Council network which is regularly and frequently backed up.

CAU uses the following file formats for stored digital data:

DOCX Word processed documents
XLSX Spreadsheets
PDF Exports of completed documents/reports/graphics
JPG Site graphics and scanned information
DNG or TIF Digital photographs
DWG AutoCAD drawings, measured surveys
MXD ArcView GIS (electronic mapping) data
AI Adobe Illustrator graphics

- **Timetable**

The study is anticipated to be undertaken in December 2016. CAU will require two weeks' notice before commencement of work, in order to allocate field staff and arrange other logistics.

The archive report will be completed within 3 months of the end of the fieldwork. The deposition of the archive will be completed within 3 months of the completion of the archive report.

- **Monitoring and Signing Off Condition**

Monitoring of the project will be carried out by Nick Russell, Assistant Inspector of Monuments, Historic England. Where the Inspector is satisfied with the archive report and the deposition of the archive, discharge of the SMC condition will be expected.

1. The Inspector will monitor the work and will be kept informed of progress.

2. Notification of the start of work shall be given Historic England by the client three weeks in advance of the commencement of works.
3. Any variations to the WSI will be agreed with the Inspector in writing, prior to them being carried out.
4. If significant detail is discovered, all works must cease and a meeting convened with the client and Historic England to discuss the most appropriate way forward.

Monitoring points during the study will include:

- Approval of the WSI
- Completion of fieldwork
- Completion of archive report
- Deposition of the archive

• References

Historic England 2016. *Understanding Historic Buildings: A guide to good recording practice*. Historic England, Swindon
Historic England 2015. *Guidance note on Digital Image Capture and File Storage*. Historic England, Swindon

• Cornwall Archaeological Unit

Cornwall Archaeological Unit is part of Cornwall Council. CAU employs 20 project staff with a broad range of expertise, undertaking around 120 projects each year.

CAU is committed to conserving and enhancing the distinctiveness of the historic environment and heritage of Cornwall and the Isles of Scilly by providing clients with a number of services including:

- Conservation works to sites and monuments
- Conservation surveys and management plans
- Historic landscape characterisation
- Town surveys for conservation and regeneration
- Historic building surveys and analysis
- Maritime and coastal zone assessments
- Air photo mapping
- Excavations and watching briefs
- Assessments and evaluations
- Post-excavation analysis and publication
- Outreach: exhibitions, publication, presentations

• Standards



CAU is a Registered Organisation with the Chartered Institute for Archaeologists and follows their Standards and Code of Conduct.

<http://www.archaeologists.net/codes/ifa>

- **Terms and conditions**

- **Contract**

CAU is part of Cornwall Council. If accepted, the contract for this work will be between the client and Cornwall Council.

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

- **Project staff**

The project will be managed by a nominated Archaeology Projects Officer (Adam Sharpe) who will:

- Discuss and agree the detailed objectives and programme of each stage of the project with the client and field staff, including arrangements for health and safety.
- Monitor progress and results for each stage.
- Edit the project report.
- Liaise with the client regarding the budget and related issues.

Work will be carried out by CAU field staff, with assistance from qualified specialists and sub-contractors where appropriate.

- **Report distribution**

Paper copies of the report will be distributed to the client, to local archives and national archaeological record centres.

A digital copy of the report, illustrations and any other files will be held in the Cornwall HER and also supplied to the client on CD or other suitable media.

- **Copyright**

Copyright of all material gathered as a result of the project will be reserved to Cornwall Archaeological Unit, Cornwall Council. Existing copyrights of external sources will be acknowledged where required.

Use of the material will be granted to the client.

- **Freedom of Information Act**

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

CAU will ensure that all information arising from the project shall be held in strict confidence to the extent permitted under the Act. However, the Act permits information to be released under a public right of access (a "Request"). If such a Request is received CAU may need to disclose any information it holds, unless it is excluded from disclosure under the Act.

- **Health and safety statement**

CAU follows Cornwall Council's *Statement of Safety Policy*.

Prior to carrying out on-site work CAU will carry out a Risk Assessment.

- **Insurance**

CAU is covered by Cornwall Council's Public and Employers Liability Insurance, with a policy value of £50m. The Council also has Professional Negligence insurance with a policy value of £10m.

Wheal Martyn, Cornwall. Asbestos Survey. Archaeological Watching Brief.

*Adam Sharpe BA MCIfA
Archaeology Projects Officer
02 November 2016*

Cornwall Archaeological Unit

*Cornwall Council
Fal Building, County Hall,
Treyew Road,
Truro, Cornwall. TR1 3AY
Tel: 07968 892146
Email: asharpe@cau.gov.uk*

Cornwall Archaeological Unit

Fal Building, County Hall, Treyew Road, Truro, Cornwall,
TR1 3AY

(01872) 323603
enquiries@cau.org.uk
www.cau.org.uk

