



Kiln at Tregonning Hill Brickworks, Breage, Cornwall

Historic Building Record

To be updated following excavation in 2014



Historic Environment Projects

Kiln at Tregonning Hill Brickworks, Breage, Cornwall

Historic Building Record

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The Project Manager was Nigel Thomas.

The views and recommendations expressed in this report are those of Historic Environment Projects 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 illustration

View of the kiln looking south-west (taken in June 2013).

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Contents

1	Summary	1
2	Introduction	3
2.1	Project background	3
2.2	Aims	3
2.3	Methods	3
2.3.1	Desk-based assessment	3
2.3.2	Fieldwork	3
2.3.3	Post-fieldwork	4
3	Location and setting	4
4	Designations	4
5	Site history	4
6	Design and operation of a 19th century beehive Scrivener kiln	6
7	Building description	7
8	Significance	8
9	Recommendations	9
10	References	9
10.1	Primary sources	9
10.2	Publications	10
10.3	Websites	10
11	Project archive	10

List of Figures

- Fig 1 Location map
- Fig 2 Site location visible on 2005 aerial photograph
- Fig 3 Ordnance Survey digital mapping (2013) with National Mapping Programme plot overlain (NMP mapping © English Heritage)
- Fig 4 Extract from the OS First Edition One Inch Map c1809
- Fig 5 Tithe Map for the Parish of Breage, c1840
- Fig 6 First Edition of the Ordnance Survey 25 Inch Map, c1880
- Fig 7 Second Edition of the Ordnance Survey 25 Inch Map, c1907
- Fig 8 Plan of 'Tregonning Hill Clay Works' attached to Indenture dated 1893 (CRO Ref:RH/1/3239)
- Fig 9 Photograph of William Argall and a Tregonning Hill brick on display in Helston Museum
- Fig 10 Part of a dinner service made from Tregonning Hill china clay presented to William Argall on his retirement and emblazoned with his monograph and 'Tregonning Hill' on display in Helston Museum
- Fig 11 North-east elevation of kiln, its chimney once located in the area of the tree to the left
- Fig 12 North elevation of kiln
- Fig 13 North-east loading door with collapsed arch and evidence for iron fittings
- Fig 14 North jamb of north-east loading door with drill holes and iron pin below for fittings
- Fig 15 North-west elevation of kiln with red boxes showing filled recesses
- Fig 16 West elevation of kiln with red box showing possible blocked opening
- Fig 17 Possible blocked opening in west elevation of kiln
- Fig 18 South-west elevation of kiln showing collapse around former loading door
- Fig 19 Collapse around former south-west loading door showing section through stone wall with brick lining
- Fig 20 Remains of south jamb of former south-west loading door showing drill hole for fitting
- Fig 21 South elevation of kiln
- Fig 22 South-east elevation of kiln
- Fig 23 South-east elevation of kiln. The ranging rod is resting on top of the possible below- ground flue which may connect to the former chimney
- Fig 24 Collapse around north jamb of north-east loading door showing section through stone wall with brick lining and render roof covering
- Fig 25 Detail of render roof covering bridge the angle between the top of the stone wall and the brick roof structure
- Fig 26 Interior of north wall of kiln showing vitrified brickwork in the upper half of the wall
- Fig 27 Interior of south wall of kiln showing vitrified brickwork in the upper half of the wall and a replaced section of brickwork to the right
- Fig 28 Interior of brick roof structure looking south

Fig 29 Interior of brick roof structure

Fig 30 Detail of brick roof structure

Fig 31 Collapsed rubble and earth covering the interior floor surface

Fig 32 Plan, elevations and section (based on Nationwide Surveys drawing)

Abbreviations

CRO	Cornwall County Record Office
EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
MCO	Monument number in Cornwall HER
NGR	National Grid Reference
OD	Ordnance Datum – height above mean sea level at Newlyn
OS	Ordnance Survey
RIC	Royal Institution of Cornwall

1 Summary

HE Projects, Cornwall Council were commissioned by PDP Green on behalf of Roger Benney to carry out an historic building record of a Grade II listed beehive Scrivener kiln at Tregonning Hill, Breage, the only remaining building associated with a former 19th century brickworks. The kiln, originally constructed for firing bricks, is located at NGR SW 6049 2993 (Figs 1 and 2). The record was carried out in advance of consolidation work, to stabilise and protect the structure, as part of a Higher Level Stewardship agreement entered into by the Benny family with Natural England.

The kiln, which now stands alone in a field on the north-east slopes of the hill, was originally built as part of the Tregonning Hill China Clay and Brick Works established in the early 1870s by William Argall (a local mine captain and manager of the earlier clay works at Tregonning Hill) with the financial backing of John Toy of Helston and William Harvey of Hayle (both iron founders). The works were sold in 1893 and leased to John Miners Holman of Camborne, Frank Harvey of Hayle and F W Thomas, manager of Dolcoath Mine at Camborne. Later, in 1903, the complex was sold again to John Lovering & Co. of St Austell. It seems likely that the business lasted only a short time after being bought by John Lovering & Co. since the Second Edition OS map of c1907 (Fig 7) shows the works as 'Disused'. It is unclear whether it reopened again after 1907.

The kiln is a single phase structure which bears evidence for some minor repair works. It is likely to have been in use as part of the brickworks for a period of approximately thirty five years before its abandonment.

Significantly this 19th century kiln survives whilst all the other buildings and structures associated with the Tregonning Hill China Clay and Brick Works have not. The surviving kiln is designated as a Grade II listed building and contributes to and is part of the Tregonning and Gwinear Mining District within the World Heritage Site for Cornish Mining. The granite and brick structure with its original domed roof (for the most part intact) is a fine example of a 19th century beehive Scrivener kiln, once common in Cornwall, but now becoming increasingly rare.



Fig 1 Location map



Fig 2 Site location visible on 2005 aerial photograph

2 Introduction

2.1 Project background

The 19th century, Grade II listed kiln lies within a protected landscape on Tregonning Hill. The kiln and surrounding land are owned by the Benney family who have entered Nansloe Farm into a ten year Higher Level Stewardship agreement with Natural England. As part of this agreement the brickworks kiln has been singled out for assessments and surveys leading to its much needed consolidation and stabilisation.

A brief dated 20/2/2013 outlining the required works was prepared by Ann Reynolds, Senior Archaeologist, Countryside Advice, Historic Environment, Cornwall Council. This brief sets out the entire works schedule and includes the requirements for historic assessment, an historic building record and analysis and recommendations for consolidation works and future management. Historic Environment Projects was subsequently contacted by PDP Green, who had been contracted to carry out the works, and an estimate of costs was prepared and agreed for the building record, historic assessment and recommendations.

2.2 Aims

The relevant aims for this part of the works were to undertake an historic building survey of the kiln and provide recommendations for consolidation and future management of the structure.

2.3 Methods

The fieldwork was undertaken to be equivalent to an English Heritage Level 2 survey (see English Heritage 2006). It comprised a walk-over, photographic survey, annotation of existing measured drawings and the production of brief building descriptions.

2.3.1 Desk-based assessment

During the desk-based assessment historical databases and archives were consulted in order to obtain information about the history of the brickworks and the structure. The main sources consulted were as follows:

- Cornwall HER
- Early maps and photographs (see Section 10.1)
- Published histories (see Section 10.2)
- Internet (see Section 10.3)

2.3.2 Fieldwork

Analysis of the building fabric was undertaken on site (recorded as notes). Measured information and detail, as appropriate, was added to copies of existing measured drawings provided by Nationwide Surveys.

The photographic record comprised:

- general views
- internal and external elevations
- examples of structural and architectural detail

The principal photographic record comprised black and white photographs taken using a 35mm camera on fine grain archive quality film. Supporting colour photographs were taken with a digital camera for illustrative use.

A metric scale was included in all archive shots where possible.

2.3.3 Post-fieldwork

All project materials were prepared for long term storage. This report was prepared to summarise the results of this stage of the works.

3 Location and setting

The beehive Scrivener kiln is located on the north-eastern slope of Tregonning Hill near Breage, approximately six miles to the west of Helston at NGR SW 6049 2993 (Figs 1 and 2). It now stands alone in a field but was once surrounded by a small complex of buildings and structures associated with a 19th century china clay and brickworks.

The kiln is sited on farmland which slopes down to the north-east and lies at a height of 130m OD. Uphill to the south-west lies the large china clay pit which provided the brickworks with its raw material and immediately to the north-west there is an Iron Age settlement enclosure with associated field system. Bedrock in the area comprises an unnamed igneous intrusion, Carboniferous to Permian, Felsic-rock (Cornwall Council GIS data). The decomposed granite was known locally as Moorstone, Growan and Growan Clay.

4 Designations

The kiln itself is designated as a Grade II listed building. The listing description gives the wrong date for the structure but is as follows:

'Brick kiln, partly ruinous. Probably C18. Granite rubble walls with dressed granite jambstones to doorway. Parabola-domed brick roof with gravel and lime mortar covering. Round flue vent over the middle. Round plan with entrance to the south. Slightly battered walls. Left hand side of doorway fallen, the right hand side survives to over half its original height. The inside of the wall is brick lined and there is still a coating of tar over much of the surface. This is a rare brick kiln in Cornwall, surviving fairly complete and situated in marginal farmland on the east slope of Tregonning Hill'.

The area in which the kiln is located is designated as part of the Tregonning and Gwinear Mining District within the World Heritage Site for Cornish Mining. The site is also part of the Tregonning Hill Conservation Area and lies just to the south-east of a large area designated as a Scheduled Monument. It is also part of an Area of Great Landscape Value and an Area of Great Historic Value.

5 Site history

The first discovery of china clay in Cornwall was made by William Cookworthy at Tregonning Hill in 1746 after he had seen it used by the miners of close by Great Work Mine for repairing their furnaces (www.viewsofcornwall.com). The clay from Tregonning Hill, which was then used to make porcelain, was later found to contain dark specks of mica, which detracted from a top quality finished product. Better quality china clay was discovered in St Stephen-in-Brannel, near St Austell and the main focus of china clay extraction then shifted to this area (www.cornwall-calling.co.uk).

The china clay setts on Tregonning Hill continued to be worked into the 19th century. In 1839, because of a slump in the china clay industry, the Tregonning workings were abandoned. Then in 1851, the sett (which includes the study area) was leased to William Browne of St Austell and Robert Dunn of Redruth, who opened new works called Leeds, close to Cookworthy's original operations (www.cornwall-calling.co.uk) as part of 'Tregonning Hill China Clay Works'. The processed china clay was shipped to Staffordshire potteries from Porthleven, the closest harbour to the site.

In 1871 Browne and Dunn sold their Tregonning Hill works to William Harvey of Hayle (iron founder), William Argall of Breage (works manager and mine captain) and John Toy of Helston (iron founder). The three partners saw that no great future or fortune was to be made from exporting clay only. They also realised that the quality of the clay would make superior fire-bricks for use in their foundries and for other industries and set up a brick-making works at the site called 'Tregonning Hill China Clay and Brick Works'. William Argall had been employed previously by Browne and Dunn to run the earlier clay works. He took on the management of the new brickworks (now known locally as Wheal Bunny) which enabled him to employ his previous workforce (Polglase 2003).

The surviving beehive Scrivener kiln within the study area was constructed as part of the 'Tregonning Hill China Clay and Brick Works' at some point during the early 1870s. Once the Tregonning Hill works had been established the company expanded the business in 1875, taking over Wheal Grey clay works, and building kilns here as well (www.germoe-parish-council.org.uk, Barton 1966). By 1878 they had become known as Wheal Grey China Clay and Tin Company and were prospering enough to take over another sett on Tresowes Hill (Barton 1966). By 1890, William Argall and Company were controlling the whole area (www.germoe-parish-council.org.uk).

A newspaper article dated 1878 in the Royal Cornwall Gazette gives an insightful description of the Tregonning Hill china clay and brick works as a fully established working site. The following is an extract from the article entitled 'A Ramble O'er Tregonning Hill' in which the author is given a guided tour of the works by Captain Hooper:

'Everything seems life and bustle... At the factory men and boys are at work... kneading the clay into shape for bricks, tiles, copings and every style of ornamental and architectural work. After these are moulded they are put into a huge kiln or bakehouse and a roaring fire composed of six tons of coals plays for twenty-four hours upon them, after which they are taken out, cooled and set aside for sale. It is really interesting to see the different stages of the china clay until you come to a monster shed where it lies waiting for market. These works situated on the northern slope of the hill are in two hundred shares and are laid out with great care... Mr W. Argall of Breage, feeling assured that a lot of money was still to be made from china clay, started the present company (which was formed in 1870) to work the property, and I am assured on the best authority the works are proving a great success. The company has been giving dividends for the past three or four years, and at the present moment too, when china clay, in common with other merchandise, is feeling the depression. Outside the factory men and boys are seen to be working in pits and on small tramways with the little wagons driven by 1-boy power, through long dark tunnels under the hill to the place of loading. This clay is used for porcelain, bleaching calico, papermaking, refining of wine, and the manufacture of alum, ultramarine, sulphate of alumina and colours; also for photography. It is also used for mixing with pigs' meat, and in the adulteration of flour; and horses will eat it heartily.' (Royal Cornwall Gazette 1878).

The First Edition OS map of c1880 (Fig 6) shows the layout 'China Clay and Brick Works' with both buildings and settling tanks. The kiln is shown with a large square structure adjoining it on the north-east side. Immediately to the south of it a rectangular building is shown with associated chimneys. It seems likely that this was a rectangular or Scotch kiln mentioned in an article in *The Cornishman* in 1883. To the south-west of these buildings immediately east of the clay pit there are two circular structures (probably settling tanks) associated with a rectangular settling pit and building (probable china clay dry). A series of other rectangular tanks, pits or structures are also shown scattered around the site.

Kelly's Directory 1883 states that William Argall was the manager and purser of Tregoning Clay and Brick Works at this date and that James Hooper was the agent

(Kelly's Directory 1883). Kelly's 1889 Directory lists William Argall as the manager and purser of Tregoning Clay and Brick Works but does not mention an agent (Kelly's Directory 1889).

William Argall retired in 1893 and the works was sold. At his retirement he was presented with a dinner service said to be made from Tregonning Hill clay. The Asiatic Pheasant pattern dinner service was specially emblazoned with Argall's monogram *WA* surrounded by *Tregonning Hill*. A few of the remaining pieces of the service are on display in Helston Folk Museum (www.germoeparishcouncil.org.uk) (see Figs 9 and 10).

The works was sold in 1893, and together with the Tresowes and Wheal Grey, the Tregonning Hill works was leased to John Miners Holman of Camborne, Frank Harvey of Hayle and F. W. Thomas, manager of Dolcoath Mine at Camborne. The three setts then worked as the Tregonning Clay and Brick Works (www.cornwall-calling.co.uk). A plan attached to an Indenture of this date (1893) shows the 'Tregonning Hill Clay Works' (Fig 8). The plan shows that the works at this date remained pretty much as they had been in c1880. On this plan the buildings are shown in grey and other structures such as settling tanks and pits are shown in blue.

The Encyclopaedia Britannica of 1902 makes the following statement about the Tregonning Hill Company:

'The company made fire-bricks and tiles from the refuse of the clays, taking about two-thirds of silica and one-third of mica, which are mixed together in a pug mill, moulded and burnt in round ovens holding about 16,000 bricks, and that a very superior fire-brick is made from clay direct from the "stopes," which are employed by founders, smelters, gas companies, &c. The price paid at the works is from 50s. to 55s. per 1000. The source of the materials is decomposed granite, of which Tregoning Hill consists' (Encyclopaedia Britannica 1902).

In 1903 the works were bought by John Lovering & Co. of St Austell and they had by then become known as the Wheal Grey China Clay Works (www.cornwall-calling.co.uk).

It seems likely that the business lasted only a short time after being bought by John Lovering & Co. since the Second Edition OS map of c1907 (Fig 7) shows the works as 'Disused'. Although the site had become disused by this date, all the buildings and most of the settling tanks are depicted as surviving on the c1907 OS map (Fig 7).

Whether the Tregonning Hill works reopened again after 1907 is not known. However, in 1932, following the formation of English Clays, Lovering, Pochin, Ltd., Wheal Grey, along with the Balleswidden and Leswidden near St Just and Baker's Pit near Towednack, was closed (www.cornwall-calling.co.uk).

All that survives of the works today is the beehive Scrivener kiln. Its chimney is only identifiable as a mound of overgrown rubble and all the other buildings and structures on the site have long since gone although many can still be identified as earthworks and are visible on aerial photographs. These have been plotted by the National Mapping Programme (see Fig 3).

6 Design and operation of a 19th century beehive Scrivener kiln

After the moulded bricks had been dried they were transferred to a kiln for burning. The kiln at Tregonning is known as a Scrivener kiln and was a common kiln type in Cornwall during the 19th and early 20th century. This was an intermittent kiln which meant that it was loaded, fired, cooled and unloaded for each burning. The normal fuel for these kilns was coal.

The Scrivener kiln comprises a circular, single-chamber building with an attached chimney stack operated on a downdraught principal. The design and method of use of

these kilns in West Cornwall is described by E.M. Crofts in an article in 'The Cornishman' in 1883. Crofts, after a visit to some kilns near Penzance, describes the kilns as round, domed buildings bound with bands of wrought iron. His description states that each has an arched doorway leading to a large circular chamber with a domed roof which has a central aperture in the apex. A tube of brickwork projects from the centre of the floor and rising more than halfway to the roof. This tube leads to a large fire box below the kiln floor where the coal was burnt to produce fierce flames. Adjoining the fire box below ground there is a large stoking pit from where the fire can be fed. Level with the top of the central tube inside the building the walls of the chamber are vitrified where the flames have been forced out to fill the kiln. There are a series of small holes in the kiln floor which connect with the flue to the chimney stack to allow draught and expel smoke and gases. Inside the bricks are stacked in circular rows and diagonally between the circles so that there are channels between them where the flames can pass. Once the kiln is full the doorway is bricked up and covered with fire clay and test holes in the roof are also plugged. The fire is then lit and the heat raised gradually until full white heat is seen in the whole chamber by removing loose bricks in the doorway and roof. Testing rods are then used to measure the shrinkage of the bricks and as soon as they have shrunk to the required amount the firing is stopped and the kiln left to cool (which takes five or six days) before being opened and the contents removed (Crofts 1883).

The Tregonning Hill kiln operated in much the same way as those described by Crofts but probably with some minor differences such as it having two loading doors instead of one.

7 Building description

(See Figs 11-31 and for plan and elevations Fig 32)

The Tregonning Hill kiln is a circular beehive Scrivener kiln with a domed (parabola) roof. In plan it measures 8m in diameter and stands to a height of approximately 4m (including the roof). It has two opposing loading doors (one facing north-east the other facing south-west), both of which are now partially ruined.

The walls are 2.4m high by approximately 1.4m deep and are constructed from coursed, faced, granite blocks on the external face, with a granite rubble core and single skin brick lining on the internal face. The remains of the door jambs are constructed from dressed granite blocks. The rubble core and outer granite face of the walls are bonded with decomposed granite (unprocessed china clay), probably mixed with lime to form a coarse mortar. The inner brick face is bonded with very thin layers of fine lime mortar. This single depth brick lining is laid as stretcher courses in the lower half of the wall and as header courses in the upper part of the wall. The header courses continue upwards from the wall lining to form the parabola roof structure culminating in a circular opening at the top which measures approximately 0.5m in diameter (Figs 28 and 29). Overlying the tops of the granite side walls, and laid to form a sealed, smooth, domed roof covering, is a layer of decomposed granite (unprocessed china clay), probably mixed with lime to form a coarse render. This is the same material which has been used to bond the granite walls. At the top of the walls this render roof covering reaches 0.9m deep where it fills the angle between the top of the wide granite wall and the inner brick lining which continues upwards as the roof structure (Fig 25).

The south-western part of the wall and roof in the area of the south-west loading door has suffered a significant collapse leaving an opening approximately 3m wide and only the lower part of the southern door jamb intact (Figs 18-20). It is possible, however, that part of the northern jamb remains *in situ* under the rubble collapse since a stone with a drilled socket for an iron fitting (possibly for an iron band surrounding the building or for a door fitting) is just visible at the base of the wall in roughly the right location. A granite block in the southern jamb also bears a drilled socket for an iron

fitting (Fig 20). The loading door on the north-eastern side of the building has fared better with both outer jambs fairly intact but the door arch has collapsed along with a small section of roof and inner jambs (Figs 13, 23, 24 and 25). On the external face of the south jamb in the lower half there is a drill hole containing a rusted iron fitting and opposite it on the north jamb are two closely set drill holes for similar fittings. Roughly 0.5m below these two sockets on the north jamb is a substantial iron pin (Fig 14). At the base of the door opening there are the remains of granite rubble blocking, the upper part of which has since collapsed. This blocking remains *in situ* from the last firing of the kiln when both door openings would have been blocked as part of the firing process.

Approximately 1m to the south of the north-east door on the external face where the ground dips down, a course of bricks is just visible right at the base of the wall. This is possibly the top of the flue connecting to the chimney which may have stood immediately north-east of the kiln (Fig 23).

On the north external face of the kiln wall there is a recess where one of the granite facing blocks has been removed. In a row approximately 1.5m above and to the east and west of this recess are a series of four mortar filled recesses each measuring approximately 0.2m by 0.4m (Fig 15). As there is no apparent disturbance to the corresponding internal brick face, these mortar filled recesses are likely to be repairs for missing stones. At a point roughly midway between the two door openings at the base of the north wall there is a square recessed granite block measuring approximately 0.5m² (Figs 16 and 17). It is possible that this is a blocked opening perhaps associated with a stoking pit.

Internally the original chamber floor is not visible; it is now covered with a layer of granite and brick rubble collapse mixed with topsoil (Fig 31). The central tube connecting to the fire box (below ground) which once would have stood as tall as the height of the walls is missing, but remains of it may be present below the rubble collapse. The brickwork which covers the whole interior of the chamber has been vitrified in an area around the tops of the walls and base of the roof structure. This area has clearly been exposed to the full force of the flames during firing as they emerged from the (now missing) central tube (Figs 26-28). An area of replacement brickwork lining is evident immediately south of the collapsed walling on the south-west side (Fig 27).

Evidence for openings to the below-ground structure of the kiln are not visible at present, but may come to light during the course of the proposed conservation works.

A variety of plants are causing further damage to the structure, particularly on the roof and along the southern part of the wall. These include gorse, ivy, hawthorn and brambles.

8 Significance

The surviving kiln on Tregonning Hill is a Grade II listed building. It is the only building that survives on the site of the 19th century Tregonning Hill China Clay and Brick Works. Although there were as many as 25 active brick works in Cornwall recorded in 1900 (Smith 1987), comparably few works have survived. Beehive Scrivener kilns of the type at Tregonning Hill were very common in Cornwall during the period 1860 to 1930. Many brickworks had them, but only a few now survive (John Smith, pers comm.). Other surviving kilns of note include:

Grampond Road – one kiln at Halezy SW 9157 5133

Carbis – three kilns, Listed grade II, SX 0012 5960

Carkeet – one kiln SX 2200 7330

Sandhill – two kilns in a private garden SX 4250 7110

Hill Westlake – one beehive kiln SX 4180 7190

The china clay and brickworks on Tregonning Hill is an important part of the World Heritage Site for Cornish Mining and the brickworks can be defined as an important ancillary industry of Cornish mining. The china clay quarried and used at this site was suitable for the manufacture of heat resistant refractory bricks which were needed for many specialised industrial applications such as furnaces, mine chimney stacks, arsenic calciners, tin and lead smelters and china clay pan-kilns (Smith 1987).

9 Recommendations

Recommendations for progressing with the consolidation of the kiln include the following:

- Careful vegetation clearance should be undertaken ensuring that original fabric is disturbed only when necessary.
- If collapsed rubble is to be used to rebuild walls, then it is recommended that the rubble is removed under archaeological supervision or by archaeological excavation prior to the start of consolidation works. The removal of rubble may expose important information about the kiln design. It is recommended that this is discussed with Ann Reynolds (Senior Archaeologist, Countryside Advice, Historic Environment, Cornwall Council).
- It is recommended, since this is a Grade II listed building, that like for like materials as close to the original as possible are used for repairs and reconstruction.
- The existing bonding material for the granite walls (which appears identical to the rendered roof covering) should undergo content analysis to achieve a like for like mix.
- The collapsed areas of the structure could either be made good as they are, or if reconstruction is necessary to stabilise the building, then every effort should be made to mimic the original 19th century design. Although the door arches are missing, it is clear from other surviving kilns of this type that arched door openings were used. In this building the arches may have been constructed from granite but are more likely to have been brick-built.
- It is recommended that the roof structure is repaired using its original covering material (see above). This is a render layer of decomposed granite (unprocessed china clay) which has probably been mixed with lime to form a tough render. Photographs taken in the 19th century show this to be a typical roof covering material for brick kilns of this date. The previously suggested introduction of a turf roof may encourage future growth of damaging plants such as gorse, ivy and hawthorn etc.

10 References

10.1 Primary sources

Ordnance Survey, c1880. *25 Inch Map* First Edition (licensed digital copy at HE)

Ordnance Survey, c1907. *25 Inch Map* Second Edition (licensed digital copy at HE)

Ordnance Survey, 2007. *Mastermap Digital Mapping*

Tithe Map and Apportionment, c1840. *Parish of Breage* (microfiche copy at HE)

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Indentures: CRO Refs: RH/1/3236/1 (1851), RH/3237 (1871), RH 3239 (1893)

10.2 Publications

Barton, RM, 1966. *A History of the Cornish China Clay Industry* Truro

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Royal Cornwall Gazette, 15 February 1878

Smith, JR, 1987. *Cornish Bricks and Brickmaking* (CAU unpublished report)

10.3 Websites

www.heritagegateway.org.uk/gateway/ English Heritage's online database of Sites and Monuments Records, and Listed Buildings

www.viewsofcornwall.com/static/mining_in_cornwall_great_work.php.

www.cornwall-calling.co.uk/mines/wendron/wheal-grey.htm

www.cornwall-calling.co.uk/mines/wendron/tregonning-hill.htm

1902 Encyclopaedia Britannica: www.1902encyclopedia.com/F/FIR/fire-clay-fire-bricks.html

www.germoeparishcouncil.org.uk/wp-content/uploads/tregonning-hill.pdf

www.germoeparishcouncil.org.uk

www.viewsofcornwall.com

11 Project archive

The HE project number is **146261**

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Fal Building, County Hall, Treyew Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Electronic drawings stored in the directory ..\CAD ARCHIVE\Sites T\Tregonning Hill brick kiln HBR 2013
3. Black and white photographs archived under the following index numbers: GBP 2308
4. Digital photographs stored in the directory ..\Images\Sites Q-T\ Tregonning Hill brick kiln HBR 2013
5. English Heritage/ADS OASIS online reference: cornwall2-153840
6. This report text is held in digital form as: ..\HE Projects\Sites T\ Tregonning Hill brick kiln HBR 2013

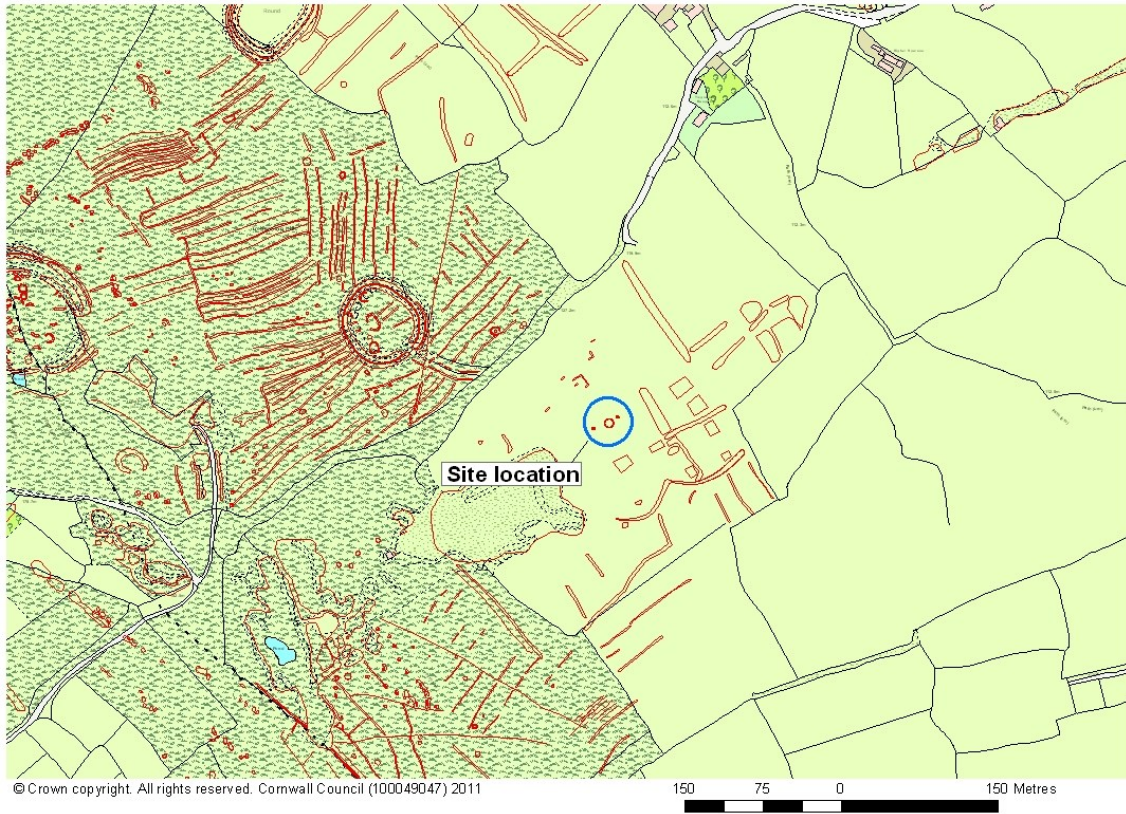


Fig 3 Ordnance Survey digital mapping (2013) with National Mapping Programme plot overlain (NMP mapping © English Heritage)



Fig 4 Extract from the OS First Edition One Inch Map c1809



Fig 5 Tithe Map for the Parish of Breage, c1840

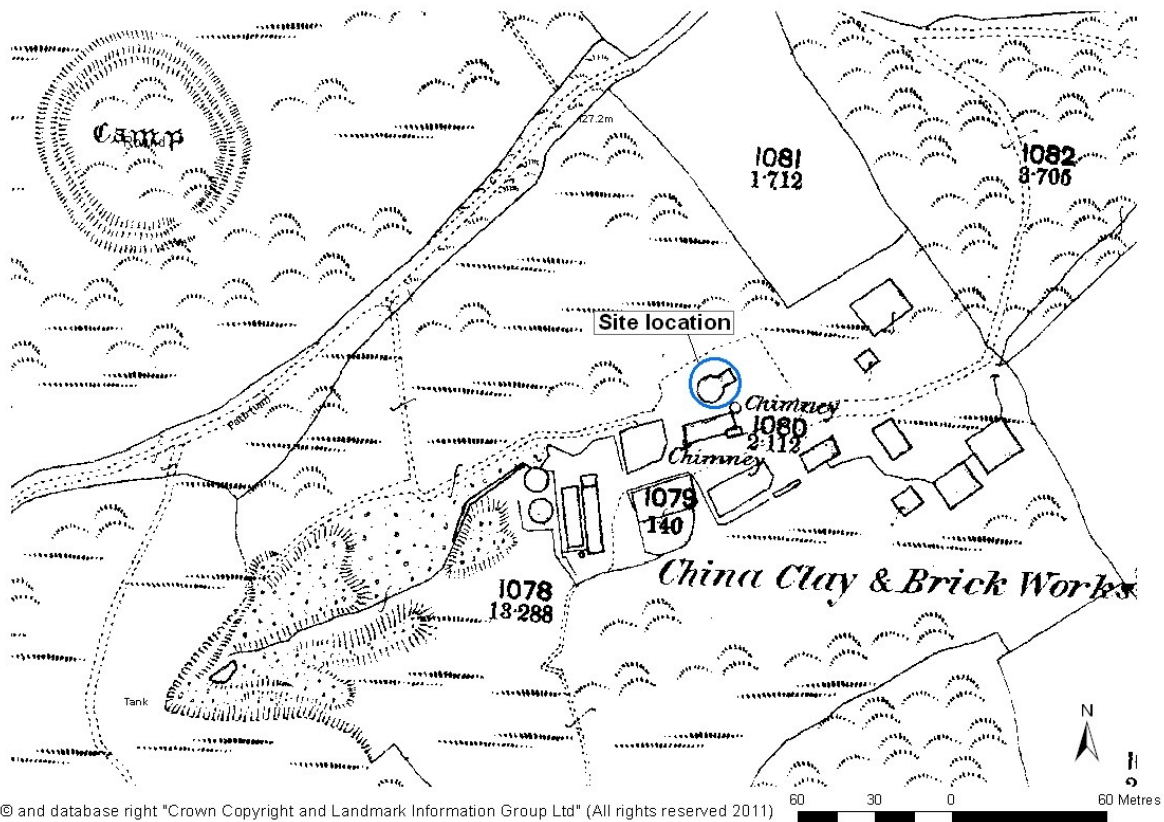


Fig 6 First Edition of the Ordnance Survey 25 Inch Map, c1880

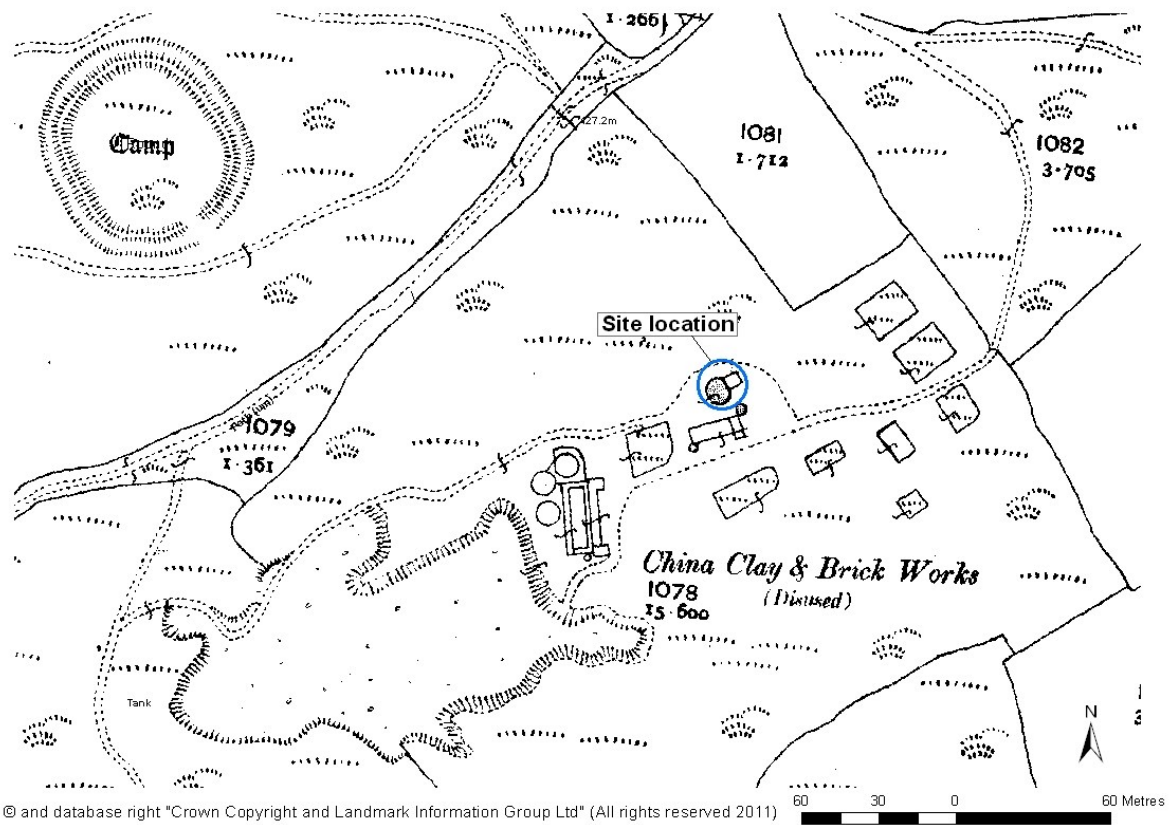


Fig 7 Second Edition of the Ordnance Survey 25 Inch Map, c1907

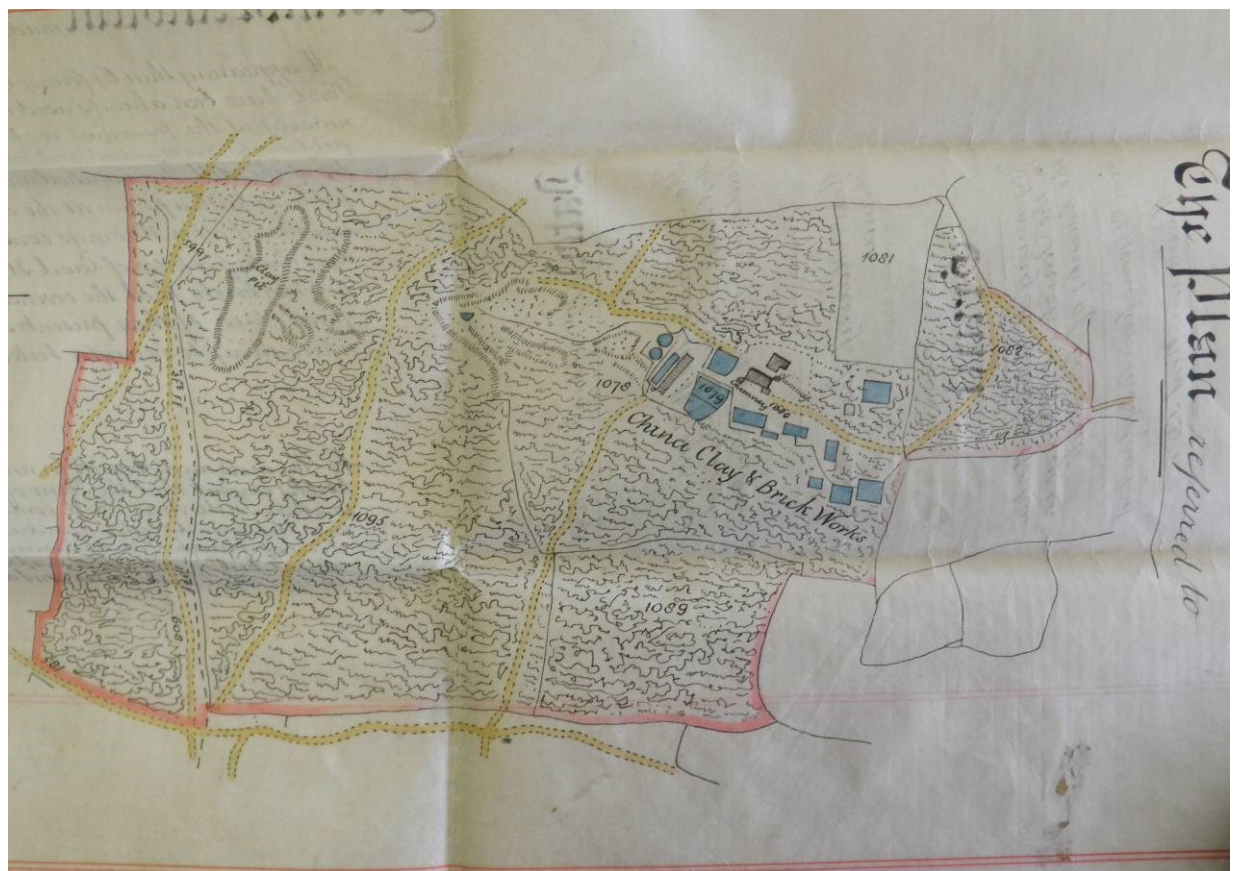


Fig 8 Plan of 'Tregonning Hill Clay Works' attached to Indenture dated 1893 (CRO Ref:RH/1/3239)

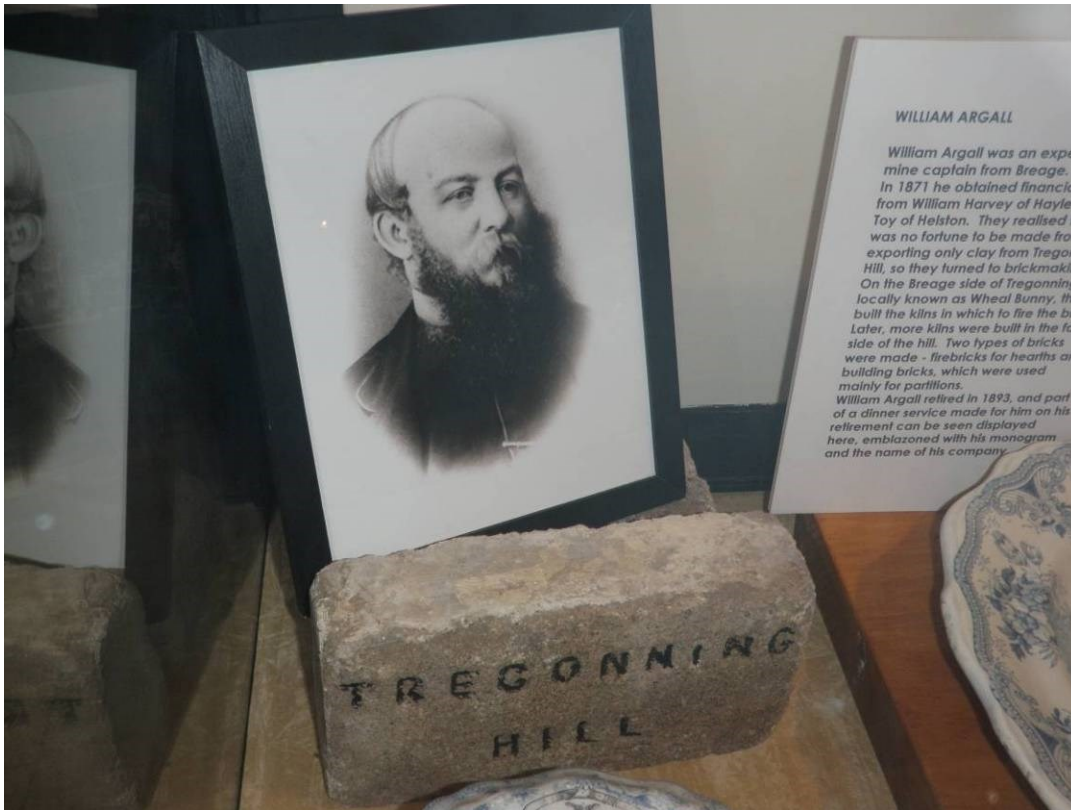


Fig 9 Photograph of William Argall and a Tregonning Hill brick on display in Helston Museum



Fig 10 Part of a dinner service made from Tregonning Hill china clay presented to William Argall on his retirement and emblazoned with his monograph and 'Tregonning Hill' on display in Helston Museum



Fig 11 North-east elevation of kiln, its chimney once located in the area of the tree to the left



Fig 12 North elevation of kiln



Fig 13 North-east loading door with collapsed arch and evidence for iron fittings



Fig 14 North jamb of north-east loading door with drill holes and iron pin below for fittings

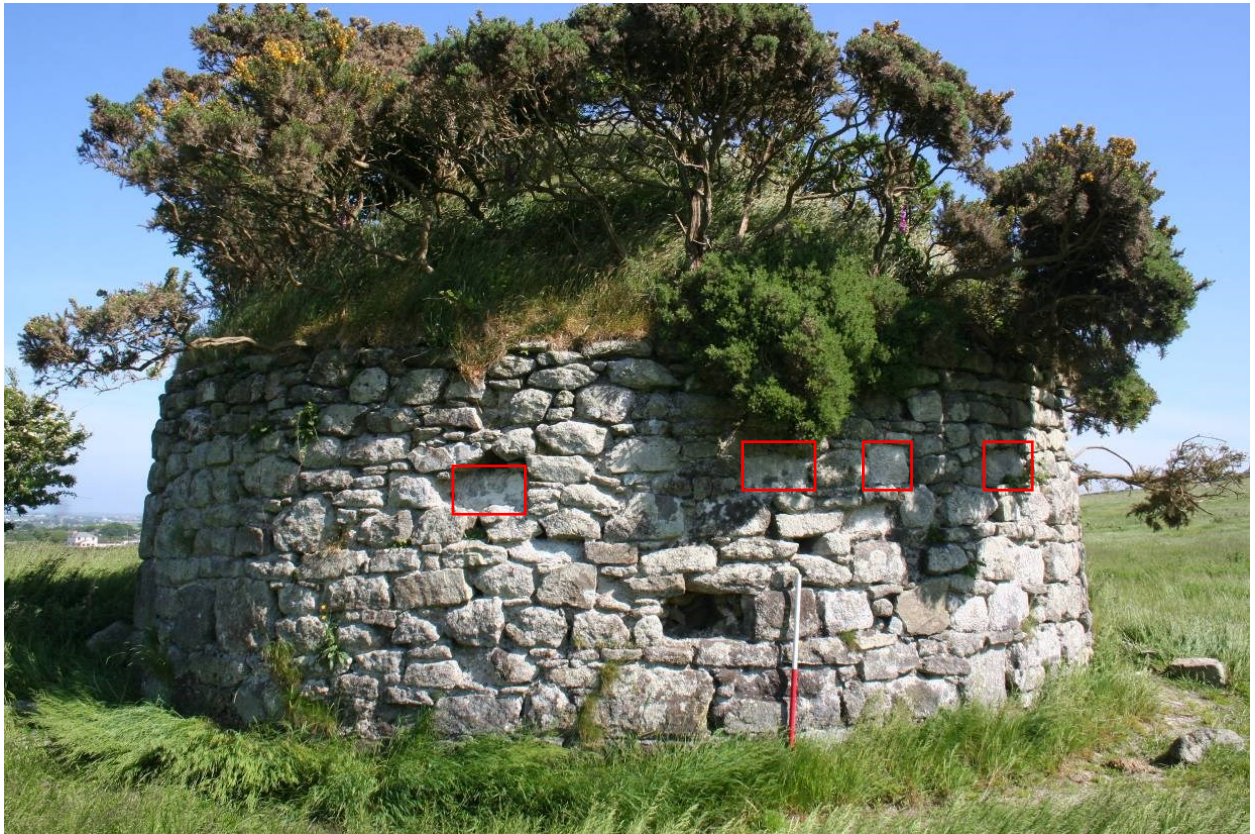


Fig 15 North-west elevation of kiln with red boxes showing filled recesses



Fig 16 West elevation of kiln with red box showing possible blocked opening



Fig 17 Possible blocked opening in west elevation of kiln



Fig 18 South-west elevation of kiln showing collapse around former loading door



Fig 19 Collapse around former south-west loading door showing section through stone wall with brick lining



Fig 20 Remains of south jamb of former south-west loading door showing drill hole for fitting



Fig 21 South elevation of kiln



Fig 22 South-east elevation of kiln



Fig 23 South-east elevation of kiln. The ranging rod is resting on top of the possible below- ground flue which may connect to the former chimney



Fig 24 Collapse around north jamb of north-east loading door showing section through stone wall with brick lining and render roof covering



Fig 25 Detail of render roof covering bridge the angle between the top of the stone wall and the brick roof structure



Fig 26 Interior of north wall of kiln showing vitrified brickwork in the upper half of the wall



Fig 27 Interior of south wall of kiln showing vitrified brickwork in the upper half of the wall and a replaced section of brickwork to the right



Fig 28 Interior of brick roof structure looking south



Fig 29 Interior of brick roof structure



Fig 30 Detail of brick roof structure



Fig 31 Collapsed rubble and earth covering the interior floor surface

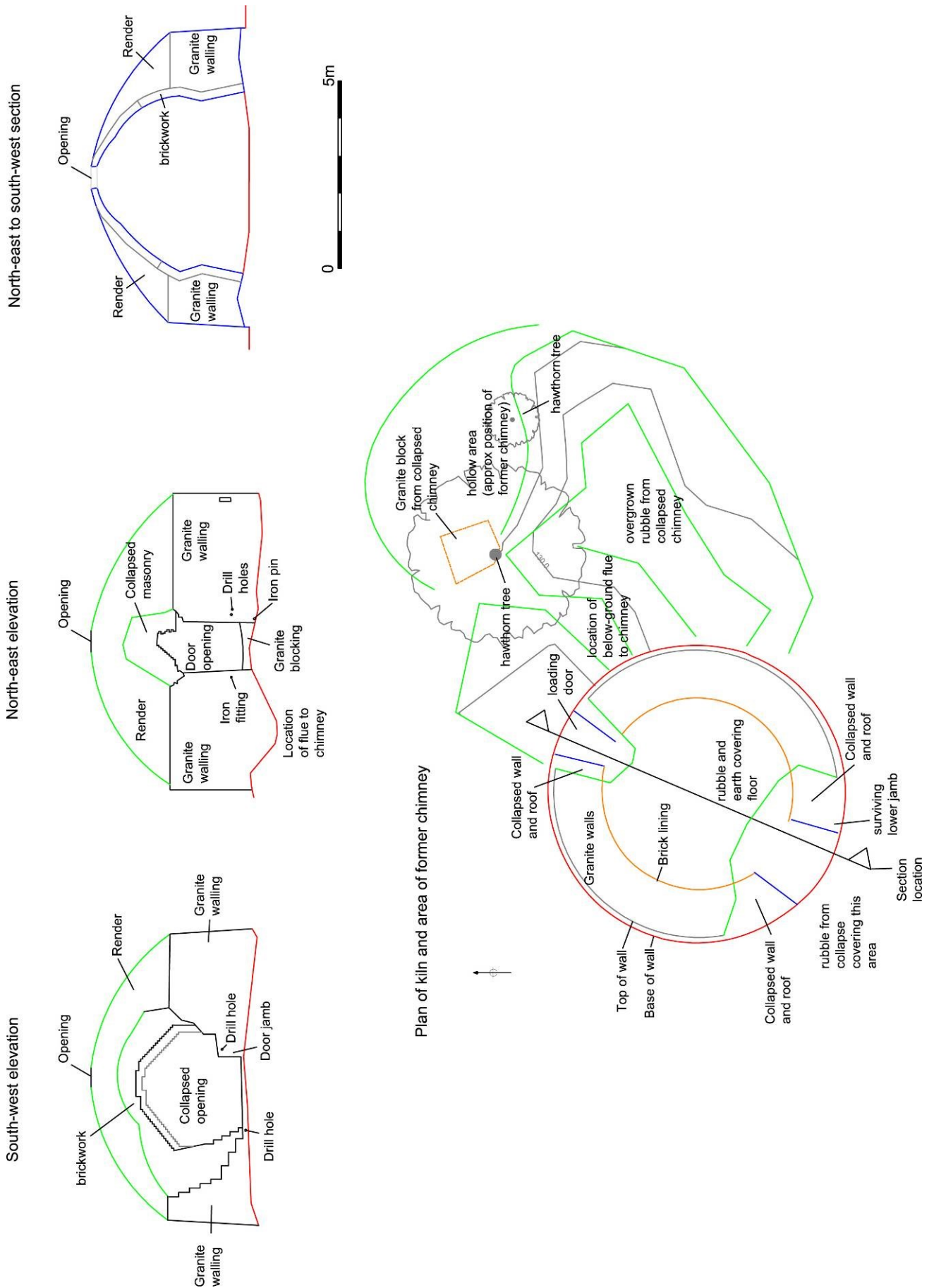


Fig 32 Plan, elevations and section (based on Nationwide Surveys drawing)