Report No: 2012R013

Wheal Rose Stamps, Cot Valley, St. Just, Cornwall

Archaeological recording of the dressing floors prior to works

Historic Environment Projects

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Client	**The National Trust**
Report Number	**2012R013**
Date	**31 November 2012**
Status	**2nd Draft**
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Acknowledgements

This study was commissioned by Jim Parry, Regional Archaeologist for the Devon and Cornwall Region of the National Trust and was carried out by Historic Environment Projects, Cornwall Council.

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

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.

Historic Environment, Cornwall Council is a Registered Organisation with the Institute for Archaeologists

Cover illustration

The western elevation of the stamping mill following ivy clearance.

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Abbreviations

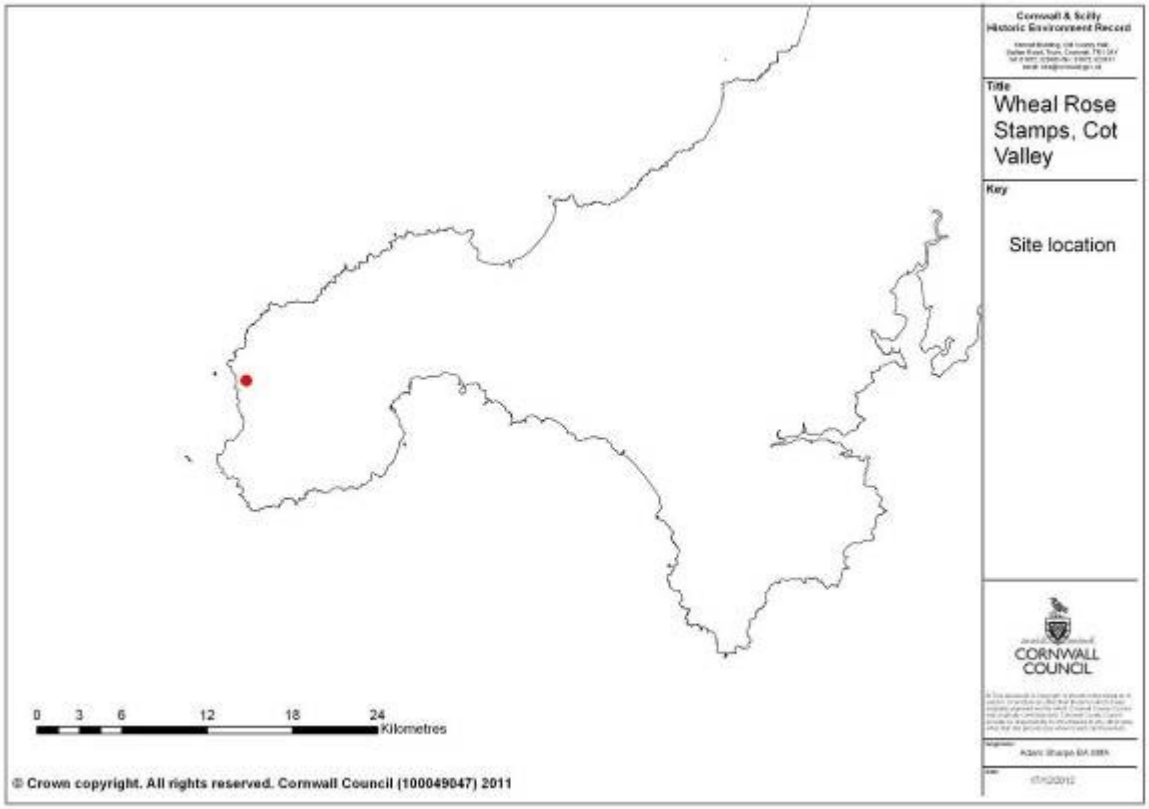
CRO	Cornwall County Record Office
EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
NGR	National Grid Reference
OS	Ordnance Survey
PRN	Primary Record Number in Cornwall HER
RIC	Royal Institution of Cornwall

1 Summary

As part of the Unlocking Our Coastal Heritage project delivered through the Rural Development Agency, the South West Coast Path and the National Trust, a number of archaeological sites were selected for conservation, enhanced management and interpretation. One such site consists of the remains of a 19th century water powered tin stamps and associated dressing floor adjacent to the Cot Stream near St. Just, part of the St. Just Area of the Cornwall and West Devon Mining Landscapes World Heritage Site. Stone robbing, the failure of pointing and substantial vegetation growth across the site and on the buildings has led to the partial collapse of the building. Long-standing fly tipping also mars the site, whilst scrub growth makes site access difficult and obscures it from nearby roads and paths.

A scheme of works is proposed to clear obscuring vegetation from the site, consolidate the remaining masonry and enable public access. Historic Environment Projects undertook a pre-works record of the site, working to a brief supplied by the National Trust Regional Archaeologist. The survey was based on a combination of direct measurement, photography, total station and high precision GPS survey.

The surveys revealed not only a number of new sites within the valley in the immediate environs of the Wheal Rose stamps and dressing floors, but also evidence of a rather more complex history for the water stamps building than had hitherto been suspected, strong indications of more than one phase of rebuild being evident.



The location of Wheal Rose Stamps, Cot Valley.

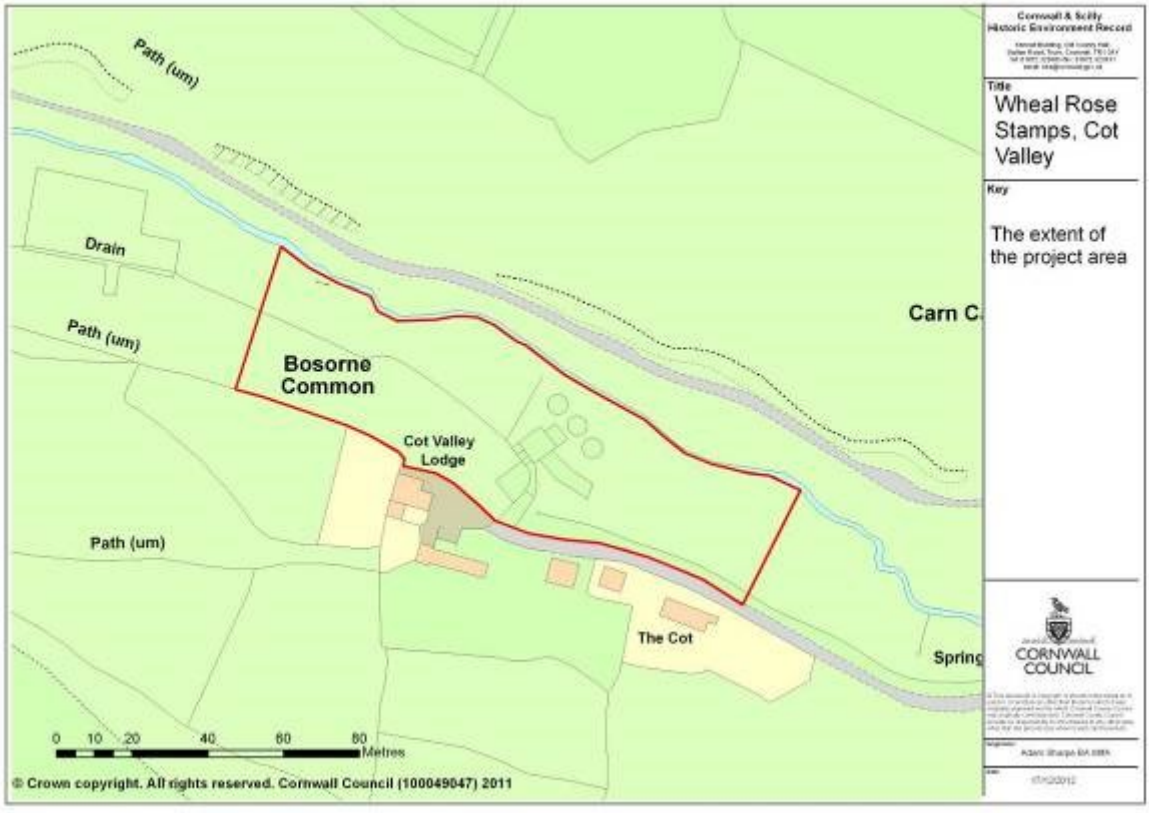


Fig 2. The extent of the project area at Wheal Rose Stamps, Cot Valley.

2 Introduction

2.1 Project background

As part of the Unlocking Our Coastal Heritage project delivered through the Rural Development Agency, the South West Coast Path and the National Trust, a number of archaeological sites were selected for conservation, enhanced management and interpretation. One such site consists of the remains of a 19th century water powered tin stamps and associated dressing floor adjacent to the Cot Stream in St. Just, part of the St. Just Area of the Cornwall and West Devon Mining Landscapes World Heritage Site. Stone robbing, the failure of pointing and substantial vegetation growth across the site and on the buildings has led to the partial collapse of the building. Long-standing fly tipping also mars the site, whilst scrub growth makes site access difficult and obscures it from nearby roads and paths.

A scheme of works is proposed to clear vegetation from the site, consolidate the remaining masonry and enable public access. Historic Environment Projects undertook a pre-works record of this site, working to a brief supplied by the National Trust Regional Archaeologist. The survey was based on a combination of direct measurement, rectified photography, total station and high precision GPS survey.

2.2 Aims

The project aim is to provide a suitably detailed record of the site and its structures which are to be the subject of conservation, access and interpretation works.

The project objective is to produce a report on the survey with a focus on interpretation, presentation and understanding, together with a CAD survey of the site.

2.3 Methods

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 site and the structures and features that were likely to survive. The main sources consulted were as follows:

- Cornwall HER
- Images of England online listed buildings database
- Early maps and photographs (see Section 9.1)
- Published histories (see Section 9.2)

2.3.2 Fieldwork

The recording of the standing sections of walling proposed for conservation by re-building or by localised repair was achieved through a combination of direct measurement, rectified photography and total station survey. The topographical survey of the site was achieved using a combination of total station and high precision GPS survey (a base station and rover combination being used to achieve sub-centimetre accuracy), linked to photographic recording. Elevations of the Little Stamps structures were drawn up by direct measurement at a scale of 1:20 on drafting film.

Scaled black and white photographs of the buildings were taken on a 35mm camera using fine grain B&W film. In addition, high resolution (10Mp) digital photographs were taken using a DSLR.

Other standing structures on the site were photographically recorded using a similar methodology, whilst general views of the site were taken using high resolution digital photography.

A series of four 250mm square test pits were excavated across the floor of the Little Stamps building, these being equally spaced from just inside its south east corner to its possible north western doorway and cut down an average of 300mm from the ground surface, where what appeared to be a stone flagged floor was encountered. The fills were entirely of waterlogged silt.

2.3.3 Post-fieldwork

Information from the total station was output via TPS-CAD to AutoCAD *.DWG files, which were subsequently tidied up. The GNSS output was in the form of *.DXF files which were partly re-drawn and converted to *.DWG files. The survey drawings of Little Stamps were scanned and re-drawn as files in AutoCad format. All photographs were archived to HE standards.

3 Location and setting

The stamps and dressing floors at Wheal Rose Stamps are centred at SW 36232 30613, adjacent to the Cot Stream in the parish of St. Just at a site whose elevation is between 50m OD and 60m OD. The BGS record the underlying bedrock as the Lands End Granite, whilst the soils are recorded as well-drained humose gritty loams of the Moor Gate series.

4 Designations

4.1 International

Wheal Rose Stamps and dressing floors lie within the St. Just Mining District Area of the Cornwall and West Devon Mining Landscapes World Heritage Site, inscribed in 2006.

4.2 National

The site lies within the Cornwall Area of Outstanding Natural Beauty.

4.3 Regional/county

Wheal Rose Stamps and dressing floors lie within an Area of Great Historic Value (AGHV), a Heritage Coast and an Area of Great Scientific Value (AGSV).

4.4 Local

The site is owned and managed by The National Trust as in-hand land.

4.5 Access

Gold status path number 114/97/1 runs down the valley past the site on its southern side. Gold status path number 114/35/1 runs diagonally up the valley side towards the coast from a point just above the site. The site forms part of an area of open access land under the CROW Act 2000.

5 Site history

Rose Reen mine (otherwise known as Reens Bounds or Reins Bounds, NT PRN 93237) was first documented in 1696 (CRO F.S.2/37) and worked a number of north-west to south-east trending lodes crossing the Cot Valley. Previous research (Sharpe 1997) had indicated that these outcropped a short distance to the south of the Wheal Rose Stamps site and ran parallel to the southern boundary of the present youth hostel grounds, which respects a partly backfilled gunnis immediately adjacent to it. The lodes do not seem to have been proved for any great distance, and only one related shaft is

known of, this being on the hillside above Meadowside Cottage. There is, however, archaeological evidence for outcrop workings on at least two parallel lodes here (see Sharpe 1997 Fig 28), and at least one adit debouching in the valley base. Adjacent to the track immediately to the east of Meadowside these outcrop workings take the form of rab-cut 'caves' into the hillside; in the gardens plots upslope from Meadowside, a further series of substantial hollows were inspected by the author during 1997. The former occupant of Cot Lodge, Mr. Brimley, discovered a hand-held ore crushing mortar of likely early date whilst digging in his garden. This suggests a medieval or early post-medieval date for these outcrop operations (see Sharpe 1997, p64), and for others found all the way down the Cot Valley on both its sides, as well as those on Ballowall Common to the north, and on Letcha Cliffs to the south, where a timber mine pump recovered from one of the adits at Wheal Hermon has been radiocarbon dated to the mid 16th century.

It should be noted, however, that the 1699 Lanhydrock Atlas locates 'Rose Reen Tinworks' on the northern side of the valley in the tenement of Bosorne, with Rose Croft and The Rose lying just to their north, placing the Rose Reen sett on the outcrops of the south-eastern ends of the lodes running across Ballowall Common and worked in nearby Bosorne Mine. A small stamping mill is shown in 1699 at this location (SW 36162 30745) utilising the water in the leat flowing through Canyack towards Carn Gloose and Priest Cove, together with a nearby smith's shop. It may be that the sett included areas on both sides of the valley, and it should be noted that 'Rose' is derived from the Cornish *Ros* – 'heathland' - a land-use description would have applied to unenclosed land almost anywhere within the Cot Valley at the time.

The earliest incarnation of the water-powered tin stamps and associated dressing floor (NT PRN 93246) known as Wheal Rose Stamps which are the subject of this study may have been associated with the operations of Rose Reen mine, perhaps during a period where more extensive dressing floors than those on the northern side of the valley were required. As reported by Joseph (2003), sites in the Cot Valley were recorded on Charles Moody's 1778 Usticke Estate map and on a plan of Wheal Hermon and South Wheal Rose dating to the 1830s (held by St. Just and Pendeen Old Cornwall Society). The stamps and dressing floors proposed for conservation were shown on the latter plan with a number of others, this site being named '*Wheal Rose Stamps, Etc.*'. The dressing floors were also shown on the 1840 St. Just Tithe Map (Fig 7). '*Little Stamps'* (downstream) were shown on the 1830 mapping, but not on the Tithe Map. It should also be noted that the 1830 plan showed that the water wheel at Wheal Rose Stamps also worked a set of flatrods running up the valley side to a shaft to the north east (see Joseph 2003, Fig 9).

The 18th and early 19th century mines such as Wheal Hermon to the south and those on Ballowall Common and at Bosorne to the north do not seem to have had their own dressing floors, and this function was probably provided by the string of water-powered stamping mills which are documented down the length of the Cot Valley. The 1830 plan held by Bill North of Pendeen locates and names some of the stamps and dwellings in the section of the valley downstream from the present bridge, these being (from east to west) *Betty Bennett's house* (Daisy Cottage SW 35467 30530), *Jasper Thomas' Stamps* (this being the stamping mill near the bridge at SW 36422 30574), *Thomas Oates' house* (Meadowside/The Cot SW 36270 30569), *Wheal Rose Stamps* (SW 36231 30614), *Count House and Smithy* (probably Cot Valley Lodge and its nearby outbuilding SW 36197 30602 and SW 36209 30583), *Little Stamps* (SW 36208 30643), *Bosorne Stamps* (the later site within the large walled yard just downstream at SW 36117 30668) and *Double Stamps* (destroyed by a realignment of the Cot Stream and formerly sited at SW 36034 30689). The locations of these sites are shown on Figure 9. Moody's earlier map located *Carran Stamps* just upstream from Jasper Thomas' Stamps at SW 36452 30597, this now being the site of a dwelling (Rosewell). As noted by Joseph, although the stamps near Meadowside were named as *Wheal Rose Stamps* in 1830, they were associated with East St. Just United Mine in 1860, and may have

stamped tin for operations such as Bosorne and Ballowall United during the 1850s, and for Bosorne Mine prior to this.

The mill shown on the 1840 Tithe Map (Fig 7) is depicted as a pair of conjoined buildings, and although little detail is given, what is shown suggests a small building containing the stamps themselves (with presumably an attached water wheel) and an elongated attached roofed shed which is likely to have been the buddle house. The buddle house was shown to the west of the stamping mill on this mapping, rather than to its east as today, probably indicating a significant reorganisation of the site layout in the following decades.

Far more detail is provided by the 1st Edition of the Ordnance Survey 25" mapping (Fig 10), which shows the principal structures present on site today – these again being a small and more or less square stamping mill with a wheelpit to the south and an elongated buddle house, this time to the east. To the north of this building the mapping showed a pair of very large (8m diameter) buddles, whilst to the east of the building was a header pond. To its west, and a little way downstream was a rectangular building that must represent Little Stamps. One leat was shown contouring along the hillside to the south of the stamps, its source either being the stream near the current bridge or possibly the stream flowing down the spur valley to its north (or possibly both). The site was accessed via a track crossing the stream via a ford just to its north-east.

Wheal Rose Stamps were again shown on the 1907 2nd Edition of the 25" mapping (Fig 11) with some minor changes, including the substitution of three slightly smaller buddles for the original larger pair and changes to the ore delivery arrangements on the south side of the stamping mill. Little Stamps were not depicted, and must be assumed to have gone out of use by this date and to have been so ruinous as to not be worth recording by the Ordnance Survey.

Sketch survey undertaken for the National Trust in 1997 (Sharpe 1997) plotted the basic arrangements of the site, together with a walled yard (NT PRN 93245) adjacent to an adit upstream (Sharpe 1997 Fig 40) which might represent the site of a further, otherwise undocumented dressing floor. Another, very poorly-preserved possible dressing floor (NT PRN 93243) lies a little way upstream again.

Downstream from Wheal Rose Stamps are the remains of a site which may be the documented Little Stamps (NT PRN 93247, Sharpe 1997 Fig 41). This surviving masonry on this site certainly includes the remains of a narrow but relatively tall wheelpit powered by a leat on the hillside immediately above, together with other, so far unidentified structures which may have had timber superstructures on masonry footings. Joseph considered that Little Stamps lay at approximately SW 3620 3062, his extract from the 1830 plan showing a waterwheel aligned north west to south east on the south eastern wall of the building. The wheelpit on the site in the Cot Valley is, however, aligned south west to north east, and Joseph, whilst recognising this wheelpit and locating it very close (SW 36208 30643) to the site for which he gives the Little Stamps NGR, tentatively interprets structures at this site as possibly the 'Count House and Shop' shown on a plan of Wheal Hermon and South Wheal Rose (CRO R66C) and on the 1830 plan of Wheal Hermon and South Wheal Rose. Joseph also notes (in relation to Jasper Thomas' Stamps upstream) that the alignments and arrangements of stamping mills in the valley as shown on the 1830 plan are at odds with what survives today and what was shown on Moody's earlier map, and concludes that their depiction may, therefore, be diagrammatic rather than fully representative.

A further set of now-lost stamps (recorded in the Lanhydrock Atlas) was located by Joseph as lying near SW 3622 3070, just to the north of the Cot Stream opposite Wheal Rose Stamps. Joseph had, however, misinterpreted a leat shown on this mapping for the Cot Stream, and the stamping mill site is actually at SW 36162 30748, 100m to the north west and on the route of the leat running across Carn Canyack and on past Carn Gloose to Priest Cove.

It is not known precisely when the Wheal Rose Stamps site went out of use, though a photograph held by John Potter (pers. comm.) which appears to be of early 20th century date shows the site, the stamps and buddle house still roofed, with a rather ramshackle timber chute leading down from the nearby roadway and a launder connecting the leat to the stamps water wheel. To the north of the stamps building can be seen a timber frames over the three buddles. Walling just visible further downstream in the background of this photograph probably represents the remains of Little Stamps. An unsurfaced track leads from the roadway in the foreground to the buddle floors via a ford across the stream.

Local people suggest that the site may have continued to work until the late 1920s, re-processing material from local waste dumps. Following their abandonment, the roofs of the buildings were stripped and all the machinery removed. Oddly, two of the buddles to the north of the stamps seem to have been deliberately destroyed by the excavation of their sites, leaving only fragments of the centre cone of the eastern example, the site occupied by the remainder now having the appearance of large waterlogged craters. The reason why the buddles should have been so drastically demolished is unknown, but this was probably to recover their granite masonry for use elsewhere.

6 Survey results

The sycamores, buddleia, brambles and bracken which had colonised various parts of the site on which the survey was carried out were known to have obscured a number of features which appeared to relate to more than one focus of activity, these including Wheal Rose, Little Stamps, one or more adits and a possibly associated walled and levelled working area. Equivalently, the ivy which covered the upper parts of the Wheal Rose Stamps buildings obscured their detail and had made them almost invisible from the nearby road. Domestic and garden rubbish have clearly been dumped within the stamps building and across much of the site over many decades since the abandonment of the site, and there was evidence that some of the structures had been plundered for masonry over the years, contributing to their dereliction. The Little Stamps site was almost wholly invisible under deep bracken.

The preliminary clearance of ivy from the buildings, and shrubs, saplings, brambles and bracken from the wider site was carried out by Simon Hocking and his team (Kernow Maintenance Services) in the third week of February 2012. Woody cuttings were piled up in archaeologically non-sensitive areas of the site for burning once they had been allowed to dry out.

The removal of the ivy which had covered the walls of the mill and buddle house brought about a dramatic transformation, resulting in a pair of buildings which had been entirely hidden for years once again becoming prominent features of the valley. It is notable that when Joseph sketch surveyed the Wheal Rose Stamps site for his 2003 Trevithick Society Journal article he could find no trace of the buddles, so obscured were they by dense vegetation, and had trouble recording much of the detail within the mill building. Vegetation clearance also revealed further detail of features within surrounding areas of the site, at the Little Stamps site just downstream and at the levelled, walled area upstream. No rubbish and rubble clearance within the Wheal Rose Stamps site was undertaken at this stage, though when this is carried out it is likely to reveal considerably more site information, in particular within the mill building and buddle house.

The measured survey soon revealed that the current OS mapping for this site is inaccurate, incomplete, and almost certainly largely based on the 1907 County Series 25” to a mile mapping, not having been surveyed on the ground since that date and, being under trees, not readily surveyable from aerial photographs (one of the principal means by which rural map detail is currently updated by the OS). As a result, several features (such as the buddle yard walling) have been missed off the modern OS MasterMap completely whilst the mapping of others (such as the Wheal Rose Stamps

mill building) bears only a passing resemblance to what actually exists on the ground. Significantly, the route of the leat between Wheal Rose Stamps and Bosorne Stamps downstream is incorrectly plotted as running to the tail of the wheelpit rather than to its head, this again being based on a misinterpretation of features visible on aerial photographs.

A comparison of the range of archive mapped information available, a copy of a rather blurred archive photograph kindly supplied by John Potter from his own collection, and the site survey revealed a rather more complex history for Wheal Rose Stamps than had been previously suspected. The stamping mill itself had been extended to the north on at least one occasion, as perhaps, had the buddle shed to its east. Some of these changes were clearly associated with the re-use of the site during the late 19th or early 20th centuries, when a concrete buddle was constructed in the buddle shed, the ore delivery arrangements to the stamps from a platform next to the roadway above the stamps were re-modelled, and the roofline of the mill was lowered. A concrete base was also constructed in a former reservoir pond to the east of the mill, whose surrounding earth banks were almost completely removed.

Some elements of the post-abandonment history of these sites were also revealed. The northern wall of Wheal Rose Stamps and its buddle house had been demolished and their masonry removed from the site; substantial amounts of masonry had also been removed from the three large buddles fronting the mill. All roofing materials had been removed, as also the waterwheel, the stamps and other machinery and timberwork. To the west, re-usable masonry also seems to have been recovered from the Little Stamps site. The removal of the earthwork forming the reservoir pond just to the east of the dressing floors may well have taken place by the beginning of the 20th century – the small area of levelled concrete at its location is likely to have provided the foundations for an item of machinery such as a small pump or an internal combustion engine.

6.1 The levelled area SW 36307 30584

See Figure 23.

A levelled area measuring 14m x 9.5m in plan and enclosed to the north and east is sited at this location just to the south of the Cot Stream. The western section of walling is mortared, 5.5m long, 0.6m wide and 0.6m high, is reasonably well-constructed and follows a straight alignment. In contrast, that continuing its line to the east is of drystone construction, is 8.0m long, 0.6m to 1.2m wide, 0.9m high on its southern face and 1.2m high to the north. It follows a meandering line, appears to have been very poorly built and is, in many places, on the point of collapse. Its upslope return to the south is 6.0m long and a maximum of 1.2m high, runs into the hillside and is faced only on its western side. The stones within both sections of the wall defining this side of the site are a mix of types – some are well-squared, clearly derived from a demolished building, others are rounded and were probably recovered from the bed of the nearby stream. In places, rough courses of small basal stones support massive topstones, contributing the instability of the structure.

The features here are clearly of two phases, and may have had distinctly different functions and origins. The walling revets a more or less levelled area which has been built up from original levels by somewhat over a metre on its northern side; where exposed, the infilling material seems to be a mixture of gravelly sand, such as would be produced by excavated rab, possibly derived from the excavation of the first sections of the nearby adit. To the west, the walling is more formalised and may have partly defined and partly revetted a yard associated with the adit, as well as providing an area where excavation spoil could be disposed of. The eastern section looks as if it was constructed by an enthusiastic (if rather unskilled) amateur, and may represent an intention to extend the former yard to provide a garden plot – perhaps one associated with the cottage just upslope. No estimation of the date of either section could be made, though the eastern walling incorporates an undatable half brick in its upper section. The walling is not shown on any OS mapping.

6.2 The adit SW 36296 30592

See Fig 24.

A silted up adit lobby 13m long extending to a tumbled wall set 4.0m back from the stream, 2.3m wide at its top and 1.4m wide in its base, of which 1.1m depth can still be seen running from the valley side to the nearby stream served to drain a small (0.8m wide) now-flooded adit running southwards in the direction of a shaft 85m away at SW 36309 30483. This may be the drainage adit for Reens mine, which was documented as having worked a sett in this general area. At least three lodes outcrop across the valley side, workings on them taking the form of massive rab-cut hollows in the garden plots associated with Cot Lodge, as rather more amorphous linear hollows in the unenclosed land further upslope, and as a substantial rubbish-filled rock-cut gunnis running along the southern boundary of the Youth Hostel, and almost certainly defining the alignment of this hedge. Rose Reen (otherwise Reens or Reins Bounds) have been documented in more or less this location since 1696 (CRO F.S.2/37, Vol 1.23), and the field evidence suggests that the workings are predominantly early and were operated on a relatively modest scale, the only formalised shaft recorded possibly reflecting a late reworking or a re-prospecting of the lodes (possibly as part of Hermon Mine). Bob Brimley, a former occupant of Cot Lodge, retrieved a hand-held ore crushing mortar from one of the early workings in his garden, this artefact being likely to be early post-medieval (or even earlier) in date.

Although open, silting of the adit lobby has caused water to back up within the adit almost up to its roof. Domestic rubbish has also been dumped into the mouth of the adit, and as a result, no survey of its interior and extent was possible. The adit is not shown on any OS mapping.

6.3 The reservoir SW 36257 30596

This reservoir appears to be depicted on the 1830 Wheal Hermon and South Wheal Rose plan (see Joseph 2003, Fig 9) to the east of Wheal Rose Stamps, and again on the OS 1st and 2nd Edition 25" mapping (circa 1877 and 1907), though was not labelled on any of these sources, and was not shown as having a feeder leat. It was not included in Joseph's sketch survey.

The OS mapping showed the pond as trapezoidal in plan and measuring 22m long, 6.5m wide at its western end and 3.75m wide at its eastern end. The northern pond bank has been completely dismantled, though stonework revetting the valley side survives on the southern side of the pond to a height of 0.7m; the bank above this is revetted with stonework one metre high. At its western end, some fragments of the walling survives in its southern corner, whilst to the east, low earthworks suggest the location of the rear wall of the pond, which was probably originally a fairly shallow feature. The western end of the pond sites an overgrown concrete slab roughly 1.5m x 2.6m in plan, close to the edge of which a single bolt protrudes from the ground surface, suggesting that a small shed or an item of machinery associated with the later use of the dressing floor had been sited here, the use of concrete suggesting a date during the early 20th century. The removal of the earth banks defining the reservoir on its northern and eastern sides may also have taken place at this date.

A further small rectangular enclosure measuring 7.0m square, defined by very tumbled walls, is sited on the bank slope between the reservoir and the leat. This feature is not shown on any archive mapping and may represent the remains of a small garden plot.

6.4 Wheal Rose Stamps (SW 36231 30614), buddle house (SW 36237 30606) and buddle yard (SW 36242 30621)

See Figs 7–17, 26-41, 44.

A set of stamps are known to have been sited at this location since at least 1830, but there may well have been water-powered tin dressing equipment on this site for

centuries before this. The present dressing floors are clearly multi-phase, having certainly worked until the beginning of the 20th century when a small girl was reported as being badly injured after becoming entangled with the buddle water wheel (Joseph 2003). The site may have last been operated during the 1920s when it appears (from information supplied by local residents) that material from some of the nearby mine dumps was being re-worked here. The current mill building itself is clearly multi-phase, as can be seen from the masonry making up its western wall, where there is evidence that an originally smaller, possibly derelict, building was extended to the north by 2.3 metres and partially rebuilt.

The mill was shown on the OS 1877 mapping as measuring 9.0m x 6.5m in plan, with a small unroofed rectangular extension on its northern side, its wheelpit being on its southern side.

The mill has maximum internal dimensions of 7.7m (north-south) by 6.0m (east-west), with walls 0.6m thick to the west, north and east and 0.7m thick to the south. It stands to a maximum of 5.7m high (from the current base of the wheelpit to the top of the adjoining wall), is of granite construction and solidly made, with well-squared quoins in its newer, northern section (the quoins in the older part are all rather less sharply cut). Its southern wall survives to almost its original height and profile, as also its western wall. The northern wall has been almost completely demolished and its stonework removed from the site. There is no sign of a wall closing off the mill on its eastern side, and this may have been of timber construction, or the mill might have been open to the adjoining building at this elevation, and to the higher level spalling floor. The wheelpit is more or less intact, though some stonework seems to have been removed, or to have collapsed into the base of the pit. The rotting away of a lintel spanning the axle opening on the southern face of the wheelpit has led to some of this stone loss.

The wheelpit is 6.2m long and 0.8m wide, so would have accommodated a wheel of about 17 foot diameter, whose axle passed through a 0.8m x 0.7m rectangular opening in the wall to a set of perhaps six or eight stamps (in two groups) aligned south-north. Ore was fed to these stamps down a full width chute from the east, the mill walling here being only half height, suggesting that the upper part of the wall was wholly or partially open to the adjacent spalling floor. A pair of iron bolts inside the southern wall of the building probably supported a substantial timber trestle on which one end of the stamps axle bearing would have been sited, whilst originally paired pieces of iron plate protruding from the ground to the north of the stamps would have framed a timber construction of unknown function, possibly a launder. The only surviving window in the building is in the centre of the original part of the western elevation; this measures 0.7m x 0.6m.

The OS mapping dating to 1877 and 1907, as well as the modern mapping, depict a small rectangular extension on the northern side of the mill measuring 5.0m x 2.0m in plan which does not correlate with the field evidence and may represent a perpetuated mapping error, as the northern wall of the mill building immediately abuts the buddles depicted on the 1907 survey. It is possible that this small extension existed in 1877, but was over-built when the mill was extended to the north subsequent to this.

The mill building has clearly undergone at least one major phase of rebuild, though given the apparent inaccuracy of the archive OS mapping, this is difficult to date. The southern wall has been rebuilt at its eastern end, possibly as part of a widening of the opening at the rear of the stamps. This rebuild seems to have been limited to the corner of the wall, and was notably poorly executed. The other wall within which there is evidence for rebuilding is that to the west, this part of the building having clearly been extended to the north, but its upper section to the south has also been quite substantially rebuilt. The probable 1920s photograph of the mill from the north east clearly shows its northern wall as having been gabled, but the survey shows that the southern wall clearly was not, possibly having been hipped or half-hipped. The wall plate level on the western wall is notably lower than the south-western end of the southern wall, suggesting either that the upper section of this wall was composed of

timber planking, or that the early 20th century roofline was lower than that of the 19th century building. A significant rebuild is also to a certain extent correlated by the survey evidence from the buddle building to its east (see below).

The evidence suggests several possible scenarios. The original mill was clearly smaller in plan than the present building, and, if the OS map evidence is to be believed, had a small, unroofed extension on its northern side between the mill and the buddle yard. This mill's roof profile is uncertain, though it may originally have been hipped or half-hipped on both the northern and southern elevations. Following a possible period of disuse when the mill became semi derelict, it was partially rebuilt on a larger plan, with a gabled north wall and a truncated western wall (possibly with a timber-clad upper section) under a lightweight steel sheet or boarded roof (on the evidence of the archive photograph. The gabled roof peak may have been lower than that of the original southern wall head, though there are no fixing lines to confirm that this was the case. The adjacent buddle shed was also rebuilt, its northern wall being set back from its original line by a couple of metres, the lightweight roof sitting approximately half a metre lower than the gable head to the east (photographic evidence courtesy of John Potter). This may have coincided with the re-arrangement of the buddle yard (OS map evidence), and therefore have taken place between 1887 and 1907, the reasons for bringing the mill back into use most probably being to provide the facilities to re-work mine waste dumps during a period of rising tin prices, rather than to provide dressing floors for an operational mine.

To the east of the mill, archive maps including the 1877 and 1907 OS all showed a slightly curved elongated building measuring 16.8m x 4.3m in plan which must have housed equipment used for concentrating the tin. It must be assumed (though given the rubbish and rubble covering the floor of the mill and this building, this cannot be confirmed) that the pulp from the stamps, having been buddled, was brought back into this building for final concentration. A photograph in John Potter's collection which probably dates to the early 20th century shows this building to have had a gabled roof, probably of metal sheeting. As mentioned above, the northern wall of the buddle shed is shown as being set back from that of the mill by about two metres on this photograph and lower than the gabled wall forming the eastern end of the building.

The southern wall of the buddle building is 10.7m long, 3.5m high to the north but only a metre or so high to the south (against the spalling floor), and is less robustly constructed than the mill, which it abuts at its western end. The eastern end of the south wall has been extended by 6.3m in slightly less formally-laid masonry (possibly reflecting a pre-1877 extension), the wall line curving slightly to the north in this section. An area of substantial collapse here is the result of root infiltration by a mature sycamore growing immediately behind the wall line. The formerly gabled eastern wall now survives only in a low and fragmentary form, whilst the northern wall has been robbed away completely. No physical evidence for the line of the wall shown in the 1920s photograph could be found; this area is, however, covered in leaf litter and rubbish, and if the early 20th century wall was of timber construction, it might now be represented only by a line of corroded bolts.

A single 4.0m diameter, 0.3m deep concrete-faced dumb buddle which is probably of early 20th date is sited in the south eastern corner of this building. This is partially obscured by rubble and rubbish; others may survive further to the west within the building, though no evidence for these is currently visible.

Immediately to the south of the buddle building, a levelled platform set above it would probably have been used for spalling (breaking up) larger pieces of ore, which would have been delivered to this area of the site via a 6.2m long, 1.8m wide stone-faced chute revetting the bank below a platformed area adjacent to the nearby track. Earth and leaf litter covers the surface of this spalling floor, obscuring any original hard surfacing, but with the removal of some of the material covering this area, some apparently deliberately-laid granite surfacing was partially revealed. A photograph which probably dates to the early decades of the 20th century suggests that this original

ore delivery arrangement was eventually superseded, the ore being delivered directly to the back of the stamps from the platformed area adjacent to the road using a trestled timber arrangement incorporating an elongated wooden chute. This would tend to confirm the suggestion that mine waste was being re-worked during this period, as such material would require little size reduction before stamping, unlike ore blasted from stopes in an active mine.

The original granite-faced chute shows signs of hard wear, the ore sliding down it having hollowed and polished it. One detail which emerged during the survey is that the constructors of this feature took particular care to ensure that large pieces of ore slid down the chute did not dislodge the cheek stones which defined its edges; these were offset slightly from each other so that there was no possibility of pieces of ore catching the upper corners of the stones.

To the north of the mill and the old buddle house is a masonry-revetted buddle floor, much as depicted by the Ordnance Survey in 1907, siting three large buddles, each 5.3m in diameter and at least 1.2m deep, though these are enclosed within a masonry yard wall 1.5m high which was not mapped in either 1877 or 1907 (possibly an omission in 1907 as this feature appears to be at the least contemporary with the three buddles). The 1877 OS mapping had shown two larger 9.0m diameter buddles occupying an unenclosed area to the north of the mill, together with a large tank or pond immediately to their west. The three buddles depicted on the 1907 mapping have been damaged by stone robbing, partial infill with rubble and the probable excavation of their bases. That to the east has been particularly badly damaged, though retains part of its concrete centre cone measuring 1.9m in diameter. A section of single stone walling 1.8m long, 0.15m high and 0.3m wide running from the remains of the cone to the north must post-date the use of the buddle, as it would have rendered it inoperable. The function of this wall is unclear.

Immediately to the west of the buddle floor is a feature which has the appearance of a small wheelpit measuring 3.5m x 0.9m in plan, set at a low level within a partially surviving walled enclosure measuring 4.5m x 2.25m in plan and 1.4m deep. The pit is currently almost wholly infilled with waterlogged silt, and what may be a narrow outlet in its north western corner is blocked with tumbled stone. This is likely to be the site of the waterwheel which powered the buddles where the small girl had her unfortunate accident. It is sited on the centreline of the three buddles to its east, which it would have powered via a line-shaft set on the timber trestles showing in John Potter's photograph.

John Potter's photograph confirms detail on the OS archive mapping indicating that a new track was created to the mill between 1877 and 1907 spurring off the newly-created road running down the valley and continuing diagonally up onto Ballowall Common, the stream being forded just to the east of the mill. Modification of the road formation which took place during following decades (most likely during the 1940s re-working of Wheal Hermon and Bellan Mine) have obscured the point where the track to the Wheal Rose Stamps spurred off it. Deep brambles and bracken obscure the track route, and no traces of the ford can be seen.

6.5 Settling tanks, leats and channels

See Figs 14 -15, 22, 25 and 42.

The management of water and drainage systems around this site and in the remainder of the valley is, to say the least, complex, in places now partially fragmented, and certainly multi-phase. The water supply for Wheal Rose Stamps was taken from the Cot Stream near the bridge and, although not shown by the OS, was impounded in an elongated reservoir immediately downstream from it. From here, it followed the contour in a leat averaging 0.9m wide, defined on its southern side by an upcast bank averaging 1.2m wide and 0.8m high. This ran along the valley side to a point above Wheal Rose Stamps where it flowed under a clapper bridge which allowed ore to be

carted to the head of the stamps ore chute. This leat originally flowed on beyond this point along the valley side, continuing out towards Pen Nanven and eventually running along Letcha Cliff, having been culverted under the track near Bosorne Stamps, as shown by the OS in both 1877 and 1907. Widening of the track running from Cot Lodge towards Pen Nanven seems to have obscured this feature and removed the link between the eastern and western sections of the leat.

Having passed under the bridge, the water was taken off to power the Wheal Rose Stamps wheel, whose tailrace was immediately diverted off along the contour to feed the wheels at Little Stamps, Bosorne Stamps and a very ruinous (and probably early) mill further downstream at SW 36049 30671, the leat being realigned within the section between Wheal Rose Stamps and Bosorne Stamps between 1877 and 1907 when the new Bosorne dressing floors were constructed. It should be noted that the route of this section of the leat shown on current OS maps is incorrect, as it implies that the tailrace from Wheal Rose Stamps flows along the contour to the foot of Bosorne Stamps wheelpit, whereas it actually fed this wheel from above. Beyond Bosorne Stamps the leat continued on towards Pen Nanven, paralleling that not far upslope.

The Wheal Rose mill tailrace seems also to have been capable of being diverted downslope via a channel which passed through a number of settling tanks between the mill and Little Stamps, some of these being depicted on the 1877 OS mapping. It is unclear why this should have been the case, unless perhaps, the tail race was being used to flush these features out periodically.

A further leat was taken off the stream just in front of the north western corner of the Wheal Rose Stamps buddle yard, cutting through (or feeding) the settling tanks to their west (and perhaps being joined there by the tailrace from Wheal Rose Stamps). This leat certainly flowed past Little Stamps, though there is a suspicion that it might have been capable of being diverted into the eastern structure at Little Stamps, employing this as a settling tank (perhaps following the disuse of its original function). Beyond Little Stamps, the leat continued to Bosorne Stamps, where the tailrace from its 12m diameter wheel must have been culverted beneath it (at SW 36119 30662), and continued beyond this site following the contour, again running out onto Letcha Cliff. The leat was tapped twice along the western section of this route to serve now-lost dressing floors further down the valley.

A section of a further, and more fragmentary leat 0.5m wide and 0.4m deep can be traced over some distance just downslope from the Wheal Rose Stamps leat to the east of the stamps site. The source for this is likely to have been the Cot Stream a short way downstream from the present bridge, though the take off point could not be identified as this area is now very waterlogged and overgrown. The leat appears to turn at right angles downslope immediately to the east of the levelled area enclosed by walling in the eastern part of the site, and may therefore have originally served a small waterwheel at this location, for which no traces of a likely site could be found. As an alternative, although no physical connection can now be found on the ground, it may have continued beyond the adit lobby to fill a now-destroyed header pond just to the east of the stamps shown on both the 1877 and 1907 OS mapping (see above). The elevation of this pond (which is more or less level with the buddle floor) makes it unclear what it was used for. It may be an earlier feature relating to a predecessor to Wheal Rose stamps, may have supplied washing water to the buddle floor or may have provided a head of water for a now lost site further downstream, again one which is likely to have predated the development of Wheal Rose Stamps.

6.6 Little Stamps centred SW 36208 30643

See Figs 15, 18-22 and 43.

The identification of this site is somewhat uncertain, though it appears to be in approximately the location given by Joseph from the 1830 map of Wheal Hermon and South Wheal Rose, incorporates a waterwheel pit and certainly predates many of the

other structures within the surrounding area. A photograph dating to the early 20th century appear to show walling up to 2.0m high on this site, though what remains today is now considerably lower than this.

The site was surveyed in plan using high precision GPS, whilst its elevations were recorded by direct measurement on drafting film. In addition, seven small (0.25m square) test pits were dug across parts of its interior to determine its original floor level and the nature of the infill in the eastern building, whose interior was exceptionally boggy. The four test pits within the interior of the structure revealed the infilling material to be uniformly 0.66m deep and composed of water-deposited clays, silts and sands. Intriguingly these seem to have been deposited onto a carefully laid granite flagged floor which was intersected in most of the test pits. A test pit in the wall gap at the north eastern corner of the building came down onto a large stone at 0.3m from surface, and it did not prove possible to determine whether this was part of the nearby wall or tumbled material from it, and it was not therefore possible to determine whether the nearby leat/slimes channel had been fed into the structure at this point, perhaps as a later re-use of what remained of it as a settling tank. A test pit in the north western corner of the building was similarly uninformative, whilst a test pit in the wheelpit came down onto sycamore roots at 0.3m from surface. The wheelpit walls clearly continued down within the infill of this feature and it seems probable that the base of the 5.0m long wheelpit would have lain close to the current stream level. Although there is some revetment walling facing the stream bank, this is very tumbled and no indications of a formalised tail race through it could be seen.

The walling of the eastern structure resembles hedging or barely formalised revetting walling, being composed of generally end-set, roughly coursed river cobbles. It also incorporates a number of roughly shaped large natural boulders, the wall being a maximum of 1.2m high, mostly less. It seems unlikely that such crudely constructed masonry could have supported anything other than a very lightweight roof, and certainly did not define a former count house. Nevertheless, the apparent presence of carefully laid granite slabs forming the base of this structure suggests either that a properly levelled hard-surfaced floor was required for some purpose, possibly because it was necessary to recover any materials deposited on it (unlike an earth floor). It may be that the floor of this structure incorporates buddles – given its likely date, these may well be trapezoidal or rectangular in plan. As this seems almost certain to have been a stamps site, tin concentrate was almost certainly handled in this area.

The unusual layout of the building is also clearly deliberate, with two low (0.45m high) plinthed areas set against its walls in its eastern and western sections. These do not seem to be surfaced in any way, and at present remain uninterpretable.

The fairly massive wheelpit walling has clearly been substantially robbed away or collapsed into the pit, and only some of its lower courses remain (to an average of 0.4m high protruding from the pit fills). One of these retains a large drillhole containing the remains of an iron pin – possibly one of the water wheel axle bearing hold-down bolts, given its position near the centreline of the pit. Much of the stonework revetting the bank at the rear of the wheelpit has collapsed and what remains is only 1.5m high, though sufficient survives to indicate the position of the rear end of the wheelpit. The pit appears to have been 4.4m long, and may have been open at its northern (tailrace) end, there being no trace of walling in this location. A pit of this size would have accommodated a fairly substantial wheel – perhaps 16 feet in diameter and three feet in width – very similar in dimensions to that employed at the nearby Wheal Rose Stamps (to which it might have been relocated). To the east of the wheelpit walling is another shaped boulder set into the bank within a small hollowed area which would be the likely location for a small set of stamps (perhaps no more than three in total); some hollowing in the bank above this location is suggestive of an ore chute, though no facing stonework could be found by probing. It seems that all elements of the stamps themselves have been removed.

An apparently levelled narrow platform has been cut into the hillslope behind the eastern structure at Little Stamps. This may have been created simply to prevent material banking up against a now-lost superstructure, though dense bracken to the east of this area (upslope from the adjacent settling tank) appears to cover a further, larger, deliberately platformed area.

In summary therefore, the one relatively early documentary reference to a small set of stamps in approximately this location appears to be corroborated by the field evidence. The structures here are vernacular in style, clearly truncated by stone robbing, possibly slighted by a leat and were also possibly partially reused as a settling tank. They clearly predate Wheal Rose Stamps just to the east, and are therefore at least 18th century in date, and possibly earlier.

7 Conclusions/discussion

The water-powered tin stamping mill and its associated dressing floor features which survive at Wheal Rose Stamps, Cot Valley are typical of a site type which would formerly have been fairly common in the valleys of West Cornwall, but which is now represented by a handful of sites, some of which are now little more than tumbled ruins.

The Cot and Kenidjack Streams (together with the Portheras Stream in Morvah) were particularly important sources of water power for centuries, both for agriculture and industry, and sited a large number of tin stamping mills. An important group of these at Botallack Bottoms (Carn Praunter) in the Kenidjack Valley were conserved in 2008/9 by the National Trust and Cornwall County Council, and some limited conservation of another in the upper Cot Valley was undertaken as part of the St. Just Environmental Project shortly thereafter. Wheal Rose stamping mill is the best preserved of the remaining traditional tin dressing floors in the Cot Valley. There has probably been a small-scale tin stamping mill on or near this site for centuries. Like others in West Penwith, it has seen several phases of use, some being accompanied by structural modifications. Within the Cot Valley (as also at in the Kenidjack and Portheras Valleys), there is good surviving evidence for complex, multi-phase systems of water management.

The removal of the ivy cover on the buildings and some of the scrub cloaking the site has revealed that the site components at Wheal Rose Stamps are in reasonable structural condition and are considerably more complex than had previously been thought to be the case. Whilst certainly in need of remedial attention, it is also clear that they have considerable potential for enhanced access and interpretation.

8 Recommendations

The stamping mill

It is recommended that a number of semi-mature sycamores within and immediately adjacent to the mill complex should be felled and stump treated to prevent any further root damage to its masonry or catastrophic damage to its walls should they fall. Care will need to be taken during the felling to ensure that no damage is done to the nearby structures. A substantial buddleia at the eastern end of the buddle yard should also be removed, and consideration should be given to the clearance of bramble and other scrub obscuring the low-level tank adjacent to the west of the buddle yard. Woody material which has already been cleared and stacked on site should be burned. A programme of annual cutting should be instituted to prevent woody regrowth and to ensure that the site and its features remain visible and accessible following the building works programme. It is recommended that trees adjacent to the site are examined to see whether a case can be made for a requirement for further felling and clearance. It

should be noted that trees within the site are covered by a Tree Preservation Order (CC Ref 8K7B1/66 dated 20/05/97) which covers this part of the Cot Valley.

Rubbish within and around the mill complex should be removed from the site and disposed of. Accumulated leaf litter and garden waste should be removed from within the mill, the buddle house and the spalling floor where this currently obscures floor detail. Any features revealed during this process should be recorded by an archaeologist and added to the 2012 survey. Some of the rubble resulting from wall collapses may also need to be cleared, for example from within the wheelpit. Local residents should be dissuaded from dumping any further garden waste over the bank adjacent to the road. Removal of bracken litter and rhizomes from the buddle yard would probably enhance its interpretation and reduce future vegetation management requirements. Japanese knotweed growing on and adjacent to the site are the subject of an ongoing eradication programme being carried out by the National Trust.

Now that the ivy has been cleared from the mill and buddle house, it should be possible to draw up a detailed set of specifications for the consolidation and repair of these buildings and their associated structures. This should be based on the use of a hydraulic lime mortar incorporating a range of aggregates which will provide a reasonable match to the existing pointing, and should be designed for a minimum of 30 year life without major maintenance. Any existing degraded or detached pointing should be dug out to a depth of at least 50mm, and all areas of cement-based repair pointing should be removed. All wall head stonework should be re-laid in lime mortar. A new oak lintel will be required on the southern face of the wheelpit wall above its axle opening. Fallen or loose stones should be re-set, particularly above the axle opening and above the window in the western wall of the mill on its internal elevation. Where walls have broken ends resulting from stone robbing or collapse, these should be pointed to prevent water ingress – some fallen masonry may need to be reinstated to ensure the long-term stability of sections of the walling of the mill and buddle shed.

Within the eastern end of the buddle house, the walling forming its southern side was seen not to be founded on solid ground, but to have been built up from a cut into the earth bank behind. This may need to be underpinned (preferably utilising a masonry wall) to prevent any further collapse of this structure. The collapse to the section of wall immediately to the east of this was caused by the root action of a semi-mature sycamore which had become established immediately behind the wall. Further significant damage to the walling is likely to result if this sycamore is not felled and its roots killed off. The 4.0m diameter dumb buddle should be cleared out and, if required, repaired in concrete. Any roots in, on and running through this feature should be killed off to prevent further damage and the adjacent sycamore felled.

The buddle yard wall facings and the walls surrounding the buddle wheelpit should be cleared of any remnant ivy and their pointing inspected and, if necessary replaced or repaired. Scrub or small trees which have taken root in their wall heads should be killed off and the top courses of masonry re-laid in lime mortar. Sections of loose or fallen stonework should be rebuilt where they are currently causing instability or are likely to cause this in the future, particularly at the wall ends and where an informal path currently crosses it. Bracken litter should be cleared from the buddle edges and bases and the condition of the masonry inspected. Where required, this should be repointed in lime mortar and lost masonry reinstated where fallen stones can be identified. The concrete faced buddle centre at the east end of the part of the site which apparently dates to the last phase of working on the site has become so badly damaged that is probably beyond repair.

Within this part of the site, an annual or twice-annual cutting regime will be required to maintain an appropriate level of access around the mill and associated buildings.

The walled area

Much of the walling here is in very poor condition and is likely to collapse in the relatively near future. Nevertheless, it is a feature of some interest, and, if a path route

is created down this side of the stream and vegetation management is undertaken to reduce the present scrub cover, it could be made readily accessible. Following the removal of its covering ivy, it has become clearly visible from the road on the northern side of the Cot Stream.

It is suggested that the National Trust consider this site as a potential volunteer repair project entailing taking down and rebuilding unstable stretches of the walling. The levelled area to its rear, if kept clear of brambles and gorse, would provide a pleasant glade amongst the trees in this area. Given the high density of the saplings in this general area, thought should be given to some selective thinning.

The adit

The adit is flooded and partially blocked with rubbish. Given its low roof, it is unlikely to prove of interest to mine explorers and given its flooded nature would not attract casual investigation; it does not, therefore, require gating. The removal of some of the more obvious rubbish within the flooded lobby adjacent to the portal would greatly improve the overall appearance of this part of the site.

The leats

The Cot Valley leat system is one of the most complex and interesting anywhere in West Cornwall and deserves to be better interpreted. Rubbish should be removed from the bed and banks of the Wheal Rose Stamps leat within the section near the cottages, and there would be a clear advantage to the interpretation of the site were the earthy material which has been dumped into it in this area also removed, given that it completely obscures the route of the leat close to the stamping mill. The material which has been built up on the platformed area above the stamps chute to provide a car parking space should also be removed. The small clapper bridge immediately above the stamps chute should be inspected and, if appropriate, repaired and the rubbish dumped under it disposed of.

The smaller leat just to the north of the Wheal Rose Stamps leat does not require any works other than the periodic clearance of some brambles which have grown up over it, and which currently obscure its course.

The middle leat, fed by the tailrace of the Wheal Rose Stamps wheel, is in good condition, and as a trial, its banks were strimmed by the St. Just NT Ranger to establish whether it had the potential to form a path which could link Wheal Rose stamps to the public footpath running from Cot Lodge down to Pen Nanven. It was concluded that if a short flight of timber-revetted steps were constructed at its western end, this would be a practicable proposal.

The lower leat, fed by a combination of the water from the tailrace of the Wheal Rose Stamps water wheel and a tapping from the Cot Stream adjacent to the north western corner of the buddle yard would also benefit from being made accessible. Not only would vegetation clearance along its length make an important element of the archaeology of the valley once again visible, but also provide a safe means of accessing the large wheelpit at Bosorne Stamps. Clearance of the leat beyond this point could also potentially provide another level walking route linking back to the public footpath leading down to Pen Nanven.

The first section of the leat which carried the water from the tail of the waterwheel just to the west of Wheal Rose Stamps is particularly boggy and difficult to walk without wellington boots. This short section would benefit from the reinstatement of the drainage arrangements at its downslope end and the clearance of at least some of the infilling mud, enabling access from Wheal Rose Stamps to Little Stamps (and further if required). A short section of boardwalk could be constructed here if required.

Little Stamps

This probably early site remains poorly understood and apparently almost wholly undocumented. Conservation of its remains is probably not required, though periodic

vegetation clearance would ensure that it remains visible. The site has considerable potential for further investigation by carefully targeted evaluative excavation. In particular, investigation of the relationship between these structures, the adjacent (and possibly contemporary) settling tanks and the leat running past the site could throw light on the development and after-uses of the site. Excavation of the material apparently covering granite flooring within its interior might also provide considerably more information about the function of the eastern building – this would, however require the excavation of a drainage channel from the building out towards the stream given the exceptionally waterlogged nature of the material infilling it and its low-lying floor. Sampling and analysis of the silts and slimes forming the infill would also give some indications of their tin content, and could be compared with the material infilling the adjacent tanks to the east and the channels which feed them. Stabilisation of the remains of the rear face of the wheelpit would be advantageous, though would be difficult to achieve.

Access

At present, many of the stamping mills and associated features within the Cot Valley are not readily accessible. The site of Lower Carran Stamps is now a private house and outbuildings (Rosewell), Jasper Thomas' Stamps near the bridge can be accessed on foot, though the access point from the nearby track is frequently used as a parking space by the occupant of one of the local houses; there is currently no ready access to Wheal Rose Stamps, Little Stamps and Bosorne Stamps, though the remains of the 20th century Bellan Mill adjoin a popular car parking area.

There are several potential ways in which improved access to some of these sites could be achieved. A simple footbridge across the Cot Stream from the road down the valley at a point near Wheal Rose Stamps has been suggested, but might be objected to by the Environment Agency as likely to cause a flood risk.

The access down the steep bank behind the stamps from the Meadowside and Cot Lodge parking areas adjacent to their access track was originally by means of a flight of stone steps (pers. comm. Jean Chymura), but these have either been removed or obscured by the accumulation of many years of garden rubbish and demolition rubble dumping. This access could be reinstated, though the bank is steep and a substantial amount of rubbish and other dumped material would need to be removed, some landscaping done and steps and a handrail installed down the bank. Formalisation of an access point here would probably help to reinforce the importance of the dressing floors to neighbours and might result in the ending of the use of this site as a point for the disposal of garden waste.

As a further alternative, an access route could be created along the northern side of the Cot Stream, generally following the course of the leat from the reservoir pond near the bridge. This would need to incorporate some stretches of boardwalk through boggier areas, but would provide an off-road route to Wheal Rose Stamps, Little Stamps and (if desired) Bosorne Stamps, opening up a number of sites to public access, as well as some attractive parts of the valley floor. The trial cutting of a route following the upper leat course between Wheal Rose Stamps and Bosorne Stamps by the NT Ranger (Bob Robinson) has demonstrated the feasibility of creating an access route of this type between these two sites, though it would also be possible to continue this on down the valley, again following the lower leat course beyond Bosorne Stamps, rejoining the public footpath between Cot Lodge and Pen Nanven a little way beyond this site.

Interpretation

The sites in the lower Cot Valley are currently uninterpreted. It is considered that fixed interpretation would be inappropriate in this landscape of ruins and wild nature, and other means should be considered to assist visitors in understanding what remains of this complex series of sites. In some areas of Cornwall, downloadable gps-linked guides are currently being trialled, utilising smart phone capability, but the mobile phone

signal in the lower Cot Valley currently varies between very poor to completely absent, probably ruling out this approach.

The creation of a downloadable guide to the archaeology of the Cot Valley (much of which is owned and managed by the National Trust) should be considered – this could explain the crucial importance of water power in the operation of the mines of the St. Just district, the water-power stamping mills and other structures strung out down the valley, including the recently-consolidated Jasper Thomas' Stamps, Wheal Rose Stamps, Bellan Mill, the leats and outcrop workings and mine workings on Hermon Cliff and Ballowall Common, together with the raised beach and head deposit at Porth Nanven. It could also set out preferred access routes in and surrounding the Cot Valley (avoiding the many open mineshafts, steep drops and crumbling cliff edges which abound there), and also provide a guide to the ecology of the valley.

Japanese knotweed and other problem vegetation

The Wheal Rose Stamps site and its surroundings occupy one of the areas of the Cot Valley which, despite many years of attention from the National Trust, still remains infested with Japanese knotweed. Much of this is to be found in damper areas adjacent to the stream, though it is also found near the buddle yard, on the site of the former reservoir, in the levelled yard to the east, in the reservoir ponds to the west of Wheal Rose Stamps and in the Little Stamps site. This is likely to continue to be treated by stem injection with Glyphosate on an annual basis by the National Trust.

Other potential vegetation-related problems include dense annual bracken growth over the drier areas of the site, obscuring much of its detail, seedling establishment in the core area of the Wheal Rose Stamps site which has resulted in the establishment of semi-mature sycamore trees which are dislodging elements of the masonry and impeding access to and through the site, as well as the establishment of several large Buddleias between the eastern part of the site and the nearby stream, obscuring areas of the site.

Given the very rapid vegetation growth noted across the site between late February and early April in 2012, it is clear that the site will require a maintenance cut in the Spring, possibly followed by a further cut in early Summer.

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9.3 Websites

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

10 Project archive

The HE project number is **2012017**

The project's documentary, photographic and drawn archive is currently housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY, but will be transferred to the National Trust for long term curation. 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 R:\Historic Environment (CAD)\CAD Archive\Sites C\Cot Valley stamping mill
3. Black and white photographs will be lodged with the National Trust archive.
4. Digital photographs stored in the directory: R:\Historic Environment (Images)\SITES.A-D\Cot valley stamping mill
5. English Heritage/ADS OASIS online reference: cornwall2-128652
6. This report text is held in digital form as: ..\HE Projects\Sites\Sites C\Cot Mill recording\Report\Wheal Rose Stamps dressing floors recording report.doc

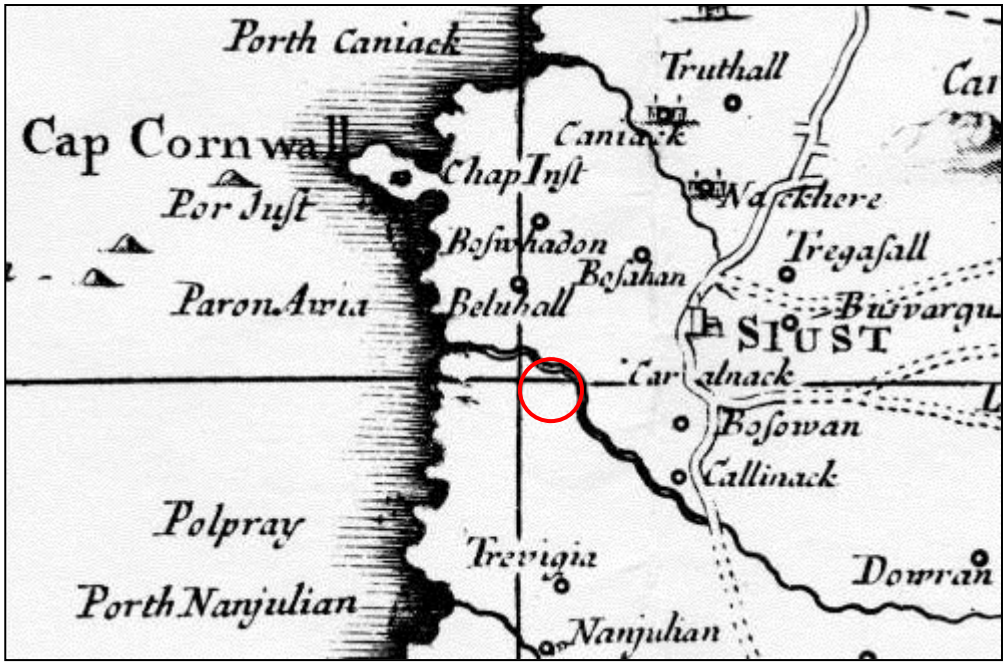

Fig 3. An extract from Joel Gascoyne's 1699 map of Cornwall, showing the location of Wheal Rose Stamps.

Fig 4. Norden's 1724 map of Cornwall, showing the location of Wheal Rose Stamps. The crosses surrounded by dots were Norden's symbol for active mines.

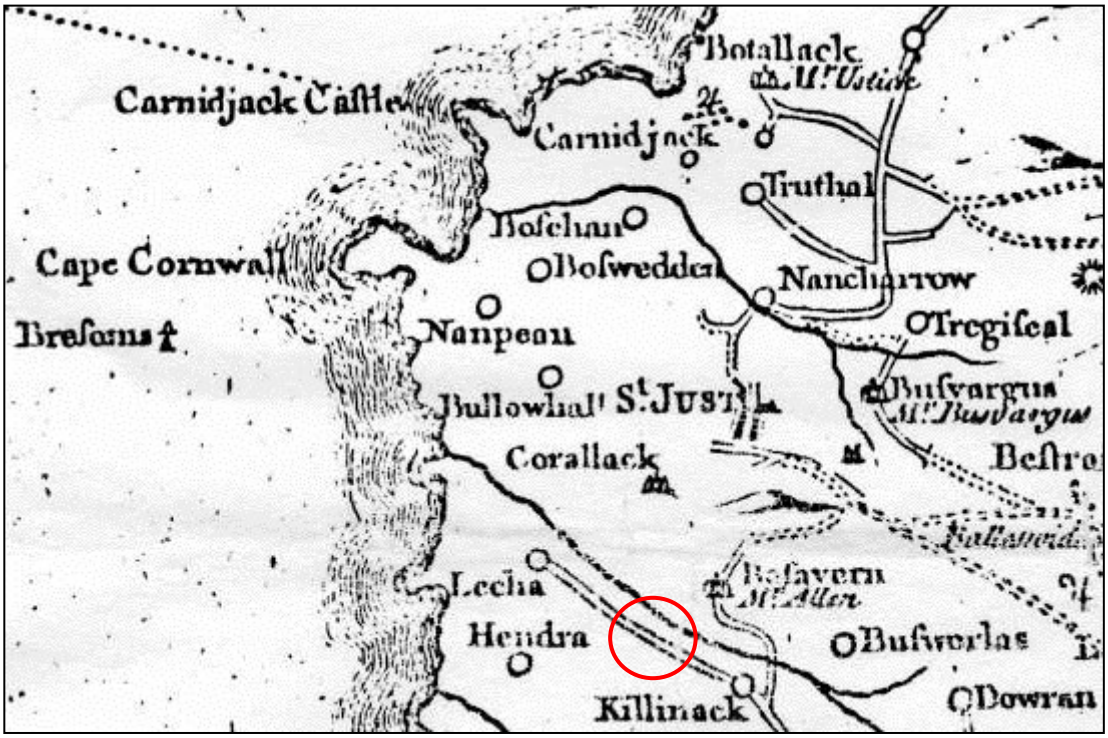

Fig 5. An extract from Martyn's 1742 map of Cornwall, showing the location of Wheal Rose Stamps.

Fig 6. An extract from the surveyor's drawing for the 1809 Ordnance Survey 1st Edition 1" to the mile mapping, which omitted any mine buildings adjacent to the Cot Stream. Active mines were shown to the north of the Cot Valley (as blocks of nine dots), but not to its south on this map.

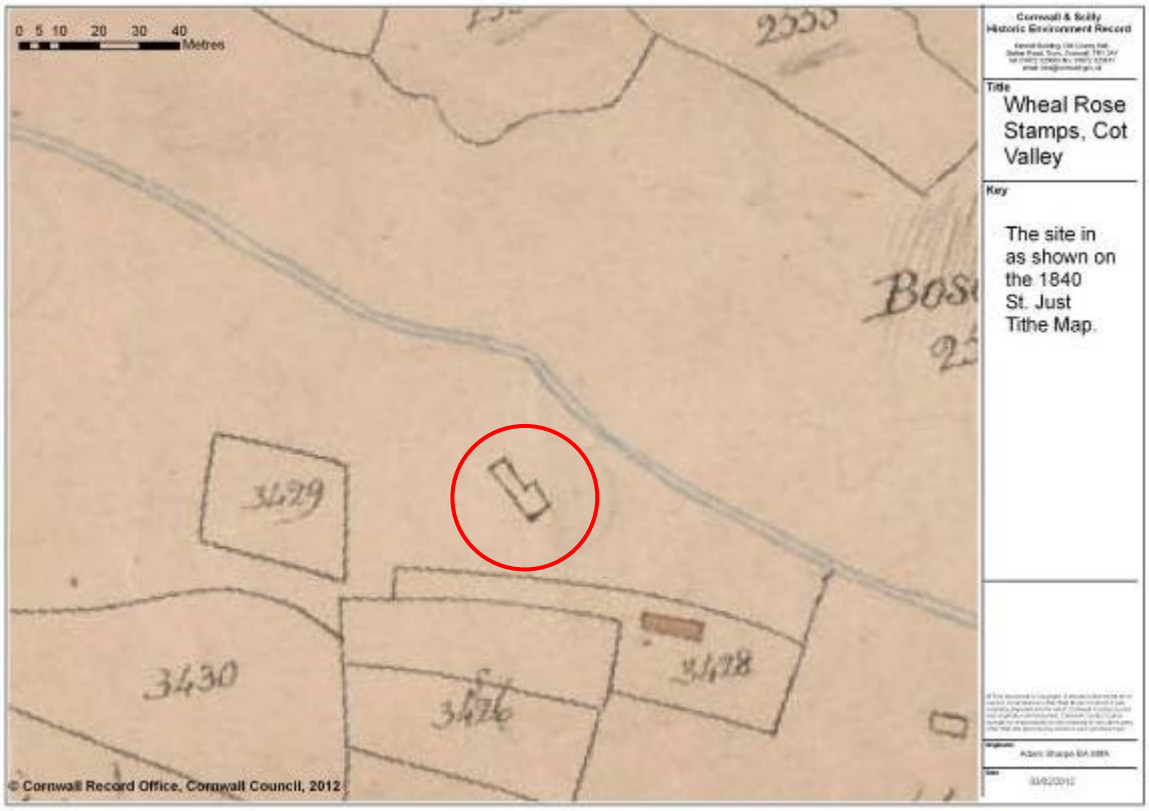

Fig 7. An extract from the southern section of the 1840 St. Just Tithe Map showing Wheal Rose Stamps. The mill complex layout mirrors that on site today.

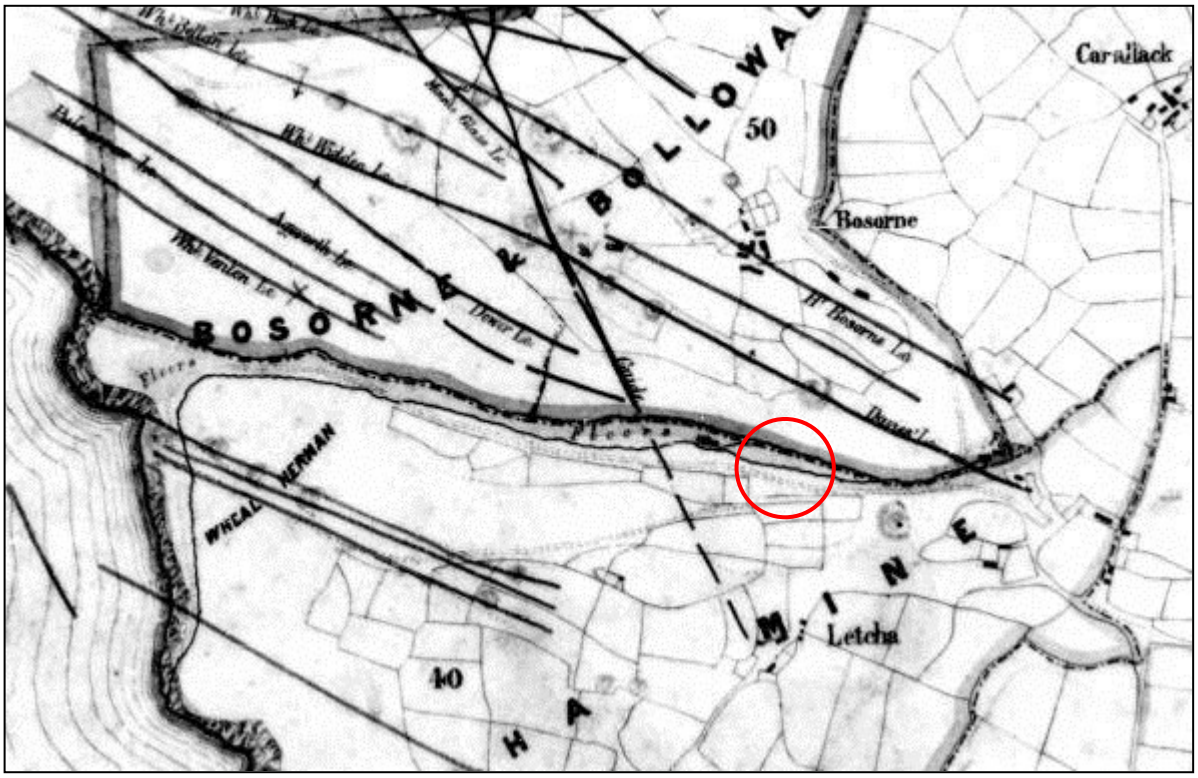

Fig 8. An extract from Symons' 1857 map of the St. Just Mining District. Wheal Rose Stamps may be the 'Floors' shown on this map slightly downstream from their actual site.

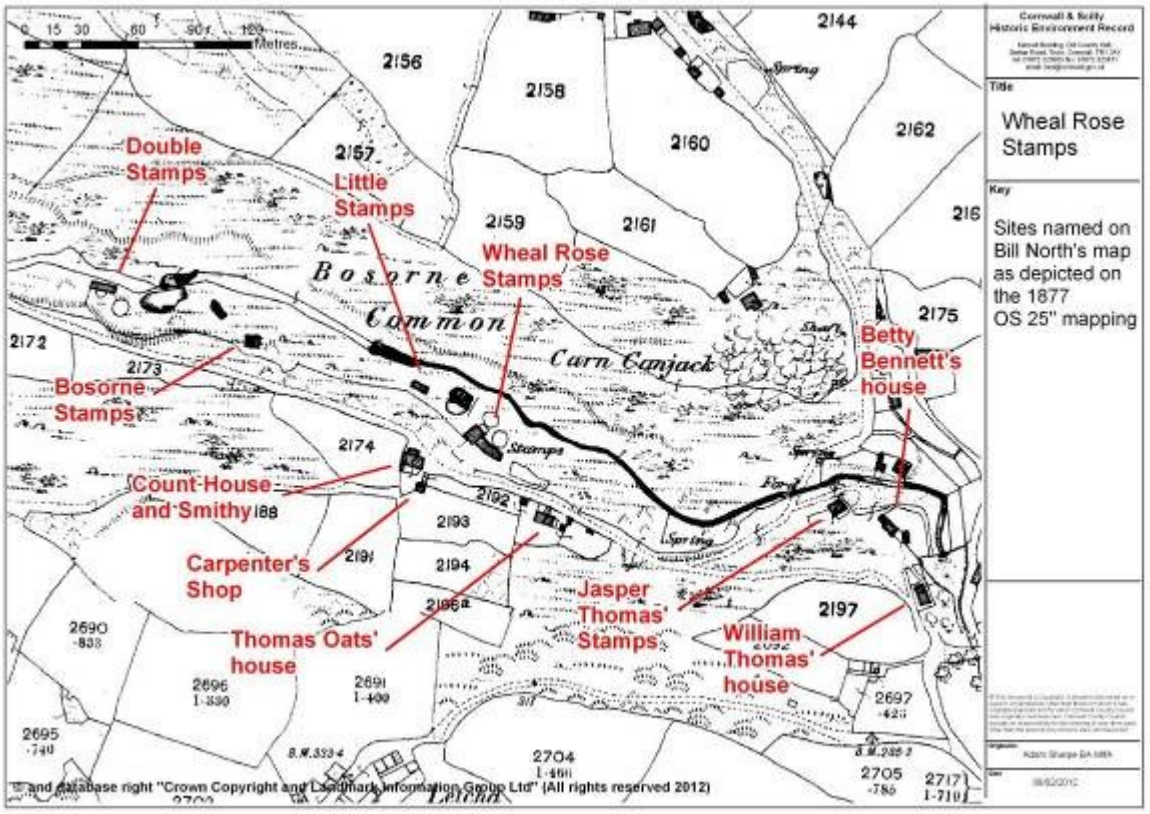

Fig 9. Information on the 1830 map held by Bill North of Pendeen overlain on the 1877 1st Edition of the OS 25" mapping. Lower Carran Stamps were on the northern side of the stream from Betty Bennett's house, but were not named on this plan.

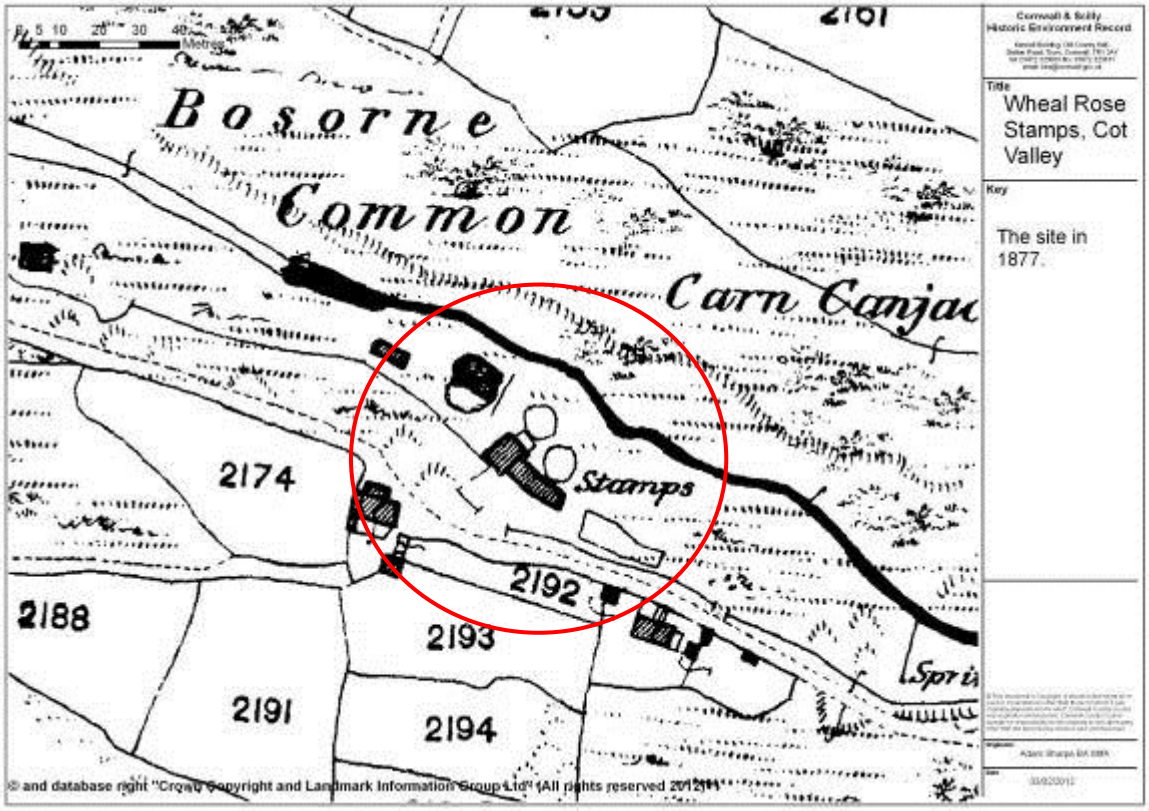

Fig 10. An extract from the circa 1877 1st Edition OS 25" to a mile mapping showing the layout of Wheal Rose Stamps. Little Stamps are likely to be represented by the rectangular feature to their west which is intersected by the red circle.

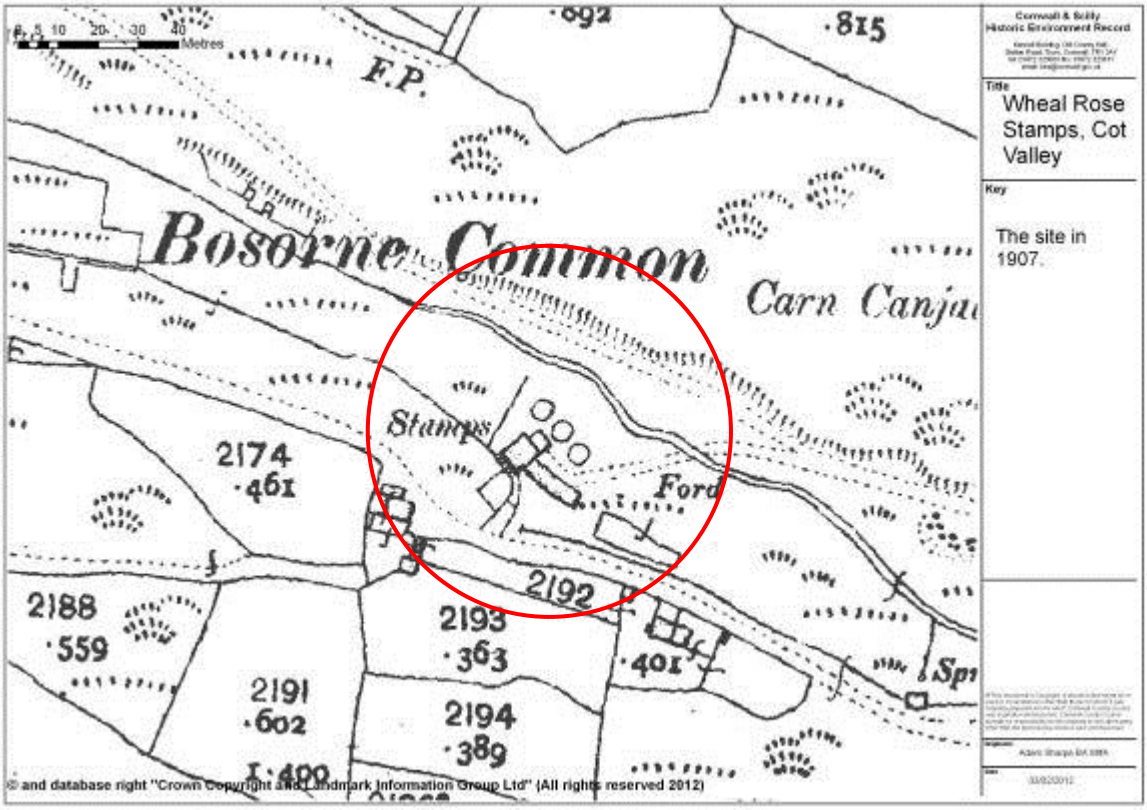

Fig 11. An extract from the circa 1907 2nd Edition of the OS 25" to a mile mapping. Some changes to the layout of the site had taken place since 1877 and a new track to the buddle floor was shown. Little Stamps were not shown.

Fig 12. Modern OS mapping showing features at Wheal Rose Stamps. The mapping includes several significant errors and omissions.

Fig 13. A 2005 Cornwall County Council aerial photograph of the Wheal Rose Stamps site, showing the tree cover which has developed over the site.

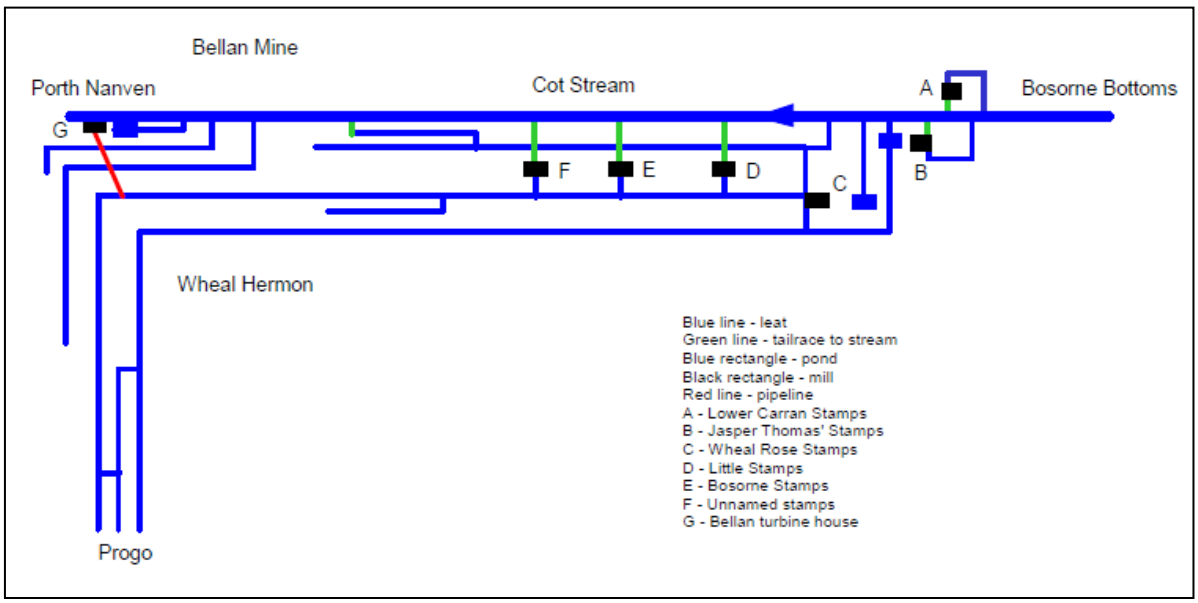

Fig 14. Schematic plan of the principal leats and mills in the Cot Valley and on Letcha Cliff.

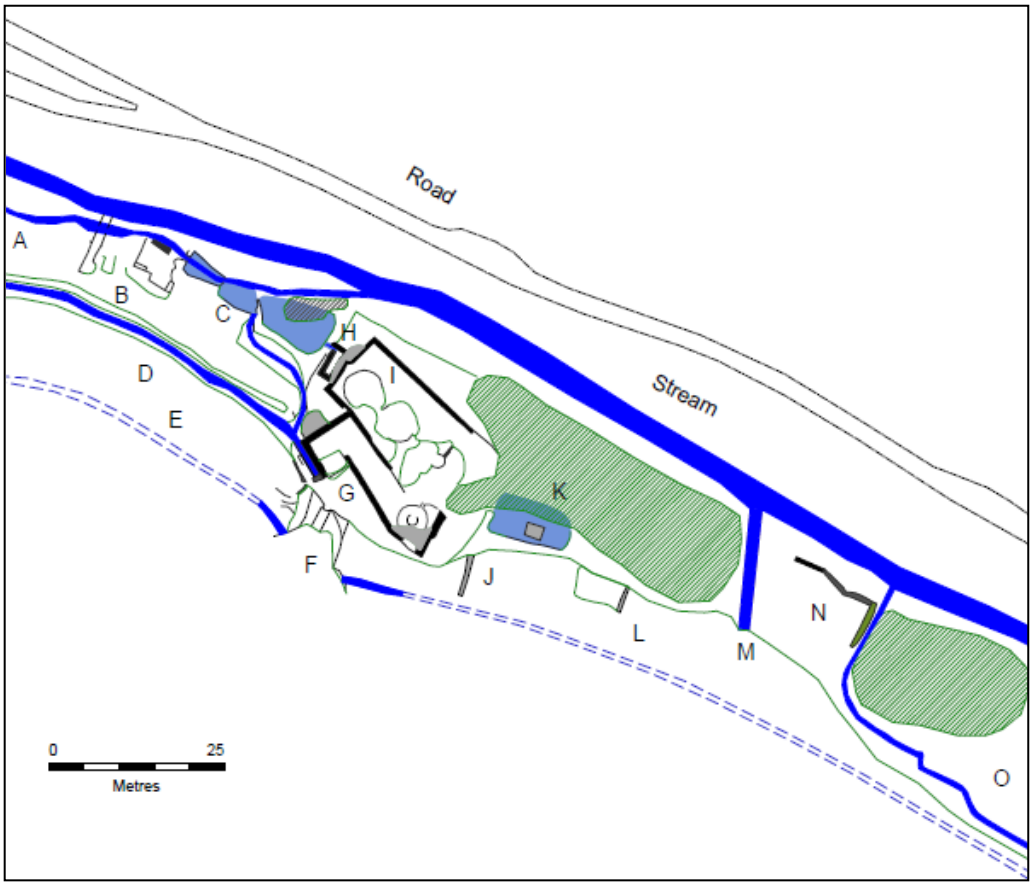

Fig 15. Principal components of the site. A. Leat, B. Little Stamps, C. Ponds, D. Leat, E. Leat, F. Ore chute, G. Wheal Rose Stamps, H. Wheelpit, I. Buddle yard, J. Wall, K. Pond, L. Enclosure, M. Adit, N. Yard, O. Leat.

Fig 16. Wheal Rose stamps from the west prior to the removal of its ivy cover.

Fig 17. Looking down onto the spalling floor behind and above the buddle building prior to the vegetation clearance work.

Fig 18. The Little Stamps site (centre of view) prior to vegetation clearance.

Fig 19. Little Stamps following vegetation clearance.

Fig 20. The building forming the eastern part of the Little Stamps site, showing the mixture of boulders and coursed cobbling defining its walls.

Fig 21. Another view of the eastern part of the Little Stamps site, showing its general character.

Fig 22. One of the former reservoir ponds just to the east of the Little Stamps site in mid-April 2012. Note the vigorous Japanese knotweed growth in this part of the valley.

Fig 23. The yard wall at the eastern end of the survey area. Its poor state is clearly evident in this view.

Fig 24. The adit portal and lobby near the eastern end of the site, together with an example of the rubbish which litters most of the site.

Fig 25. The western end of the bridge over the Wheal Rose Stamps top leat, showing the trees whose roots are beginning to damage this feature.

Fig 26. The western elevation of the mill following the removal of its cloaking ivy, also showing the wheelpit to its south.

Fig 27. Looking west through the remains of the buddle building towards the stamping mill.

Fig 28. A late concrete faced buddle in the eastern part of the buddle building. Tree roots threaten to break up this feature.

Fig 29. The eastern end of the southern wall of the buddle building, showing the earth foundation of this section. Root growth associated with the tree in the upper left of this view has already caused the collapse of a section of walling.

Fig 30. All that remains of the eastern wall of the buddle building.

Fig 31. Looking west across the spalling floor (left) and the buddle building (right) towards the stamping mill.

Fig 32. Looking north east across the spalling floor towards the wall separating it from the buddle building. Note the two stones projecting from this face.

Fig 33. The stone-faced ore chute and its retaining walls at the rear of the spalling floor.

Fig 34. The stamping mill from the north-west following vegetation clearance.

Fig 35. The western wall of the stamping mill. The original northern corner of the mil is clearly visible as the vertical line of quoins in the lower half of the wall just to the left of centre in this view.

Fig 36. The wheelpit wall of the stamping mill. The axle opening is clearly visible. The stamps would have been at right angles to the wall and to the left of the opening. Note the difference in heights of the wheelpit wall and those to its left and right.

Fig 38. The junction between the stamping mill (right) and the buddle building (left), showing that the stamping mill predates the buddle buildina.

Fig 37. The poor condition of the eastern end of the southern wall of the stamping mill.

Fig 39. The buddle yard to the north of the stamping mill. The buddle wheelpit is sited on its western end (left of centre in this view).

Fig 40. The remains of the westernmost of the three buddles to the north of the stamping mill.

Fig 41. Stone loss from the southern face of the stamps wheelpit wall due to a lost lintel over the axle opening will need to be made good.

Fig 42. A part of the course of the possibly early lower leat to the east of Wheal Rose Stamps. The upper leat which fed the stamps is immediately upslope, and, with sections of other leat to the west, could potentially form the basis for a path network down through the valley.

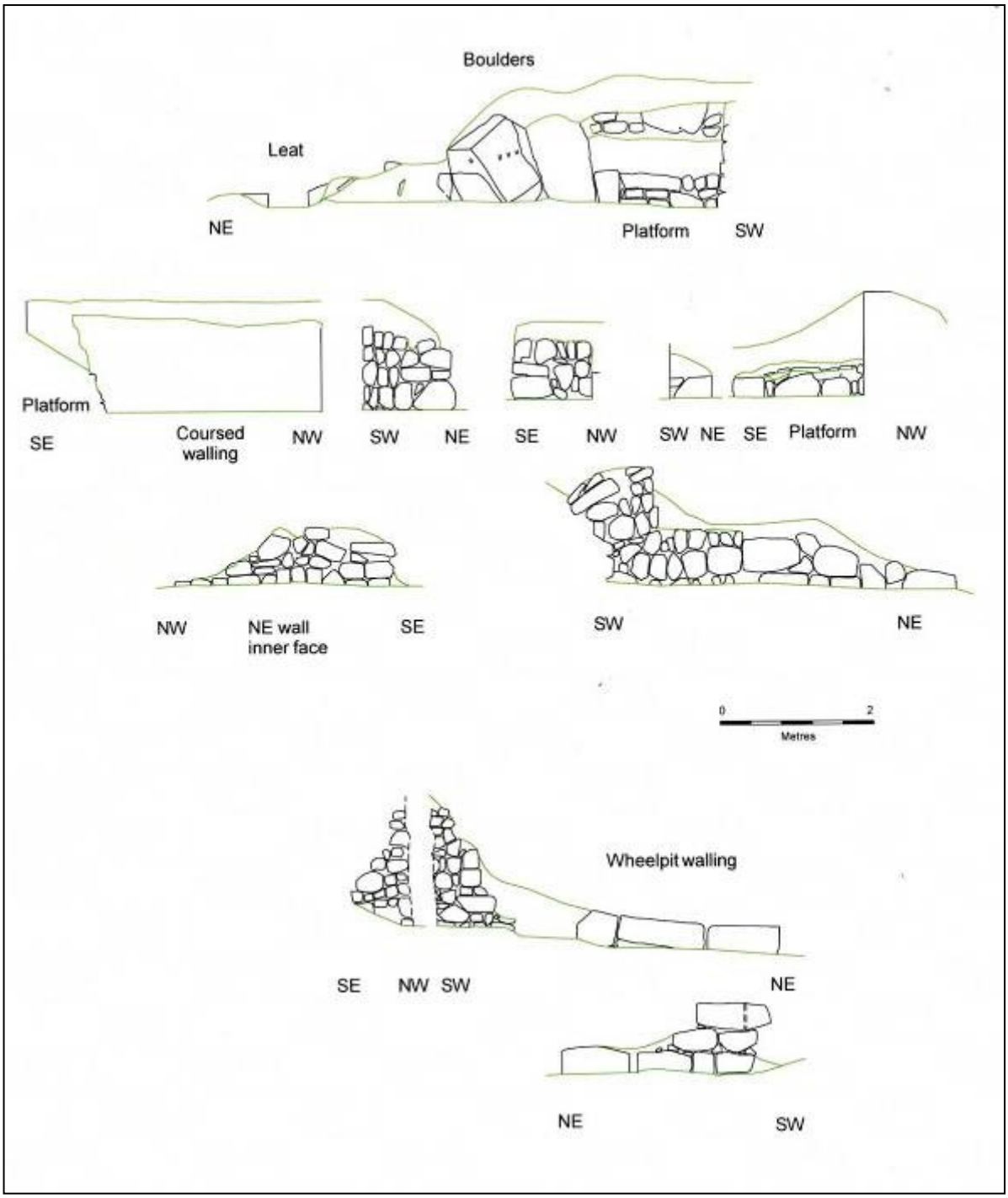

Fig 43. Internal elevations of the Little Stamps site walls and the remains of its wheelpit. Fig 14 includes the plan of this site component.

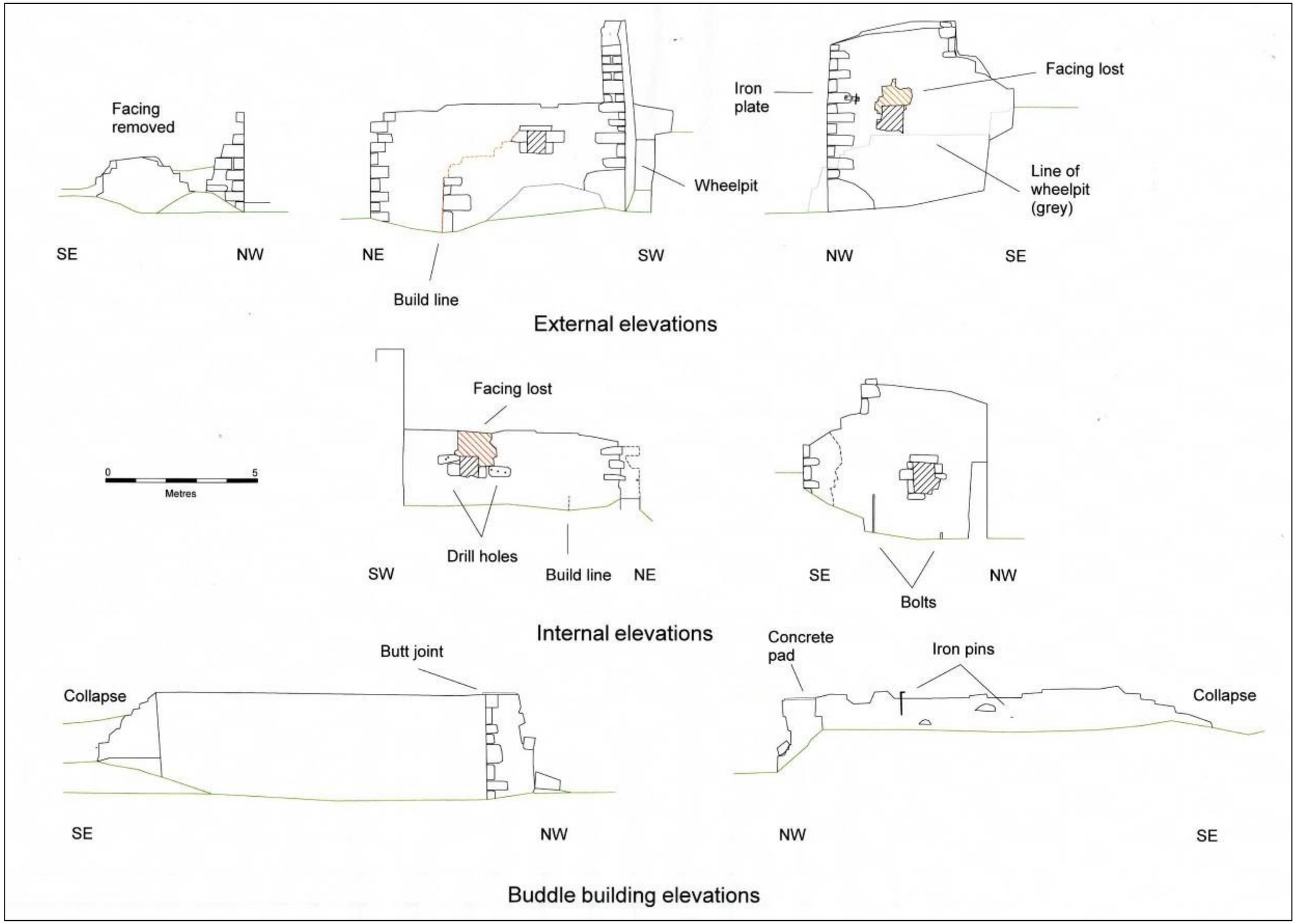

Fig 44. External and internal elevations of the Wheal Rose stamping mill and attached buddle building.