SMITHY BUILDING, ABOVE HUNGRY HUSHES, MOULDS SIDE, ARKENGARTHDALE, NORTH YORKSHIRE

ARCHAEOLOGICAL SURVEY

Ed Dennison Archaeological Services Ltd
18 Springdale Way
Beverley
East Yorkshire
HU17 8NU

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Author: Shaun Richardson & Ed Dennison

Ed Dennison Archaeological Services Ltd
18 Springdale Way
Beverley
East Yorkshire
HU17 8NU

On behalf of

Yorkshire Dales National Park Authority
Yoredale
Bainbridge
Leyburn
North Yorkshire DL8 3EL

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EXECUTIVE SUMMARY

In July 2014, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Robert White, Senior Historic Environment Officer of the Yorkshire Dales National Park Authority (YDNPA), to undertake an archaeological survey of the remains of a smithy building lying above the Hungry Hushes complex on Moulds Side, Arkengarthdale, North Yorkshire (NGR NY 98764 02784). The work was required to inform consolidation work following the recent collapse of much of the west gable. The project was funded by the YDNPA and English Heritage through the Yorkshire Dales Industrial Monuments Management Scheme.

The ruined smithy is located in an isolated and elevated position on Moulds Side, on the southern slope of Arkengarthdale, within an extensive area of former mining remains (see figure 1). It is a simple single storey building, with maximum external dimensions of 7.30m east-west 4.32m north-south; the partially collapsing external walls vary in width between 0.45m to 0.60m and it was formerly provided with either a pitched or single-pitch corrugated iron roof. Internally, the forge was placed at the north-west corner, with the bellows to the immediate south, and there was a small stove or oven in the south-east corner. There are a number of initials and dates carved into the stone walls, which do not appear to have been previously recorded.

In contrast to previous suggestions, the smithy appears to have been purpose-built to serve the nearby 20th century chert quarries. The inscription 'SEP 27 1934' carved over three stones on the internal south wall may well provide a date of construction, which may have coincided with the driving of the adjacent chert levels. It is also possible that the smithy was built using materials salvaged from an adjacent structure named as 'Old Walls' on the 1857 Ordnance Survey map, perhaps a sheepfold. Some of the graffiti relates to Ramsay Moralee Hutchinson, who worked at the smithy between 1940 and 1950. The ruins were substantially rebuilt after 1990, although it not known by whom or for what purpose.

1 INTRODUCTION

Reasons and Circumstances of the Project

1.1 In July 2014, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Robert White, Senior Historic Environment Officer of the Yorkshire Dales National Park Authority (YDNPA), to undertake an archaeological survey of the remains of a smithy building lying above the Hungry Hushes complex on Moulds Side, Arkengarthdale, North Yorkshire (NGR NY 98764 02784). The structure is not Listed as a Building of Special Historic or Architectural Interest, but it does lie within the boundary of the extensive Scheduled Monument which encompasses the mining remains on Moulds Side (National Heritage List for England entry 1015854 - Lead mines and smelt mills at Moulds Side west of Langthwaite). It is also recorded on the YDNPA Historic Environment Record, as part of a general entry for lead mines and smelt mills on Moulds Side (MYD 43036).

1.2 The work was required to inform consolidation work following the recent collapse of much of the west gable. The extent of the project was defined by discussions between Mr Robert White of the YDNPA and EDAS, and the project was funded by the YDNPA and English Heritage through the Yorkshire Dales Industrial Monuments Management Scheme.

Site Location and Description

1.3 The smithy building is located in an isolated and elevated position on Moulds Side, on the southern slope of Arkengarthdale, within an extensive area of former mining remains (see figure 1). It lies above the Hungry Hushes complex, specifically at the north-eastern limit of Lilly Jock's Hush, on the edge of a very steep slope (see figure 2). The whole of this area is open access land, as designated by the Countryside and Rights of Way Act 2000 (CROW).

1.4 There are no designated footpaths close to the smithy, but several unofficial paths, many having their origins in routes used by the Scott Trial, have developed through this area, usually along the most easily negotiable routes through the mining remains. One of these passes very close to the south side of the smithy, and the building is clearly visible from it. However, the area is not heavily visited, and there was very little modern refuse within the building at the time of the survey; nevertheless, there clearly are some visitors, as a loose piece of ironwork in the vicinity regularly changes position. The rubble-built smithy was roofless at the time of the survey, but in reasonable condition, although much of this stems from post-1990 rebuilding. The building is surrounded by short grass, but there was no encroachment from any other kind of vegetation.

2 SURVEY METHODOLOGY

2.1 The extent of the project was defined by discussions between Mr Robert White of the YDNPA and EDAS. The structure was visited and surveyed on 17th July 2014.

2.2 A ground floor plan was made at a scale of 1:20, with all measurements being taken using traditional hand-held recording equipment. The resulting drawing shows all significant detail such as openings (blocked or unblocked), inserted doorways, fittings, joist sockets etc. The drawing was produced according to the guidelines established by English Heritage (2006, 8-10 & 19-21). Sufficient notes were also taken in the field to prepare a detailed written description.

2.3 The drawn record was supplemented by a colour digital photographic record, using a camera with 10 mega-pixel resolution. Some of these photographs were then marked up to the show the extent of recent re-building, using another photograph taken in August 1990 as a source (see below). English Heritage photographic guidelines were followed (English Heritage 2006, 10-12) and each photograph was normally provided with a scale. All photographs were clearly numbered and labelled with the subject, orientation, date taken and photographer's name, and were cross-referenced to digital files etc.

2.4 Liaison with those also undertaking historical research in the area was carried out. Both Les Tyson and Kay Jackson supplied oral information on the graffiti noted within the smithy, and Kay Jackson consulted Rowena Hutchinson, the widow of Ramsay Hutchinson and now proprietor of the *Red Lion* public house at Langthwaite, on the same matter.

2.5 An EDAS archive archaeological survey report has been produced, based on the results of the information obtained during the field work. The report has been illustrated by reduced versions of the survey drawings and a selection of photographic plates. A properly ordered and indexed project archive (paper, magnetic and plastic media) was deposited with the YDNPA at the end of the project.

3 HISTORICAL BACKGROUND

3.1 No original documentary research was done as part of the archaeological survey, as much work had already been undertaken both on the history of mining in the wider area (Tyson 1995) and more specifically on the chert mining and quarrying in the immediate vicinity (Jackson 2010; Eastmead 2014). In terms of the former, only the briefest summary of that information most relevant to the setting of the smithy is given below.

3.2 The area around the smithy has a long and complex history of working. According to Tyson (1995, 39-42), by the mid 18th century, several hushes were being worked in the area of Moulds Side to the west of the smithy. One of these was known as 'Lilly Jock's Hush' and it appears on a plan of 1787, along with 'Bird's Hush' to the north-east; Lilly Jock's Hush is depicted as two curving parallel lines, diverging away from Bird's Hush. The name 'Lilly Jock's' was also once applied to a drovers' inn close to Eskeleth and it is still named as such on Clarkson's 1836 *Map of the Tan Hill to Reeth Turnpike* (Wright 1985, 191), although the origin of the name is not clear; it is possibly represented by Plantation House on the east side of Stang Lane near the junction with the Arkengarthdale Road. In contrast to many of the other hushes in the vicinity, the north-eastern part of Lilly Jock's Hush as indicated on the 1787 plan is not well defined. Eastmead (2014, 14 & 23-24) suggests that the east end of what is generally known as the Hungry Hush formed the upper part of Lilly Jock's Hush, with the north-eastern end curving around into the area west of the smithy.

3.3 Tyson (1995, 93-94) describes the smithy as being "left over from lead mining", but there appears to be little evidence to support this view. If the smithy had been built in association with lead mining in the area, then it would surely date to the second half of the 19th century at the latest. However it is not shown on the Ordnance Survey 1857 6" to 1 mile map, or either the 1893 or 1912 editions of the Ordnance Survey 25" to 1 mile maps (see figure 3); the 1857 map does show a small two celled roofless structure, possibly a sheepfold, to the east of where the smithy

would be built, adjacent to a reservoir, named as 'Old Walls'. If the map evidence is reliable, then it seems that smithy was not built until after lead mining had ceased, and that it is far more likely to have been erected as part of the 20th century chert working in the area.

3.4 The precise date that chert working began in Arkengarthdale is uncertain. It is sometimes alleged that chert mining started on Fremington Edge in 1895, but the source of this information is unclear. However, the 1901 census returns show three chert quarrymen living in Reeth and four at Booze in Arkengarthdale, with none in 1891 (Jackson 2010, 126-127). In the 1911 census, nine chert quarrymen are listed as living in Arkengarthdale, as well as three 'quarrymen', two 'stone quarrymen' and one 'limestone quarry man' (*http://www.dalesgenealogy.com/census/arkendale11.html*); three members of the Hutchinson family, living at the Old School House, are also described as 'quarry man delver, pottery manufacture and worker'. The chert was used as part of the crushing process in mills, principally those associated with the north Staffordshire pottery industry, which supplied crushed flint used in the manufacture of white pottery and porcelain (Tyson 1995, 88). In 1905, John Shatwell Wagstaff, a potters' merchant from Stoke on Trent, arrived in Reeth. He appears to have been associated with the Boulder Flint Company, based in Stoke on Trent, who took over the Fremington Edge chert works, and he ran the Fremington operation until his death in 1916. Before this date, he is alleged to have taken his son, Jack Wagstaff, secretly into Arkengarthdale to show him possible future sources of chert. Jack was called up for active service in 1916 but when he returned in 1919, he became manager of the Boulder Flint Company, a position he held until 1922 (Jackson 2010, 127-128 & 134).

3.5 In 1922, as a result of a major dispute at Fremington, Jack Wagstaff and several of the other most experienced chert workers broke with the Boulder Flint Company and set up their own operation in Arkengarthdale. Initially, Wagstaff took out a lease from the C. B. Estates of Moulds Low Level, working chert in the former lead level until 1932 (Tyson 1995, 88; Jackson 2010, 127-128 & 135). In 1932, the Crow Chert Beds, high on Moulds Side, began to be worked, and these workings were to become known as the Hungry Chert Quarries. Tyson (1995, 88) states that chert was first quarried at its exposure above Stodart's Hush, but Eastmead (2014, 17 & 23-24) suggests that there is no evidence for this nor for extraction from Hungry Hush, and that the main opencasting area for chert was in fact in Lilly Jock's Hush, downslope and to the north-west of the smithy building. At a later (but uncertain) date, two levels were driven into the hillside close to the south-east of the smithy to work the chert from the Black Beds, cutting through the redundant flue of the New Mill, with a third level apparently added later (Tyson 1995, 88; Eastmead 2014, 10). There were 16 men employed in the chert quarries in Arkengarthdale in 1934 (Pontefract & Hartley 1934, 150).

3.6 A smithy was required close to the chert workings in order to make and sharpen the tools used to extract and dress the chert; there was, for example, a smithy at the Fremington Edge Chert Quarries by 1910 (Jackson 2010, 128). However, it is not known exactly when the smithy at the Hungry Chert Quarries was built. Jackson (2010, 136) suggests that some of the buildings at the redundant New Mill complex were used as a smithy and offices, but this would not have been very convenient for the workings. The smithy was definitely present by 1940 (and perhaps as early as 1934 on the evidence of internal graffiti - see below), when Ramsay Hutchinson came to work at the chert quarries. He was set to work with the blacksmith, Thomas Hird, at the smithy, and remembered that it had a corrugated iron roof and a window which provided a delightful view across the

dale. The building also served as a canteen where men could get warm while eating their food, and a small red-brick red oven was made in one of the corners. Hutchinson was initially on a flat wage of 16 shillings per week, which rose to 18 shillings in 1941. In 1942, Thomas Hird was called up for active service and Hutchinson was made blacksmith in his place. When he left in 1950, the wages had risen to £5 10s for a 44 hour week (Tyson 1995, 93-94). The men had to buy their own bar steel for their tools, with Hutchinson shaping, sharpening and tempering the bars, wedges and feathers to the necessary hardness (Tyson 1995, 94); quarry smithing was a specialist branch of the craft, the temper of the tools having to be adapted to the rock that was being worked (Hartley 1939, 124).

3.7 The Hungry Chert Quarries closed in 1950. In August 1950, Johnson Brothers of Stoke on Trent, the main client for the Arkengarthdale chert, suddenly stated that they would no longer need a supply of the material; ironically, in April-June of the same year in an article in *Yorkshire Life* had noted of the chert quarrying that "as long as it can be supplied the Potteries will use it" (Wright 1950, 89). Although various reasons for this decision were put forward locally, the most convincing explanation is that ball-mills replaced the old chert grinding pans in the Potteries, and so the chert was no longer required (Jackson 2010, 137-38). After quarrying ceased, the three chert levels either collapsed or more likely had their entrances demolished for safety reasons (Eastmead 2014, 32). The various fixtures and fittings associated with the workings were salvaged during the early 1950s, and this has provided the only known photograph of the smithy, just visible on the horizon in a view of the incline formerly serving the Hungry Chert Quarries being dismantled (reproduced in Eastmead 2014, 62 & figure 96). More recently, the smithy was photographed by Richard Lamb on 18th August 1990 (see figure 4), but it has subsequently been extensively rebuilt.

4 ARCHITECTURAL DESCRIPTION

Introduction

4.1 A detailed description of the smithy building is given below, based on the records made in the field. It is described in a logical sequence. The setting, plan form, structure and architectural detailing are described first, followed by an account of the external elevations and a circulation description of the interior. Reference should also be made to the surveyed ground plan, and the photographic record which appears as Appendix 1; photographs are referenced in the following text in italics with square brackets, the numbers before the stroke representing the film number and the number after indicating the shot e.g. [*1/32*]. Throughout the text, reference is made to Richard Lamb's 1990 photograph (see figure 4), which has been used where possible to gauge the extent of modern rebuilding (see figure 6).

4.2 The smithy is actually placed on a shallow north-west/south-east alignment but, for ease of description, the long axis is considered to be aligned east-west. Where possible, specific architectural terms used in the text are as defined by Curl (1977) with smithing terms as defined by Rhodes (2004). Finally, in the following text, 'modern' is used to denote features or phasing dating to after c.1945.

Setting

4.3 As already noted above, the smithy is located in an isolated and elevated position on Moulds Side, on the southern slope of Arkengarthdale, within an extensive area of former mining remains. It lies above Lily Jock's Hush, on the edge of a very steep north-facing scarp [*1/030-1/033*] (see plate 1). The upper break of slope,

between 0.75m to 0.90m beyond the north wall of the smithy, is formed by a bare rock outcrop which drops near vertically for a short distance before becoming a very steep, largely grassed, surface. A rock outcrop can also be seen (in plan only) some 1.40m to the south of the south wall of the smithy. It runs parallel to that to the north of the building, and it seems likely that a level terrace, measuring approximately 8.0m east-west by 6.5m north-south, was deliberately created here to house the smithy by cutting back the surface of the rock, probably only by 0.30m. To the east and west of the smithy, the ground surface rises to either spoil heaps or disturbed ground. To the south, the ground also rises to a low scarp, along which a footpath runs. It appears that the smithy could originally have been approached only from the east or west, with the principal access perhaps from the east.

Plan Form and Structure (see figure 5)

4.4 The smithy has a slightly sub-rectangular plan, with maximum external dimensions of 7.30m east-west by 4.32m north-south; the external walls vary in width between 0.45m to 0.60m. It is of a single storey, and was originally provided with either a pitched or single-pitch roof, but subsequent collapse has removed almost all evidence for the roof form. It was formerly covered with corrugated iron sheeting (Tyson 1995, 93-94), and small fragments of such survive within rubble at the base of the very steep slope above which the smithy stands, together with several decayed softwood timbers up to 2.70m in length, which are also assumed to have formed part of the roof structure. The external walls now survive to a maximum height of 2.15m to the south side, and this probably represents something close to the original eaves level, although much results from post-1990 rebuilding [*1/029, 1/999*] (see plate 2).

4.5 The majority of the walls of are built of roughly coursed and squared gritstone rubble, set with a lime mortar. There are larger pieces of stone to the north-west and north-east corners used as quoins, but to the south-east and south-west corners the coursing does not change significantly. Where the walls have collapsed, such as at the south-west corner, the roughly coursed and squared rubble is revealed to be a facing only, with a core of small angular stone pieces [*1/008*]. There is a very small amount of brickwork to the internal south-east corner, the bricks being red, handmade (average dimensions 230mm by 110mm by 80mm) and set with a cement mortar; further examples of machine-made bricks can be seen at the base of the slope below the smithy.

External Elevations

4.6 In 1990, the facing of the east gable had largely collapsed externally, apart from at the very north and south ends, with a large spread of fallen stone to the east (see figure 4). Since then, it has been almost completely rebuilt to a height of 1.60m [*1/001, 1/002*] (see plate 3). The surviving pre-1990 elements are probably represented by the lowest visible one or two courses at the base of the gable, the lowest five stones to the north-east corner, and the lowest four stones to the south-east corner; in 1990, a large sub-square stone used as a quoin is visible above this height.

4.7 At the same date, the north elevation stood to c.0.90m or less in height, but this has since been rebuilt to a maximum of 1.72m in height [*1/004*]. This rebuilding has included two window openings, each c.1.00m wide, giving views across Arkengarthdale to the north and north-west. It might be thought, given the exposed position of the building, that large window openings would not have been

present in the north elevation, but Ramsay Hutchinson, the blacksmith after 1942, remembered that the smithy had a window which provided a delightful view across the dale (Tyson 1995, 93-94), and so at least one of the openings may replicate an original feature. The 'sill' of the west window has an outer skin, 0.30m wide, that has been heavily repointed using a cement mortar of recent appearance. The elevation appears to be original below c.0.90m in height.

4.8 In 1990, the west gable stood to something close to 2.00m high at the south-west corner, but it then stepped downwards towards the north-west corner (see figure 4). The latter was rebuilt to about the same height as the rest after 1990, but it has subsequently collapsed outwards, as has part of the original central part [*1/006, 1/007*] (see plate 4). The surviving pre-1990 elements are represented by the south-west corner, the lowest c.0.50m of the central part (now hidden by collapse), and the lowest visible three or four stones of the north-west corner.

4.9 In 1990, the south elevation stood to a height of c.1.30m at the south-east corner, but then stepped upwards to over 1.50m as it moved west (see figure 4). There then appears to have been a window opening, and an off-centre doorway; the east jamb of the doorway stood to c.1.10m in height. The west jamb was somewhat higher, and the south-west corner close to 2.00m high [*1/998*] (see plate 5). Since 1990, the parts of the elevation described above appear to have been left relatively undisturbed. However, that part of the elevation to the east of the doorway has been raised to an average height of between 1.50m-1.60m, and the 1.15m wide window opening visible in 1990 has been quite expertly blocked [*1/995*]. To the west of the doorway, it is possible that the higher south-west corner shown in 1990 was dismantled and used to heighten the doorway's west jamb. There is a heap of smithing waste adjacent to the base of the west end of the elevation [*1/997*].

4.10 At the north-east external corner of the building, there is an *ex situ* cast-iron container; as has already been noted, this is frequently moved to different positions by visitors, having previously stood adjacent to the doorway in the south elevation. It is not visible on Lamb's 1990 photograph. Tyson (1995, 94) states that this is the slick trough (also sometimes known as a quenching trough, sleck trough or tempering pan) in which heated tools were dowsed. The container is very slightly sub-square, measuring 0.30m in one direction and 0.34m in the other [*1/003*] (see plate 3). The sides are now 5mm thick, although they are very worn and would once have been somewhat more substantial. The container has a very slight curved 'base', with a total external depth of 0.345m. There is a small, centrally-positioned, hole (8mm in diameter) towards the curved end of one side, and several rivets positioned towards the open end of at least two sides. The form of the container might suggest that it was pressed into service as a slick trough (with the hole blocked up), and that this was not its original purpose; this is quite possible, as Hartley (1939, 145) previously recorded the use of an old iron cauldron as a tempering pan or trough in a smithy. The slick trough would once have been housed internally adjacent to the forge (see below).

Circulation (see figure 5)

4.11 At the time of the EDAS survey, the only access to the interior of the smithy was through the doorway in the south elevation, and this is likely to have been the only original access, facing away from the open valley side to the north and providing some shelter for those entering/exiting the building. Part of the worn stone threshold of the doorway remains visible [*1/028*], and it appears that this stepped down into the interior of the building. This stone is flanked by metal wedges or straps, projecting vertically up to 0.18m from the ground surface. The wedges are

30mm wide and 10mm thick at the base, tapering slightly as they rise. They were probably used to secure the uprights of the timber doorframe, but this has since been removed. The east jamb of the doorway opening is set at a right angle to the external wall face, whereas the west jamb splays outwards towards the interior.

4.12 The interior of the smithy was relatively clear at the time of the survey, with little in the way of fallen material or other debris, and no modern littering such as discarded bottles. The floor was grassed, and so it was not possible to see any original floor covering, if it indeed survives.

4.13 The east wall is blank [*1/009*]; the 1990 photograph suggests that less of the internal wall facing here had collapsed than externally, and so the lower c.0.80m is likely to be undisturbed. A low brick structure has been built across the angle of the east and south walls [*1/010*]. It is formed by a shallow cambered arch, once comprising at least two rows of four headers; there is a triangular pattern of blackening to the stone above the brickwork. A small oven or stove was once located here, as the smithy also served as a canteen where the men could warm themselves while eating their food (Tyson 1995, 93-94).

4.14 The blocked window noted externally to the south wall is also visible internally [*1/011*] (see plate 6); the 1990 photograph suggests that the same proportion of the internal face of this wall has been rebuilt as that described externally above. To the west of the off-centre doorway, there is a feature set 1.20m above the internal ground level that may once have been a socket, although it is perhaps more likely to represent no more than a fallen stone [*1/012, 1/013*].

4.15 At the south end of the west wall, a more convincing socket, 0.28m deep, is placed 1.07m above the internal ground level. The remains of the forge stand at the north end of the west wall [*1/023*]. There are two stone walls to the front (east) of the forge which would have flanked the breeze hole; the wider south wall survives to c.0.50m in height, but the north wall is visible in plan only. The main body of the hearth comprises a low stone platform, with a wall rising from its south end. This wall butts the main west wall of the smithy, but does not appear to have been rebuilt since 1990 and probably represents an original feature [*1/024*] (see plate 7). It would have supported one side of the canopy or hood over the hearth, with the flue rising above. There is now no visible sign of the tuyere, but it seems likely that the bellows were housed in the space to the south of the forge. Their form is unknown, but they may have been circular, or perhaps a hand-cranked blower was used. The original bellows remained *in situ* in the smithy building until at least 1965, but were subsequently removed (Rowena Hutchinson, *pers. comm.*). The smithy would also have housed all the other necessary equipment of the smith, including an anvil, a bench and vice and other tools. There are some metal fittings, including a 0.35m square cast-iron plate, in the rubble at the base of the slope beneath the smithy building.

4.16 The 1990 photograph suggests that the same proportion of the internal face of the north wall has been rebuilt as that described externally above [*1/026*] (see plate 8). Towards the centre of the north wall, a straight joint is visible at a lower level, between the two windows and apparently set within stonework dating to before 1990 [*1/025*].

Graffiti (see figure 5)

4.17 During the course of the EDAS survey, it was noted that some of the external and internal walling stone preserves crudely incised graffiti. Some of the stone was

clearly placed in its existing location after 1990, and so much of the graffiti is unlikely to be *in situ*. Several examples are also quite worn and difficult to read.

4.18 Starting with the external elevations, at the top of the east jamb of the doorway in the south elevation, there is a re-set stone bearing the large capital initials 'BD' set within a rectangular frame [*1/996*] (see plate 9); these initials do not correspond with anyone on the list of those working at the site in 1940 or 1950 by Tyson (1995, 95) nor are any local people with these initials known (Kay Jackson, Rowena Hutchinson, *pers. comm.*). To the north of centre of the east gable, there is a re-set stone bearing graffiti, but it is now too worn to read clearly [*1/005*].

4.19 Within the interior, to the east of the doorway in the south wall, there are two stones bearing graffiti, both apparently re-set within the blocking of the window opening here. The upper stone is worn, and may bear the capital initials 'FB', or possibly the combination 'F 8' [*1/014*]; again, it is not possible to relate these to the names given by Tyson or of local people. Below, the lower stone may bear the capital initials 'RMH' set within a roughly rectangular frame [*1/015*] (see plate 10). Although a Ralph Hird worked at the chert quarries for a very significant time (Wright 1950, 89), the initials must surely relate to Ramsay Moralee Hutchinson, who was employed at the smithy between 1940 and 1950 (Les Tyson and Rowena Hutchinson, *pers. comm.*). At the upper part of the west end of the south wall, there are a group of five separate stones, three of which bear graffiti which is consecutive [*1/016*]. These are important, as this part of the structure does not appear to have been rebuilt after 1990 and so they may be the only graffiti which remains *in situ.* The uppermost stone bears the capital initials 'SD' set within a rectangular frame [*1/019*] (see plate 11); these are carved in a similar manner to the aforementioned 'BD', but again cannot be identified. Below this, a second stone may bear the same capital initials set within a rectangular frame, possibly inverted, but it is rather worn [*1/020*]. The three consecutive stones appear to bear the date 'SEP 27 1934 (or alternatively 1937)' [*1/021, 1/022*] (see plate 12). Finally, in the west jamb of the west window in the north wall, there is a re-set stone that is worn and difficult to read. However, it may have been inverted, and bear illegible capital initials over the date '1940' [*1/027*]. As has already been noted, this was the date that Ramsay Hutchinson arrived at the smithy.

5 DISCUSSION

5.1 In contrast to previous suggestions, there is no convincing evidence that the smithy was a former lead-mining structure that was put back into use for 20th century chert working, and it appears to have been purpose-built to serve the chert quarries. Although the survey has uncovered no conclusive proof as to its date of erection, it is highly likely that the date carved over three stones on the internal south wall is significant. Opencasting for chert began in the area in 1932, but the date on the south wall may read 'SEP 27 1934'. Given that the adjacent chert levels were driven after 1932, it is quite possible that when this took place, a smithy housed in the disused New Mill complex was no longer conveniently sited. A new smithy on Moulds Side was therefore built, the 1934 date perhaps indicating not only when the building was finished but also providing an idea as to when the levels were started. The new smithy was easily accessible from the levels, important not only for access to the smithy but also for the men taking their meals inside.

5.2 It is possible that the smithy was built using materials salvaged from an adjacent structure named as 'Old Walls' on the 1857 Ordnance Survey map, perhaps a sheepfold. In its original form, the smithy was a single storey, slightly sub-

rectangular building, with relatively thick walls. It had either a pitched or single-pitch roof, covered in corrugated iron sheeting. The only doorway, positioned off-centre in the south elevation, faces away from the open valley side to the north, and there were at least two windows, one in the north elevation and one in the south. Internally, the forge was placed at the north-west corner, with the bellows to the immediate south. In the south-east corner, there was a small stove or oven. The smithy retains internal graffiti relating to Ramsay Moralee Hutchinson, who worked at the smithy between 1940 and 1950, but the only surviving piece of smithing equipment is the *ex situ* slick trough. It is assumed that the rest of the equipment in the building was removed after the closure of the chert workings in 1950, along with the roof, although it is known that the bellows remained *in situ* until at least 1965.

5.3 The ruins of the smithy were substantially rebuilt after 1990; it is not certain by whom and for what purpose, although several names have been suggested to the authors. One of the authors of this report (SR) has been shown a photograph album of unofficial consolidation works undertaken on former lead mining structures within the Yorkshire Dales, often adit entrances, by a member of the informal group that undertakes them, but it did not include the smithy. An alternative suggestion that has been made is that the rebuilding was undertaken by those seeking mineral specimens in and around the hushes and former mining areas, although this seems unlikely.

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18th August 1990 Photograph of smithy, looking north-west, taken by Richard Lamb

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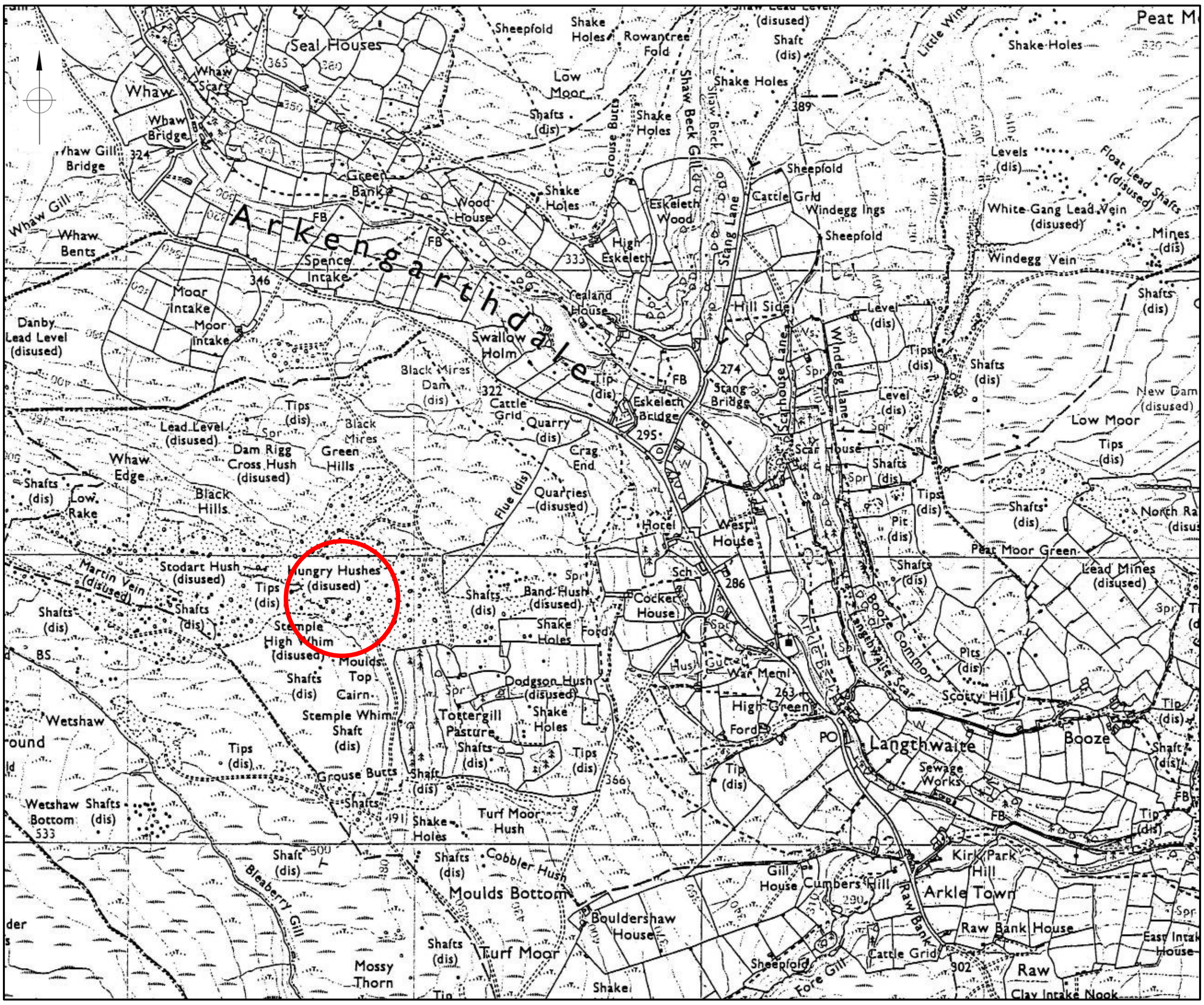
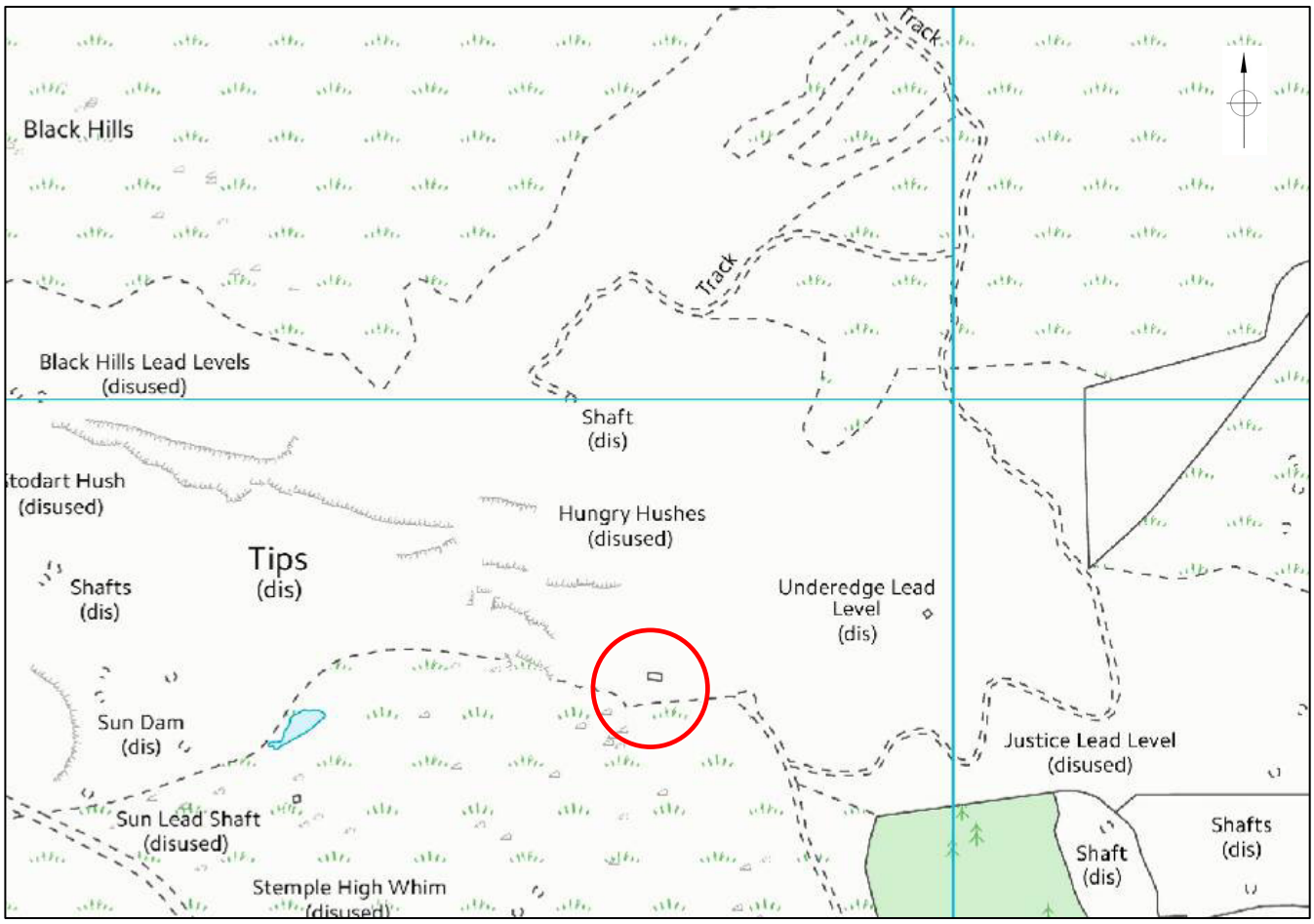
7 ACKNOWLEDGEMENTS

7.1 The archaeological survey was commissioned by Mr Robert White, Senior Historic Environment Officer of the Yorkshire Dales National Park Authority (YDNPA), and EDAS would like to thank him for arranging access to the site. The on-site survey was undertaken by Shaun Richardson and Richard Lamb, the former also producing the fieldwork records. Richard Lamb also kindly provided and authorised use of the 1990 photograph. Les Tyson, Kay Jackson and Rowena Hutchinson are also thanked for providing oral information relating to the site, and for reading a draft copy of this report. Ed Dennison produced the final report, and the responsibility for any errors or inconsistencies remains with him.

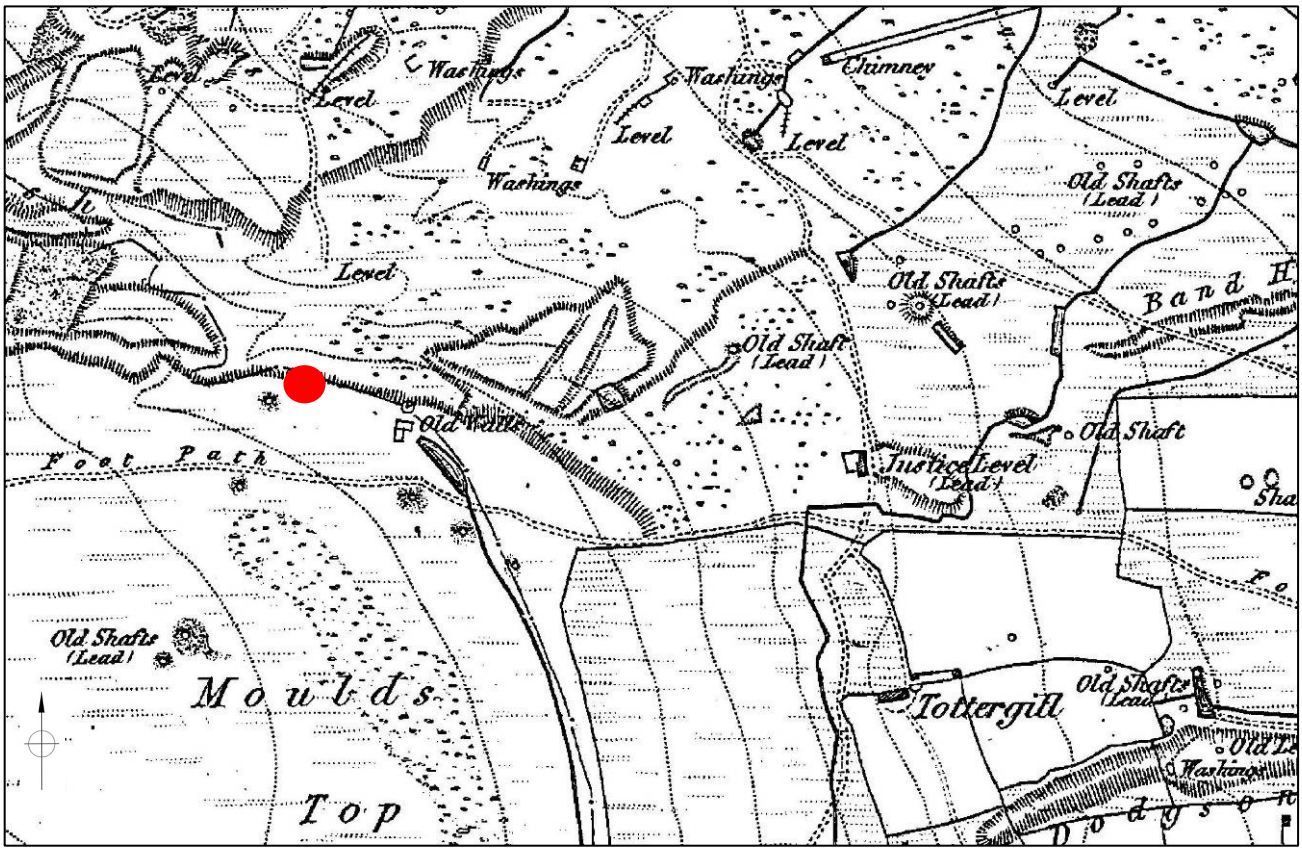


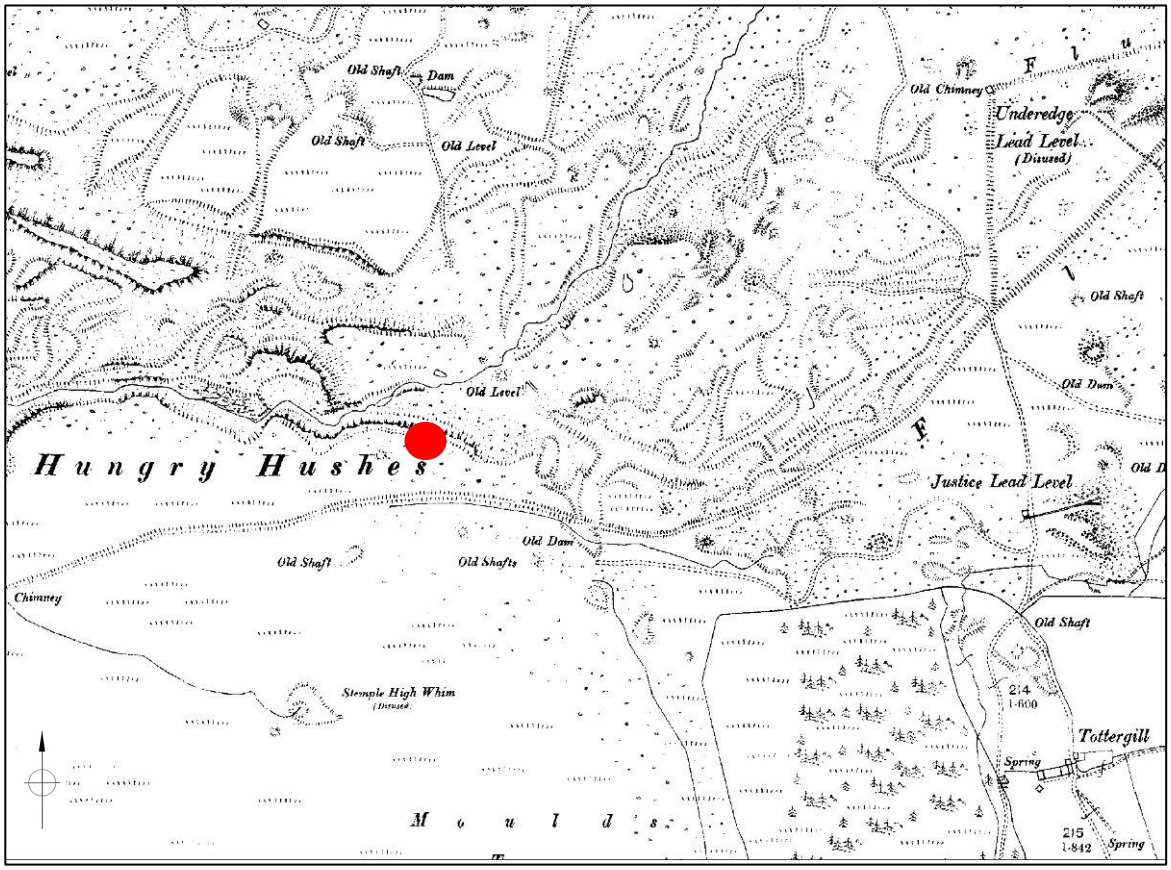
PROJECT	
HUNGRY HUSHES SMITHY	
TITLE	
GENERAL LOCATION	
SCALE: NTS	DATE: OCT 2014
EDAS	FIGURE: 1



Ordnance Survey map base
provided by YDNPA.

PROJECT: HUNGRY HUSHES SMITHY	
TITLE: DETAILED LOCATION	
SCALE: NTS	DATE: OCT 2014
EDAS	FIGURE: 2





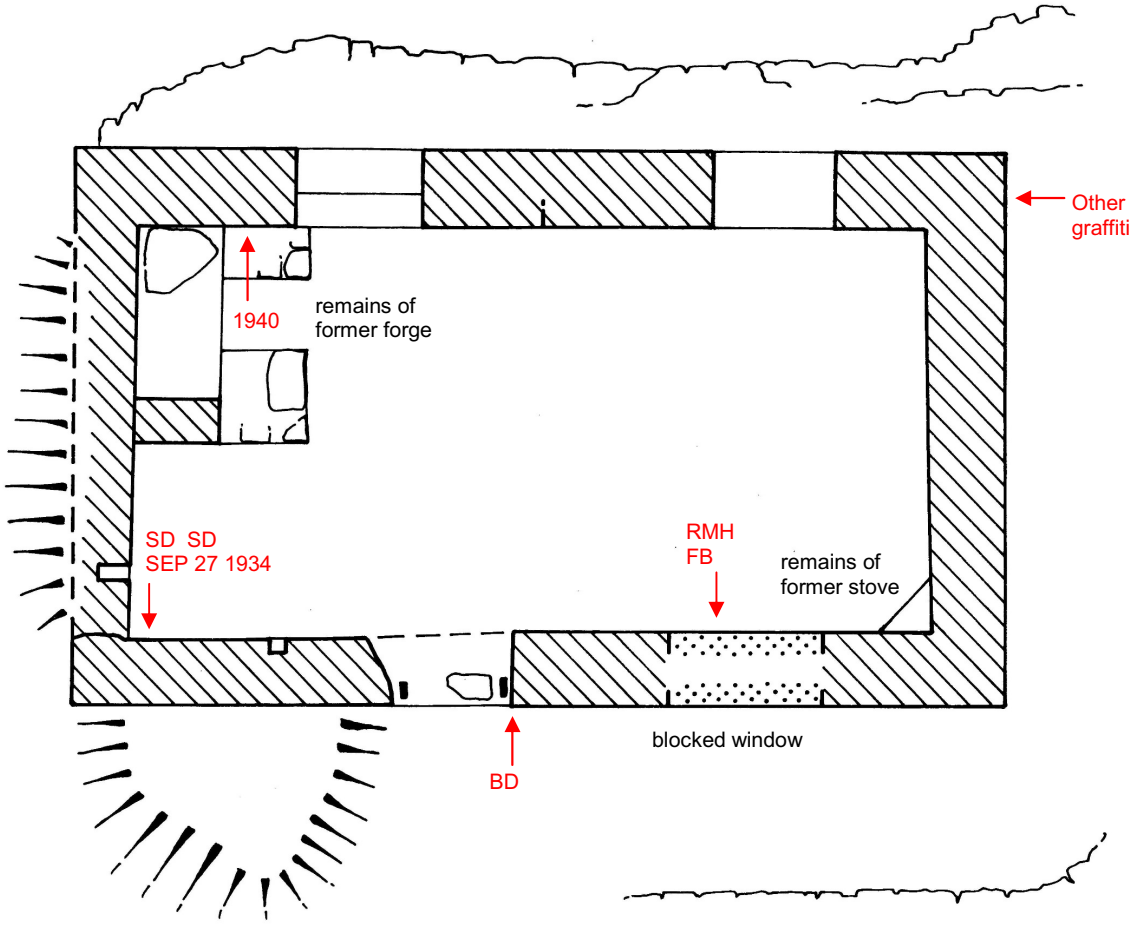
Top: Ordnance Survey 1857 6” map sheet 37, surveyed 1854.
Bottom: Ordnance Survey 1912 25” to 1 mile map sheet 37/5 (re-surveyed 1891, revised 1910).

Red circle indicates site of later smithy.

PROJECT: HUNGRY HUSHES SMITHY	
TITLE: HISTORIC MAPS	
SCALE: NTS	DATE: OCT 2014
EDAS	FIGURE: 3

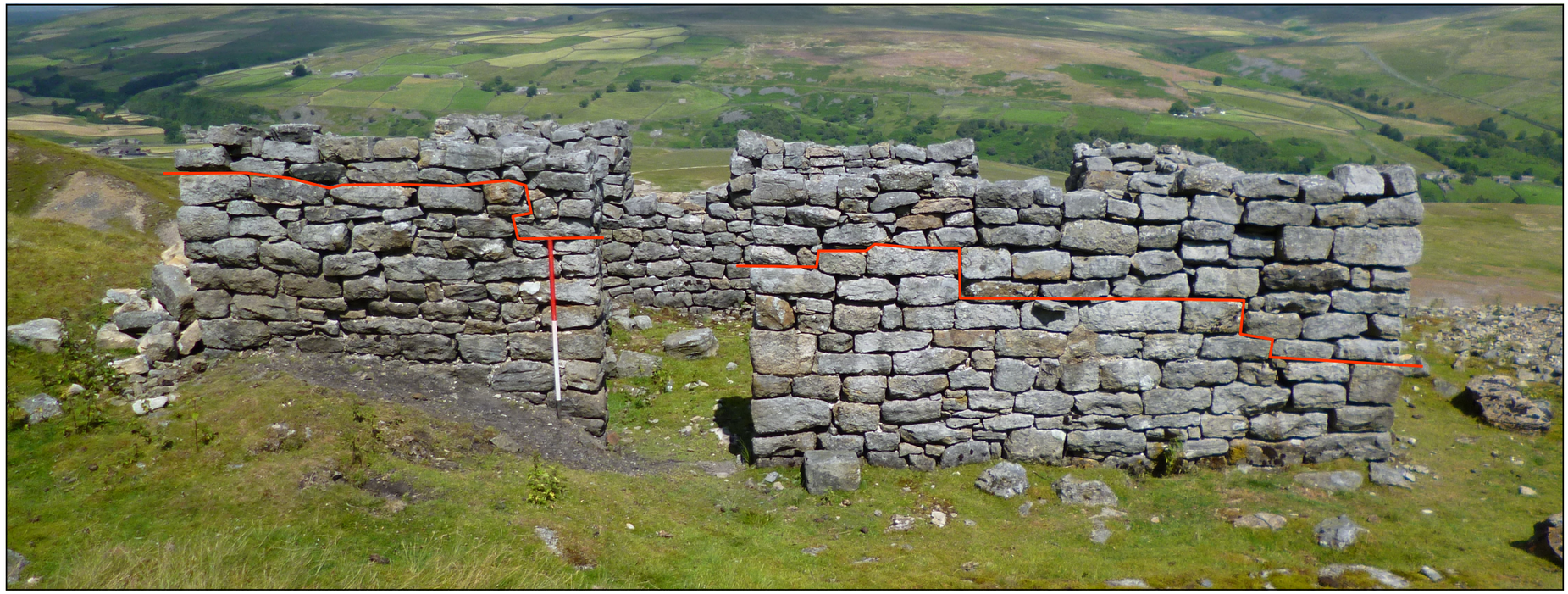
35mm colour slide taken by Richard Lamb, looking NW, 18th August 1990 (reproduced with permission).

PROJECT: HUNGRY HUSHES SMITHY	
TITLE: 1990 PHOTOGRAPH	
SCALE: NTS	DATE: OCT 2014
EDAS	FIGURE: 4



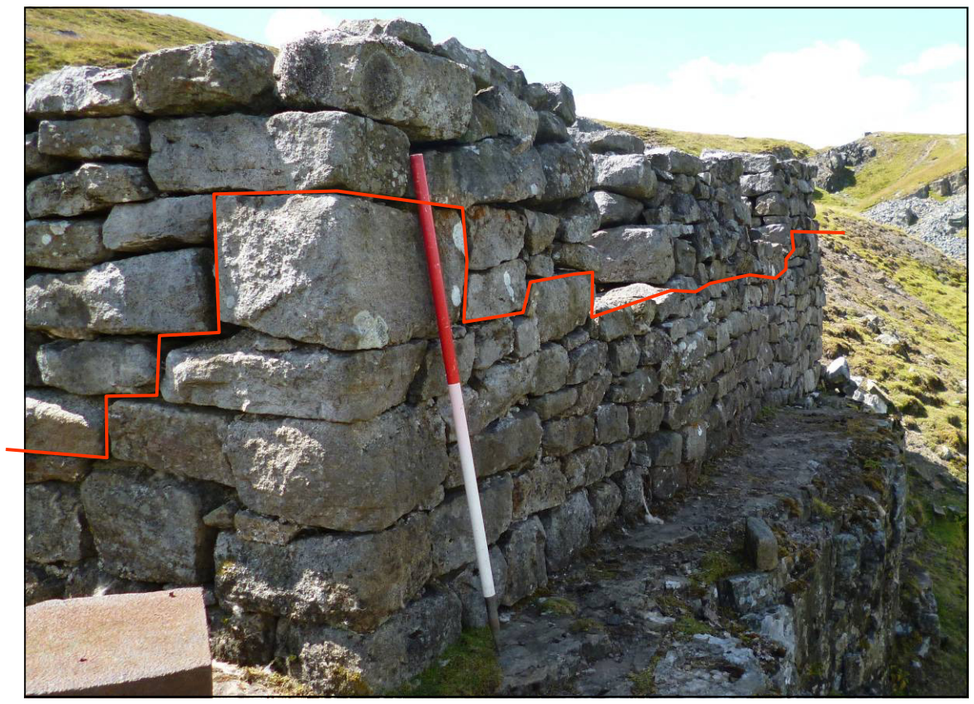
Position of graffiti shown in red.

PROJECT: HUNGRY HUSHES SMITHY	
TITLE: GROUND PLAN	
SCALE: AS SHOWN	DATE: OCT 2014
EDAS	FIGURE: 5



South elevation

East elevation



North elevation

PROJECT	HUNGRY HUSHES SMITHY
TITLE	EXTENT OF POST 1990 REBUILDING?
SCALE: NTS	DATE: OCT 2014
EDAS	FIGURE: 6

Plate 1: General view of smithy building within landscape context, looking NW (photo 1/033).

Plate 2: Smithy building, looking NE (photo 1/029).

Plate 3: East elevation, looking W (photo 1/001).

Plate 4: West elevation, looking E (photo 1/006).

Plate 5: South elevation, looking N (photo 1/998).

Plate 6: East end of south internal wall, looking SE (photo 1/011).

Plate 7: West internal wall, showing remains of forge to right, looking W (photo 1/023).

Plate 8: North internal wall, looking NE (photo 1/026).

Plate 9: Graffiti (‘BD’) at top of east jamb of south doorway, looking N (photo 1/996).

Plate 10: Graffiti (‘RMH’) within internal blocking of south window, looking S (photo 1/015).

Plate 11: Graffiti (‘SD’), west end of south internal wall, looking S (photo 1/019).

Plate 12: Graffiti (‘SEP’), west end of south internal wall, looking S (photo 1/021).

APPENDIX 1

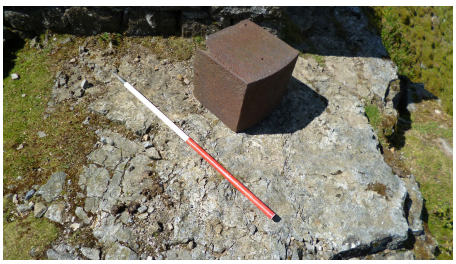
HUNGRY HUSHES SMITHY BUILDING: PHOTOGRAPHIC CATALOGUE

Film 1: Colour digital photographs taken 17th July 2014

Film	*Frame*	*Subject*	*Scale*
1	001	Smithy, E elevation, looking W	1m
1	002	Smithy, E elevation, looking W	1m
1	003	Smithy, slaking trough?, looking NW	1m
1	004	Smithy, N elevation, looking W	1m
1	005	Smithy, worn graffiti, E elevation, looking W	-
1	006	Smithy, W elevation, looking E	1m
1	007	Smithy, W elevation, looking E	1m
1	008	Smithy, SW external corner, looking SE	1m
1	009	Smithy, E wall, looking E	1m
1	010	Smithy, SE internal corner, looking SE	1m
1	011	Smithy, S wall, looking SE	1m
1	012	Smithy, S wall, looking SW	1m
1	013	Smithy, S wall, looking S	1m
1	014	Smithy, 'FB' or F8' graffiti, S wall, looking S	-
1	015	Smithy, 'RMH' graffiti, S wall, looking S	-
1	016	Smithy, graffiti, S wall, looking S	-
1	019	Smithy, 'SD' graffiti, S wall, looking S	-
1	020	Smithy, 'SD' graffiti, S wall, looking S	-
1	021	Smithy, 'SEP' graffiti, S wall, looking S	-
1	022	Smithy, '1934' or '1937' graffiti, S wall, looking S	-
1	023	Smithy, forge, W wall, looking W	1m
1	024	Smithy, forge, W wall, looking W	1m
1	025	Smithy, N wall, looking N	1m
1	026	Smithy, N wall, looking NE	1m
1	027	Smithy, '1940'? graffiti, W window, looking W	-
1	028	Smithy, door threshold, looking S	-
1	029	Smithy, looking NW	1m
1	030	Smithy, looking NW	1m
1	031	Smithy, looking NW	1m
1	032	Smithy, looking NW	1m
1	033	Smithy, looking NW	1m
1	995	Smithy, E end S elevation, looking N	1m
1	996	Smithy, 'BD' graffiti, S elevation, looking N	-
1	997	Smithy, W end S elevation, looking N	1m
1	998	Smithy, S elevation, looking N	1m
1	999	Smithy, E elevation, looking W	1m

1-001.JPG

1-002.JPG



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