

FORMER CHARCOAL BARN, NEWLAND, ULVERSTON, CUMBRIA

Archaeological Watching Brief



Client: Mr and Mrs McDermott

NGR: 329956 479724

Planning Application Refs:
SL/2009/0752 and
SL/2009/0753

Scheduled Monument Consent
Ref: S00049380

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Contents

Illustrations	1
Non-Technical Summary	2
Acknowledgements	2
1. Introduction	3
2. Methodology	5
3. Site History	6
4. Results	9
5. Discussion and Conclusion	11
6. Bibliography	12
Appendix 1: Project Design	14
Appendix 2: Summary Context List	20
Appendix 3: Summary Finds List	21

Illustrations

List of Figures

Figure 1: Site location	4
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List of Plates

Plate 1: Newland Furnace c1897 shortly after its closure (Anon 1897)	7
Plate 2: Plan of the charcoal barn and furnace (from Goodall 2001, figure 3)	8
Plate 3 (left): Area before excavation, viewed from the south	9
Plate 4 (right): Area before excavation, viewed from the north	9
Plate 5 (left): Excavation through deposit 102 showing the modern rubbish, viewed from south-east	9
Plate 6 (right): Excavation through deposits, viewed from south-east	9
Plate 7: Haematite deposit staining the end of the charcoal barn, viewed from the south	10

Non-Technical Summary

A part of the granting of Scheduled Monument consent for work to be carried out as part of the conversion of the former charcoal barn at Newland, Cumbria, a condition was placed by English Heritage requiring a programme of archaeological work. Greenlane Archaeology was appointed to carry out the watching brief, which took place in March 2013.

The former charcoal barn was originally part of a complex of buildings associated with a blast furnace, which was constructed at Newland in 1746-7 by Richard Ford and his associates, who became known as the Newland Company. The furnace continued to expand during the 18th century with the addition of a forge and rolling mill, and remained in operation until 1891 by which time it had finally undergone modernisation and stopped using charcoal as a fuel. The charcoal barn, as with the rest of the site, saw several phases of modification, with an initial north-south block set against the slope extended to the north and south, and then to the east. The furnace buildings were subsequently put to a variety of uses, including a joiner's workshop, and the charcoal barn went on to be used for storing coal, although a devastating flood in 1918 destroyed any remaining workings at the furnace.

The watching brief entailed the monitoring of ground works on site, comprising the removal of part of a bank set against the south end of the charcoal barn. This revealed that, although it had been subsequently utilised as a location to dump and bury rubbish, the bank originated in part as a dump of haematite (iron ore), presumably intended for use in the nearby furnace. However, the fact that this deposit was located in an area known to have originally had an extension to the charcoal barn on it suggests that this addition may in fact have been an ore store at one stage, if not necessarily originally, or that this material was dumped there following demolition. Unfortunately the later dumping of rubbish and associated disturbance obscured any real evidence for this.

Finds recovered during the watching brief were of primarily 19th century date, suggesting that this ore heap was at least in use at this time, although it could have developed at an earlier date. This to some degree fits with the documentary evidence, which shows that by the end of the 19th century, when the furnace was in its final years, it had amassed a considerable stockpile of ore. The watching brief is one of a number of recent small pieces of work in Newland, all of which add to the understanding of the site.

Acknowledgements

Greenlane Archaeology would like to thank Mr and Mrs McDermott for commissioning the project, in particular Mr McDermott for his help on site. Special thanks are due to the staff of Hindle Demolition and Plant Hire for driving the excavator. Additional thanks are due to Andrew Davison, at the time Principal Inspector of Ancient Monuments at English Heritage, for his comments on the project.

The watching brief was carried out by Dan Elsworth, who also wrote the report. The illustrations were produced by Tom Mace. The project was managed by Dan Elsworth and the report edited by Jo Dawson, who also assessed the finds.

1. Introduction

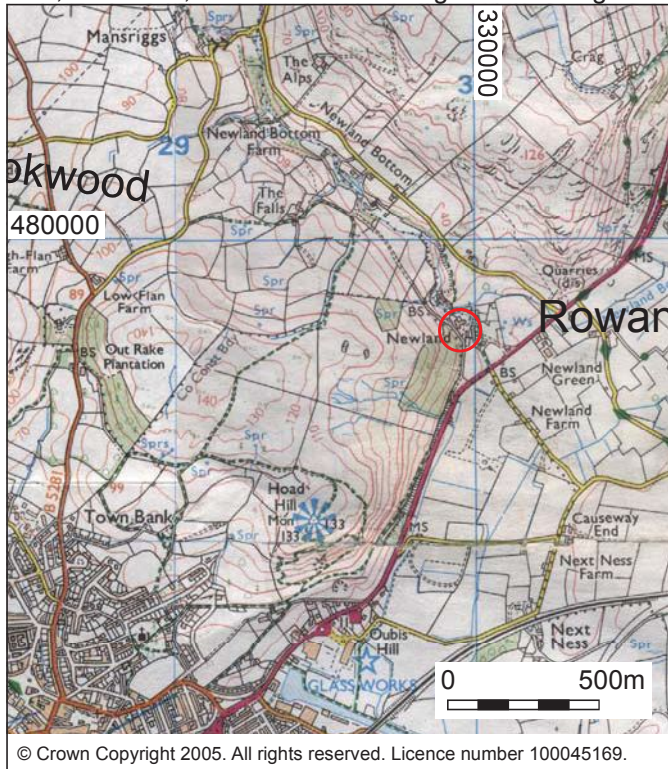
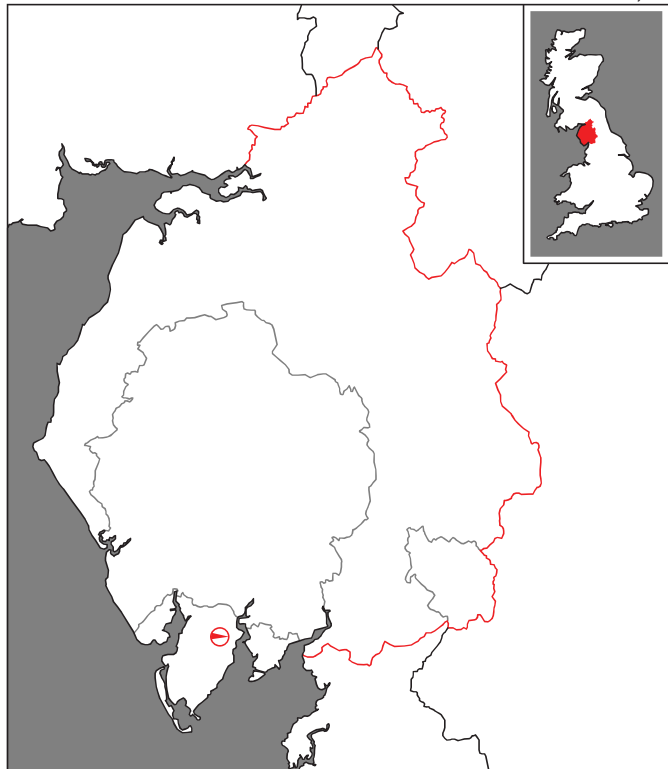
1.1 Circumstances of the Project

1.1.1 As part of the granting of Scheduled Monument consent (Ref. S00049380) for work to be carried out as part of the conversion of the former Charcoal Barn at Newland, Ulverston, Cumbria (NGR 329956 479724) a condition was placed by English Heritage (now Historic England) as part of the consent requiring a programme of archaeological work to be undertaken. The building is adjacent to the Scheduled Monument area for the Newland blast furnace, blacking mill, associated buildings and water management systems (Scheduled Monument No. SM 34986), which is considered to be of national importance, and some of the ground work involved was to take place within the Scheduled Monument area. Initially the work associated with the conversion of the former Charcoal Barn was expected to include various elements of excavation that would require a watching brief. However, a different methodology was subsequently utilised for some of the work associated with the actual building that did not involve excavation (Mr McDermott pers comm) and so the watching brief was restricted to the single piece of work described below. Greenlane Archaeology was only informed of this some considerable time after the watching brief had been carried out, hence the delay in completing the report.

1.2 Location, Geology, and Topography

1.2.1 The village of Newland is approximately 1.5km north-east of the centre of Ulverston, and situated at the end of the Newland Beck valley (Figure 1). The charcoal barn is immediately west of the blast furnace, but the land immediately south and west of the charcoal barn is part of the scheduled area.

1.2.2 The site lies near the base of a steep slope rising up to an area of high ground, formerly part of the common land of Ulverson, and is at approximately 15m above sea level (Ordnance Survey 2008). The main road into the area, the A590, is approximately 170m to the south-east. Newland is within the West Cumbria coastal plain, a landscape generally made up of pastoral land in an '*undulating or rolling topography*' (Countryside Commission 1998, 27). The solid geology is typically made up of Bannisdale slate and Carboniferous limestone (Moseley 1978, plate 1), and this is overlain by a drift geology made up of glacially-derived tills comprising boulder clay, sands and gravels (Countryside Commission 1998, 27).



Key: Scheduled Monument watching brief area

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Figure 1: Site location

Client: Mr and Mrs McDermott

2. Methodology

2.1 Watching Brief

2.1.1 All aspects of the archaeological recording were carried out according to the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014) and Greenlane Archaeology's own excavation manual (2007). The excavation work was carried out by mechanical excavator observed by staff from Greenlane Archaeology and all deposits and features exposed were recorded in the following manner:

- **Written record:** descriptive records were made using Greenlane Archaeology *pro forma* record sheets;
- **Photographs:** photographs in both colour print and colour digital format were taken of all archaeological features uncovered during the watching brief, as well as general views of the site, the surrounding landscape, and working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology *pro forma* record sheets;
- **Drawings:** drawings were produced on site as follows:
 - i. the location plan of the watching brief area was marked on a plan of the site at a scale of 1:500;

2.2 Environmental Samples

2.2.1 No environmental samples were taken as no appropriate deposits were encountered.

2.3 Finds

2.3.1 **Processing:** all of the artefacts recovered from the watching brief were washed, with the exception of metal and glass, which were dry-brushed. They were then naturally air-dried and packaged appropriately in self-seal bags with white write-on panels.

2.3.2 **Assessment and recording:** all of the finds were assessed and identified by through visual examination and reference to published comparable material. The finds were recorded directly into the report catalogue (*Appendix 3*).

2.4 Archive

2.4.1 A comprehensive archive of the project has been produced in accordance with the project design and current CIfA and English Heritage guidelines (Brown 2007; English Heritage 1991). The paper and digital archive and a copy of this report will be deposited in the Cumbria Archive Centre in Barrow-in-Furness on completion of the project. A paper copy or digital copy of this report will be provided for Historic England (formerly English Heritage), in order to enable the discharge condition on the Scheduled Monument consent, and the Historic Environment Service at Cumbria County Council for placement in the Historic Environment Record. In addition, a paper copy will be provided to the client and one will be retained by Greenlane Archaeology. A digital record of the project will also be made on the *Online Access to the Index of Archaeological Investigations* (OASIS) scheme.

3. Site History

3.1 Background History

3.1.1 The background to the site is intended to place the results of the project in its local context. More specific information regarding the development and use of the site, where known, is also presented, which allows a more detailed understanding of the results of the project.

3.1.2 **Early History:** while there is evidence for prehistoric activity from the area around Ulverston in the form of casual finds such as stone axes and axe hammers dating from the Neolithic and Bronze Age (CCC and EH 2002, map D), the extent of any associated settlement is, as yet, uncertain. More recently a large enclosure has been identified on Hoad Hill, immediately to the west of Newland, which is considered likely to be of Late Bronze Age or Iron Age origin (Elsworth 2005; Elsworth 2014).

3.1.3 Although there have been occasional finds of Roman coins, no evidence has yet been confirmed of settlement from that period in the immediate area. Some of these stray finds, such as a coin (Shotter 1989, 42), have been found in relatively close proximity to the site, however, and fragments of possible Romano-British pottery have recently been found during evaluations in Ulverston (OA North 2004; Greenlane Archaeology 2006). Recent work reappraising the evidence for Roman activity in the general area has suggested that a road may have passed close to or through Ulverston and that this could have had an associated settlement (Elsworth 2007).

3.1.4 **Medieval:** the hamlet of Newland is recorded as early as c1196 in the Coucher Books of Furness Abbey (Atkinson 1887, 385); the place-name might be taken to indicate land that had been relatively recently taken into cultivation. A mill is recorded at Newland from as early as 1331 (Farrer and Brownbill 1914, 359n) and by at least 1347 it is part of property held by William de Coucy and Robert de Coucy of Gynes (Farrer 1915, 154). Later, in 1535, it is recorded as having paid rent to Furness Abbey (Farrer and Brownbill 1914, 359n; the tenant at the time was a John Corker: Brownbill 1919, 614), and was subsequently taken into the ownership of the crown before being sold in 1662 (Davies-Shiel 1978, 111).

3.1.5 **Newland Furnace:** the most significant historical development in Newland is the establishment of a blast furnace in the first half of the 18th century. In 1746 Newland Mill was acquired from John Benson of Mansrigg Hall by Agnes Bordley acting on behalf of Richard Ford, her brother, and his business partners (Michael Knott, James Backhouse, and William Ford), in order to control the valuable water system that existed in the valley (Fell 1908, 217; OA North 2003, 12). Using Agnes Bordley to acquire the estate allowed them to establish a new enterprise without breaking an agreement made in 1735 with Thomas Rigg in regard to the Nibthwaite Furnace, in which Ford was a partner, by which neither party could establish a furnace within 10 miles (Fell 1908, 212). By 1784 the increased involvement of Henry Ainslie, through his marriage to Richard Ford's daughter Agnes, led to the company becoming known as Knott, Ainslie and Co, and after George Knott's death in 1812, Harrison, Ainslie and Co (OA North 2003, 13).

3.1.6 The furnace was enlarged in the later 18th century with the addition of a forge in 1783 and a rolling mill in 1799; the latter subsequently became a blacking mill in the 19th century (Fell 1908, 218), while there is some evidence that the former was contained within the old corn mill to the south of the furnace (Greenlane Archaeology 2009b). By 1818 Harrison, Ainslie and Co. seem to have been trading as the Newland Company (Goodall 2001, 4), and they continued to operate the furnace at Newland intermittently until 1891 (*op cit*, 7). According to Mannex's Directory of 1882 '*...from its commencement until 1874...considerable alterations and improvements were made, and coke and coal substituted for charcoal*' (Mannex and Co 1882, 249). These improvements are likely to have included the installation of a hot blast system whereby hot waste gases could be re-used in the smelting process (Goodall 2001, 7). The brick chimney and raised throat evident in the only early photograph of the site (Plate 1) is likely to relate to this, as is the presence of the brick flue in the 'garage' (*ibid*).

3.1.7 These alterations were not enough to save the struggling enterprise, however. By 1890 the price of pig iron had fallen and holding a stockpile of over 1,000 tons by January 1891 contributed to the furnace's eventual closure (Marshall *et al* 1996, 213). The Newland Company cancelled the lease of the property in 1903, which was taken up by James Athersmith, a joiner and wheelwright, who sub-let part

of the site to Thomas Thompson (Goodall 2001, 8). As well as the corn mill the property included Newland House and garden, five cottages with gardens, the joiner's shop and the iron furnace, which was by that time in ruins (CRO(B) BD/BUC/43/8/22 1904).



Plate 1: Newland Furnace c1897 shortly after its closure (Anon 1897)

3.1.8 In 1918 the dam that controlled the water to the furnace buildings burst during a heavy storm and much of Newland was flooded (Helme 2002, 68). This damage and the cost of repair and maintenance of the mill and other buildings forced the landowner, the Duke of Buccleuch, to put all the land and property at Newland up for sale in 1921 (*ibid*; CRO(B) BD/BUC/42/Bundle 6/50 1918-1919). It was finally bought by Thomas Thompson in the same year after a bidding war with James Athersmith, his former landlord (CRO(B) BD/BUC/17/42 1921-25). Some of the buildings associated with the furnace appear to have carried on in use as a joiner's workshop after the closure of the furnace (as is evident in Plate 1), remained in reasonably good condition long after the furnace stack had become ruinous. Parts of the site were also used as a garage after the Second World War (Helme 1994, 13).

3.1.9 **The Charcoal Barns:** the charcoal barns were a significant element of the furnace site as it was essential that there was room to store an adequate amount of charcoal to fuel the furnace. Like much of the rest of the site the charcoal barns underwent a complex sequence of alterations (Goodall 2001, 13). The earliest element appears to be the north/south section on the west side, which was built into the slope to the west, and had additions added to the north and south, the north a lean-to perhaps added in the late 18th century, the south considered to be another charcoal barn (*op cit*, 14), certainly by the middle of the 19th century. The south extension was clearly demolished by the late 19th century but the mortar scar of its roof line remains visible (*ibid*). The main charcoal barn then had a further two additions added to it, first to the north and then extending to the east (*ibid*).

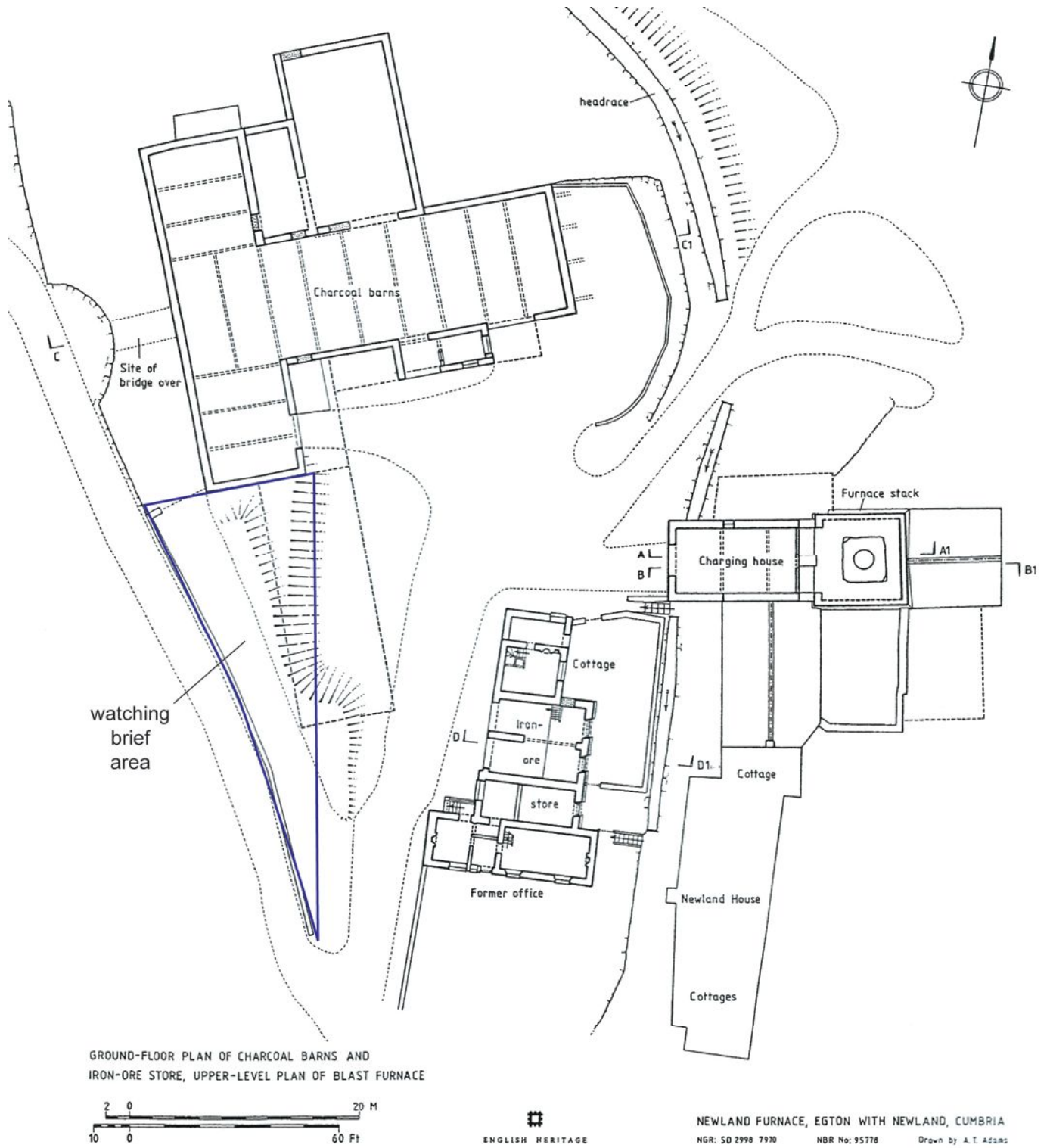


Plate 2: Plan of the charcoal barn and furnace (from Goodall 2001, figure 3)

4. Results

4.1 Watching Brief

4.1.1 The excavation comprised the removal of most of a bank of material sat against the south-east end of the south-east wing of the charcoal barn and parallel to a track running past the barn to the north. In the top was a row of tree stumps and surface debris (Plate 3 and Plate 4), which were cleared, beneath which was a thin layer of black gravel, evidently stained with coal dust, and containing modern rubbish as well as some earlier finds and glassy slag (**100**). Excavation into the bank from the east revealed a deposit of mid-brown stoney soil beneath this gravel up to 0.4m thick (**101**), which was deposited on top of a thick layer of haematite stained gravelly material containing large amounts of rubbish including tractor tyres and sheet metal (Plate 5), up to 1.3m thick (**102**). Beneath this, only just exposed at the base of excavation, was a layer of pinkish gravel at least 0.2m thick (Plate 6) containing some glassy slag that had evidently been dumped against the barn itself as it stained the wall (**103**) (Plate 7).



Plate 3 (left): Area before excavation, viewed from the south



Plate 4 (right): Area before excavation, viewed from the north



Plate 5 (left): Excavation through deposit **102** showing the modern rubbish, viewed from south-east



Plate 6 (right): Excavation through deposits, viewed from south-east



Plate 7: Haematite deposit staining the end of the charcoal barn, viewed from the south

4.2 Finds

4.2.1 **Introduction:** in total of 22 artefacts were recovered during the watching brief, largely comprising pottery, but also including glass and a single iron object. All of the finds are post-medieval in date and potentially range in date from the late 17th to 20th century, although in general a date in the 19th century is most likely for all of them. A complete catalogue of the finds is presented in *Appendix 3*.

4.2.2 **Post-medieval pottery:** the pottery represented a large amount of fairly typical domestic ware types, dominated by coarse red earthenware, which is typically not easily dateable due to the persistence of forms. More readily dateable types such as blue transfer-printed white earthenware are remarkably consistent, with a 19th century date common in most cases. Of this the single marked fragment is the product of John Wilkinson's pottery in Whitehaven and as such can be dated 1824-1840 (Kowalsky and Kowalsky 1999, 369).

4.2.3 **Glass:** the three fragments of glass are also likely to be 19th century, although less easy to date, and include structural material such as window glass as well as domestic rubbish.

4.2.4 **Metal:** a single metal find was recovered, comprising part of the iron edging attached to the sole of a wooden clog. This is difficult to date as such items were used over a long period, but a 19th century date is again likely.

5. Discussion and Conclusion

5.1 Discussion

5.1.1 While the watching brief did not reveal any features of particular archaeological interest it did demonstrate that the bank set against the south end of the former charcoal barn at Newland was at least partially constructed from a dump of haematite that was presumably destined for use in the nearby iron furnace. The iron ore stores at Newland are otherwise thought to have been across the road to the south-east (Goodall 2001; Plate 2), but it is apparent that there were other, more *ad hoc*, stores of ore in other locations too – such material was apparently found beneath the building on the opposite side of the road during rebuilding, and similar scars where ore has been stacked against buildings are evident at the Duddon furnace (D Elsworth pers. obs.). However, it is worth noting that there had previously been an extension to the south end of the charcoal barns, that was demolished in the late 19th century (Goodall 2001, 14) and it is conceivable that this was in fact actually another ore store (rather than a charcoal barn), that it was later used as an ore store, or even that once it was demolished ore was dumped on the site. It is apparent, however, that the bank of material at Newland has been subject to considerable disturbance due to the dumping of and probable attempts to bury rubbish within it, which has obscured any evidence for the earlier building: no evidence for the original floor or walls of the building was uncovered for example, but it is likely that the excavation was not deep enough to have uncovered these.

5.1.2 The available dating evidence from the watching brief, with the exception of the modern rubbish, suggests that the ore heap was of primarily 19th century construction, or at least that it was last used in the 19th century. This perhaps fits with the documentary evidence, which indicates that Newland held a considerable stockpile of ore in its final years at the end of the 19th century.

5.2 Conclusion

5.2.1 The watching brief adds some additional information to the understanding of activity around the site of Newland Furnace, which has been subject to a number of small investigations in recent years. Such contributions are best considered collectively in the context of answering specific questions about the site as a whole.

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Appendix 1: Project Design

FORMER CHARCOAL BARN, NEWLAND, ULVERSTON, CUMBRIA

Archaeological Watching Brief Project Design



Client: Mr and Mrs McDermot

Planning Application Ref: SL/2009/0752 and SL/2009/0753

Scheduled Monument Consent Ref: S00005062

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April 2010

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Client: Mr and Mrs McDermott

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1. Introduction

1.1 Project Background

1.1.1 Following the submission of a planning application (Ref. SL/2009/0752 and SL/2009/0753) for the conversion of part of the former Charcoal Barn, at Newland, Ulverston, Cumbria (NGR 329956 479724) a condition was placed by English Heritage on the Scheduled Monument consent (Ref. S00005062) requiring a programme of archaeological work to be undertaken. As the building is adjacent to the Scheduled Monument area for Newland Furnace it is considered to be of national importance.

1.1.2 The Furnace was built in 1746-7 by Richard Ford and his associates, who became known as the Newland Company (Goodall 2001). The enterprise expanded throughout the late 18th and early 19th century with the addition of associated structures elsewhere in the Newland valley and the company also owned a further furnace at Bonawe in Scotland (*ibid*). By the second half of the 19th century it had become amalgamated with several other associated enterprises controlled by Harrison Ainslie and Company (*ibid*). The furnace went out of use in 1891 and quickly fell into disrepair, although many of the associated buildings found other uses. The building being redeveloped formed part of a range of barns used to store charcoal used in the furnace; the initial phase, built as part of the original iron furnace complex in 1746-7, was constructed against the slope and parallel to the road, with subsequent additions being made into the late 19th century (Bowden 2000, 63).

1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have a combined total of over 18 years continuous professional experience working in commercial archaeology, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Institute for Archaeologists' (IfA) Code of Conduct. The watching brief will be carried out according to the Standards and Guidance of the Institute for Archaeologists (IfA 2008).

1.3 Project Staffing

1.3.1 The project will be managed by **Dan Elsworth (MA (Hons), AIFA)**. Daniel graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has recently managed a wide variety of projects including building recordings of various sizes, watching briefs, and excavations. He also carried out the recording of the former Newland Corn Mill (Greenlane Archaeology 2009a) and managed the archaeological work carried out on the Furnace Garage, Newland (Greenlane Archaeology 2009b), and has worked on industrial sites of various periods and types.

1.3.2 The watching brief will be carried out by **Sam Whitehead (BSc (Hons); MA)**. Sam graduated from the University of Liverpool in 1994 with an honours degree in Archaeology, and has more than 10 years professional experience in commercial archaeology, much of which was in a supervisory capacity. He has extensive experience of excavations, evaluations, and watching briefs, as well as report writing and illustration production. Recent relevant projects include a watching brief at Fox Street, Preston, which revealed industrial remains associated with the canal and tramway (Greenlane Archaeology 2009c), and evaluations at Upper Brook Street, Ulverston (Greenlane Archaeology 2007a), Collin Croft, Kendal (Greenlane Archaeology 2007b), and a large evaluation and excavation at 130-136 Stricklandgate, Kendal (Greenlane Archaeology 2008a; 2008b).

1.3.3 All artefacts will be processed by Greenlane Archaeology, and it is envisaged that they will initially be examined by Jo Dawson, who will fully assess any of post-medieval date. Finds of earlier date will be assessed by specialist sub-contractors as appropriate, and in this case it is envisaged that medieval pottery will be examined by Ian Miller at Oxford Archaeology North. English Heritage will be notified of any other specialists, other than those named, who Greenlane Archaeology wishes to engage, before any specialist contracts are awarded, and their approval will be sought.

1.3.4 Environmental samples and faunal remains, should significant deposits of these be recovered, will be processed by Greenlane Archaeology. It is envisaged that charred plant remains will be assessed by Scott Timpany of Headland Archaeology Ltd, and significant faunal remains by Steve Rowland or Andy Bates, both at Oxford Archaeology North. English Heritage will be informed and their approval will be sought for these arrangements.

2. Objectives

2.1 Watching Brief

2.1.1 To identify any surviving archaeological remains and to investigate and record any revealed archaeological remains or deposits.

2.2 Report

2.2.1 To produce a report detailing the results of the watching brief.

2.3 Archive

2.3.1 Produce a full archive of the results of the watching brief.

3. Methodology

3.1 Watching Brief

3.1.1 Any groundworks under undertaken that are liable to affect elements of the Scheduled Monument area are to be monitored, with one archaeologist on site.

3.1.2 The watching brief methodology will be as follows:

- Groundworks such as foundation trenches or trenches for services will be excavated by machine under supervision by staff from Greenlane Archaeology;
- All deposits of archaeological significance will be examined by hand if possible in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. If possible, negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include detailed plans and sections at a scale of 1:20 or 1:10 where practicable or sketches where it is not, and photographs in both colour print and colour digital format;
- All deposits, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;
- All finds will be recovered during the watching brief for further assessment as far as is practically and safely possible. Should significant amounts of finds be encountered an appropriate sampling strategy will be devised;
- All faunal remains will also be recovered by hand during the watching brief as far as is practically and safely possible, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have preserved environmental remains will be sampled. Bulk samples of between 10 and 40 litres in volume, depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist sub-contractors (see *Section 1.3.4* above), who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;
- Any human remains discovered during the watching brief will be left *in situ*, and, if possible, covered. English Heritage will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will require a Home Office licence, under Section 25 of the Burial Act of 1857, which will be applied for should the need arise;
- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and secured stored off-site, or covered and protected on site if immediate removal is not possible;

- Should any significant archaeological deposits be encountered during the watching brief these will immediately be brought to the attention of English Heritage so that the need for further work can be confirmed. Any additional work and ensuing costs will be agreed with the client and according to the requirements of English Heritage, and subject to a variation to this project design.

3.3 Report

3.3.1 The results of watching brief will be compiled into a report, which will include the following sections:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the watching brief including descriptions of any deposits identified, their extent, form and potential date, and an assessment of any finds or environmental remains recovered during the watching brief;
- Discussion of the results, with specific reference to their relationship with elements of the associated iron furnace;
- Bibliography;
- Illustrations at appropriate scales including:
 - a site location plan related to the national grid;
 - a plan showing the location of the site in relation to nearby structures and the local landscape;
 - copies of early maps, plans, drawings, photographs and other illustrations of elements of the site, as appropriate;
 - a plan showing the location of the ground works;
 - plans and sections of the watching brief ground works, as appropriate, showing any features of archaeological interest;
 - photographs of the watching brief, including both detailed and general shots of features of archaeological interest and the trenches;
 - photographs of individual artefacts as appropriate.

3.4 Archive

3.4.1 The archive, comprising the drawn, written, and photographic record of the watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the Cumbria Record Office in Barrow-in-Furness (CRO(B)). The archive will be compiled according to the standards and guidelines of the IfA (Brown 2007), and in accordance with English Heritage guidelines (English Heritage 1991). In addition details of the project will be submitted to the Online Access to the Index of archaeological investigations (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.4.2 A copy of the report will be deposited with the archive at the Cumbria Record Office in Barrow-in-Furness, one will be supplied to the client, and within six months of the completion of fieldwork, a digital copy will be provided to Andrew Davison at English Heritage. In addition, a digital copy will be provided for the Cumbria Historic Environment Record (HER), Greenlane Archaeology Ltd will retain one copy, and digital copies will be deposited with the NMR and OASIS scheme as required.

3.4.3 The client will be encouraged to transfer ownership of the finds to a suitable museum. Any finds recovered during the watching brief will be offered to Kendal Museum. If no suitable repository can be found the finds may have to be discarded, and in this case as full a record as possible would be made of them beforehand.

4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project on **14th April 2010**, or at another date convenient to the client. It is envisaged that the project will involve tasks in the following order:

- **Task 1:** : watching brief;
- **Task 2:** post-excavation work on archaeological watching brief, including processing of finds and production of draft report and illustrations;
- **Task 3:** feedback, editing and production of final report, completion of archive.

5. Other matters

5.1 Access

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s).

5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£500,000**. Details of this can be supplied if requested.

5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally- and ethically-sound working practices. Its office is supplied with 100% renewable energy by Good Energy, uses ethical telephone and internet services supplied by the Phone Co-op, is even decorated with organic paint, and has floors finished with recycled vinyl tiles. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

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Appendix 2: Summary Context List

Context	Type	Description	Interpretation
100	Deposit	Thin black gravel stained with coal dust and containing modern rubbish	Dumped deposit along edge of track
101	Deposit	Mid brown stoney soil, up to 0.4m thick	Dumped deposit
102	Deposit	Haematite stained gravel deposit but mixed with modern rubbish, up to 1.2m thick	Dumped deposit
103	Deposit	Loose pink haematite rich gravel containing glassy slag, 0.2m thick	Remains of iron ore dump

Appendix 3: Summary Finds List

Context	Type	Qty	Description	Date range
100	Pottery	4	White earthenware: plain plate rim and body, Mayfield transfer-printed plate rim, and Broseley transfer-printed body fragment	19 th century
100	Fe	1	Clog iron (corroded)	Post-medieval
103	Pottery	2	Black-glazed red earthenware coarseware	Late 17 th – early 20 th century
103	Pottery	3	White earthenware: factory-produced slipware bowl rim (lined), mulberry Chinoiserie transfer-printed pattern (enamelled/clobbered), and brown transfer-printed hollow-ware fragment	19 th century
103	Pottery	1	Willow transfer-printed pattern base fragment marked '[S]TO[NE CHINA (?) / ~ I W ~'	1824-1804
U/S (surface)	Glass	3	Very light turquoise window pane fragments x 2, bottle fragment x 1	19 th century?
U/S (surface)	Pottery	2	White earthenware hollow-ware body fragments with Broseley transfer-printed pattern	19 th century
U/S (surface)	Pottery	6	Bone china: saucer (?) fragments x 4, enamelled plate rim fragment with transfer-printed enamelling with news-print style stippling, and Willow transfer-printed saucer (?) rim, with gilded lines	19 th – 20 th century