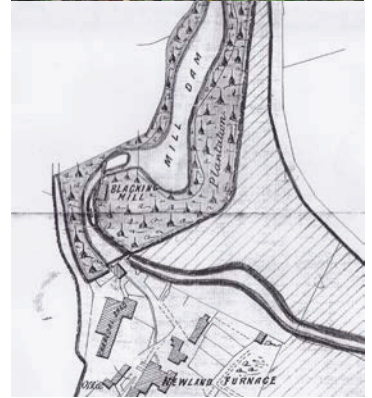
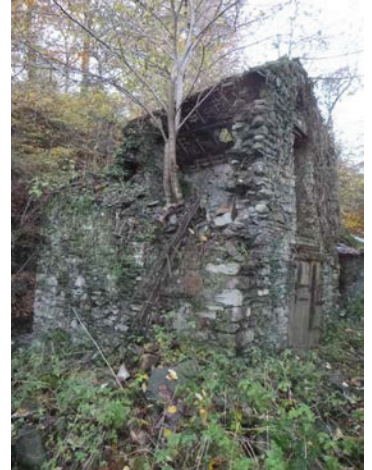


FORMER BLACKING MILL, NEWLAND, ULVERSTON, CUMBRIA

Heritage Assessment



Client: Tape Design

NGR: 329879 479797

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Summary

Prior to the submission of a planning application for the redevelopment of a pair of buildings making up a former Blacking Mill at Newland, near Ulverston, Cumbria, and following consultation with South Lakeland District Council, Greenlane Archaeology was commissioned to carry out a heritage assessment of the site. This was intended to establish at an early stage whether there were likely to be any sites of archaeological interest within the proposed development area and assess how these sites might be affected by the proposed redevelopment work. The work for the project, including a site visit, was carried out in November 2016.

The standing buildings at the site comprise the remains of a former blacking mill, now in a ruinous condition, associated with the Newland blast furnace. The furnace was built in 1746-7 by Richard Ford and his associates, who became known as the Newland Company. Elements of the northern block of buildings to be redeveloped had already been built by 1812 and the southern block was built during the early-to-mid-19th century.

The heritage assessment collated the available information relating to the former blacking mill buildings, which probably originated as a rolling mill associated with the furnace in 1799, and did not become a blacking mill until at least the mid-19th century. The history of the blacking mill is not well understood but the details of some of the occupiers are recorded as are details of a number of catastrophic fires that affected the site in the 1840s and later. It remained in use into the late 19th century before becoming a saw mill. It was subject to an extensive survey by English Heritage, published in 2001, having been previously photographed by Mike Davies-Shiel in 1979, but it is clear from the available historical information and from a site visit, that there is much that could be learnt by further investigation. As it is likely that the proposed development would have some impact on the surviving fabric of the building, both standing and below ground, it is recommended that further archaeological recording should be carried out as part of the work. This would provide an important opportunity towards the further understanding of the building.

Acknowledgements

Greenlane Archaeology would like to thank Tape Design for commissioning the project, in particular Rob Glass for his help during the project. Further thanks are due to the staff of the Cumbria Archive Centre in Barrow-in-Furness (CAC(B)) and the Lancashire Record Office (LRO) in Preston for help with accessing their archives, and Jeremy Parsons at the Historic Environment Service at Cumbria County Council, for providing information held in the Cumbria Historic Environment Record.

The project was managed by Dan Elsworth, who also carried out the heritage assessment and site visit, and wrote the report with Tom Mace, who produced the illustrations. The final report was edited by Jo Dawson.

1. Introduction

1.1 Circumstances of the Project

1.1.1 Prior the submission of a planning application for the redevelopment of the former blacking mill buildings at Newland, near Ulverston, Cumbria (NGR 329879 479797), and following consultation with South Lakeland District Council, it was recommended that a heritage assessment be compiled for inclusion with the application. In response to this Greenlane Archaeology produced a project design and were subsequently commissioned by Tape Design (hereafter 'the client') to carry out the work, which was undertaken in November 2016.

1.1.2 The site comprises a number of elements including and associated with the Newland blast furnace and is situated within the Scheduled Monument area for the same (No. 34986). 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 (*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 outbuildings found other uses. The standing buildings at the site comprise the remains of a former blacking mill, now in a ruinous condition.

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 valley formed by Newland Beck (Figure 1). The former blacking mill is approximately 150m north-west of the Newland blast furnace and is part of the Scheduled Monument area. The two buildings making up the site comprise the north block, the former blacking mill (formerly a rolling mill), now an approximately square roofless structure with numerous sub-divisions, and the south block, which comprised a cart shed, stable, and warehouse (Goodall 2001, figure 13) and now comprises a rectangular building with elements of its roof surviving.

1.2.2 The site lies at approximately 30m above sea level (Ordnance Survey 2011). The main road into the area, the A590, is approximately 280m 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).

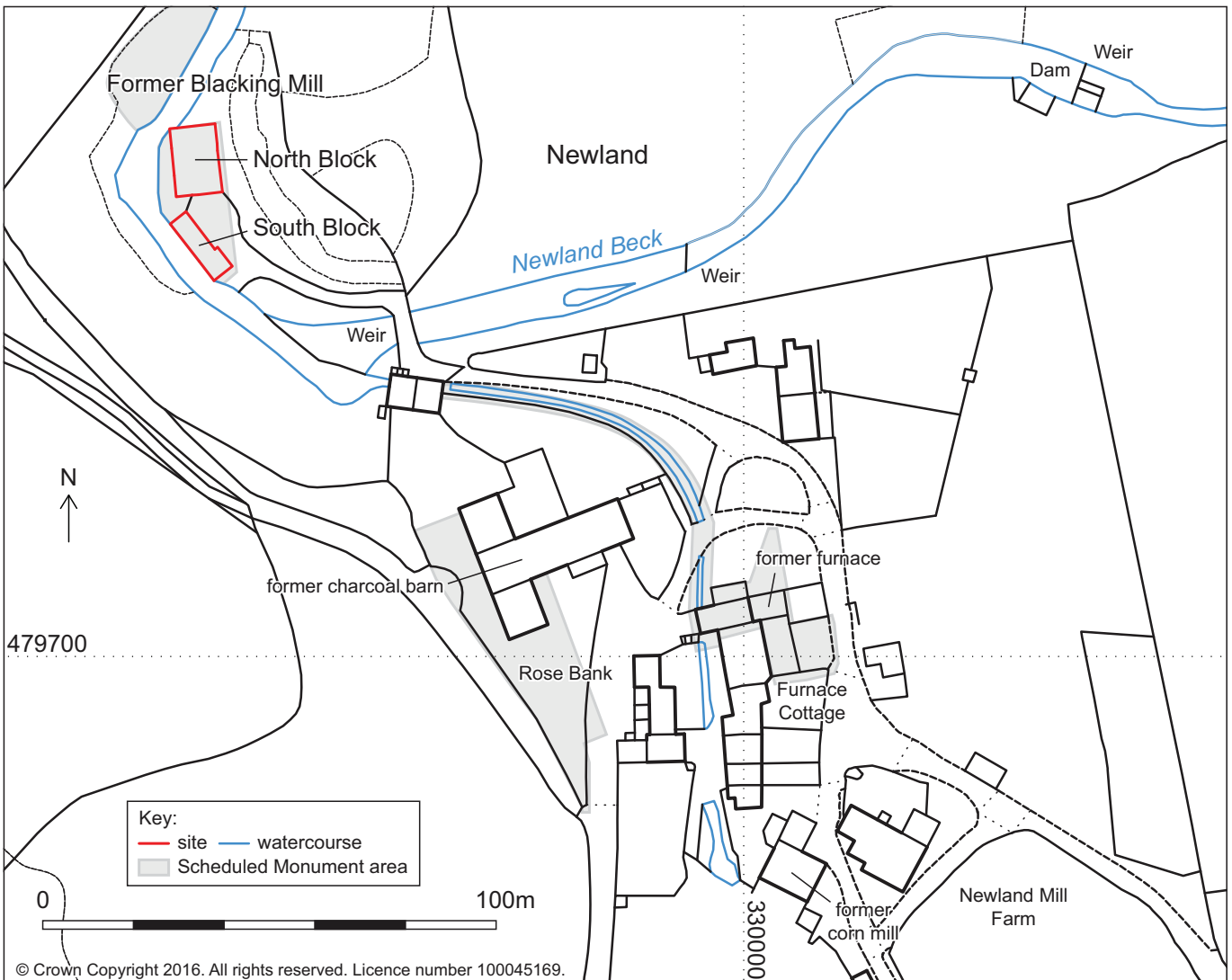
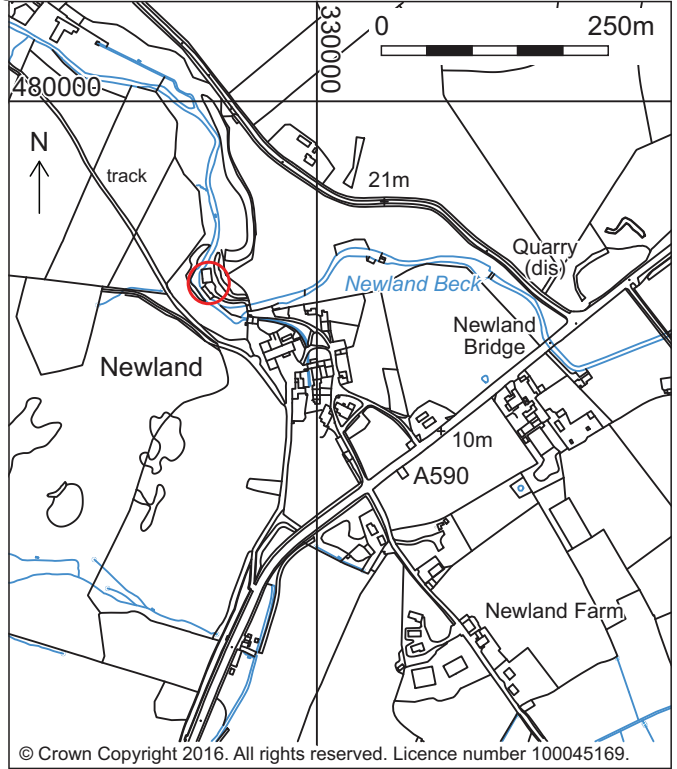
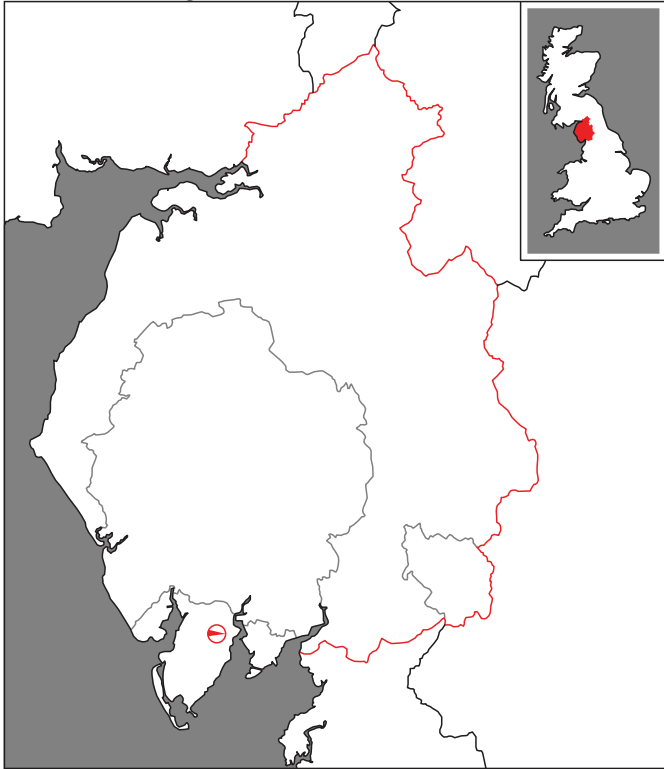


Figure 1: Site location

2. Methodology

2.1 Heritage Assessment

2.1.1 The study area for the heritage assessment was restricted to just the two buildings (the north and south blocks) making up the former blacking mill, which comprised a combined total area of approximately 200m². Information relating to the immediate vicinity was also taken into consideration, but the only other historic sites of interest within this area were those relating to or forming part of the Newland furnace complex. The heritage assessment was carried out in accordance with the relevant guidelines of the Chartered Institute for Archaeologists (CIfA 2014). This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used during the heritage assessment, although much of this information had already been acquired during previous phases of work carried out in Newland:

- **Cumbria County Council Historic Environment Record (HER):** this is a list of all the known sites of archaeological interest within the county (excluding the Lake District National Park, which has a separate list maintained by the Lake District National Park Authority) and is the primary source of information for an investigation of this kind. The data for all known sites recorded in the HER within the study area was obtained from the HER and in addition unpublished reports of previous archaeological investigations of the site were examined;
- **Cumbria Archive Centre, Barrow-in-Furness (CAC(B)):** the majority of original and secondary sources relating to the site are deposited in the Cumbria Archive Centre in Barrow-in-Furness. Of principal importance are early maps of the site. These were examined in order to establish the development of the site, date of any structures present within it, and details of land use. In addition, any details of the site's owners and occupiers were acquired where available;
- **Cumbria Archive Centre, Kendal (CAC(K)):** this was visited in order to examine early maps and plans of the site, and local and regional histories;
- **Historic England:** information compiled by Historic England, in particular a detailed study of the whole of the Newland furnace complex (Goodall 2001), was consulted;
- **Lancashire Record Office (LRO):** the enclosure map of 1823, which is held in the Lancashire Record Office in Preston, was also examined;
- **Greenlane Archaeology library:** additional secondary sources and unpublished reports were examined to provide information for the site background.

2.2 Site Visit

2.2.1 A brief site visit, equivalent to an English Heritage Level 1 survey (English Heritage 2007), was carried out covering the proposed development area and other areas that might be affected. Particular attention was paid to the identification of features of historical or archaeological interest, but other relevant features were recorded such as later aspects of the site that may have impacted on the earlier remains or could constrain further investigation. Colour digital photographs showing the general arrangement of the site and any features of interest were taken.

2.3 Archive

2.3.1 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 following the completion of the project. A copy of this report will be provided for the client and a copy will be retained by Greenlane Archaeology. In addition, at a suitable time a digital copy will be provided for the Cumbria County Council HER, and a record of the project will be made on the OASIS scheme.

3. Results

3.1 Introduction

3.1.1 The site comprises a pair of buildings, which form part of a much larger complex of buildings relating to the operation of the Newland iron furnace. The only other sites of archaeological interest within the immediate vicinity of it form part of the same complex.

3.2 Heritage Assessment

3.2.1 The results of the heritage assessment have been used to produce two main elements. Firstly all available maps of the area were compiled into a map regression, demonstrating how the site physically developed (*Section 3.3*). The second purpose of the heritage assessment is to produce a background history of the site. This is intended to cover all periods, in part to provide information that can be used to assess the potential of the site, but more importantly to present the documented details of any sites that are known (see *Section 4*).

3.2.2 Once this information has been compiled the significance of those sites of archaeological interest within the study area, their potential, and the degree to which they are likely to be affected is considered (*Section 5*) and from this a discussion of the nature of mitigation works has been produced.

3.3 Map and Image Regression

3.3.1 **Introduction:** although there are early, typically county-wide, maps that include the area, they are generally very small scale and so the first useful maps of the area do not appear until the early 19th century. As a result, it is primarily maps from that date onwards that are discussed below.

3.3.2 **Estate plan of c1804:** this early and relatively detailed plan had unfortunately misplaced in the archive and so could not be examined, although it was examined as part of the previous work at the former corn mill in Newland. It is therefore not clear whether it shows any of the former blacking mill buildings (CAC(B) BD/BUC/49/Bundle 1/16 c1804). It is undated but has a watermark of 1804 so cannot be earlier than this date.

3.3.3 **Ulverston Commons Enclosure map of 1812:** this plan (Plate 1; Ulverston Local Board 1891), which was primarily intended to show the extent of the Ulverston commons enclosure, shows some elements of Newland, although it is not complete and seems to only show those structures that fall wholly or partially on the Ulverston side of the parish boundary and in a very simplified way. The square building is evidently the northern block of the two buildings making up the former blacking mill, whereas the southern block is not depicted.

3.3.4 **Egton with Newland Commons Enclosure 1823:** this plan (LRO AE/4/5 1823; Plate 2) is generally remarkably similar to that of c1804 (CAC(B) BD/BUC/49/Bundle 1/16 c1804) and it seems likely that one is based on the other (as the estate plan of c1804 is undated it is perhaps likely that it is copied from the enclosure map, especially as it seems more likely that the enclosure map would be based on an original survey, but this would mean that the paper used for the estate plan was almost 20 years old). Only the south end of the south block is shown, suggesting that this was built before the rest of it. The plot is numbered 426, which at the time was owned by Elizabeth Duchess of Buccleuch.

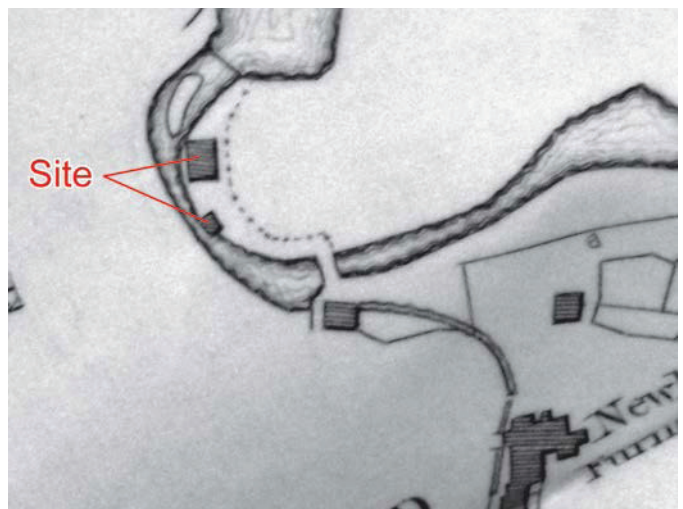
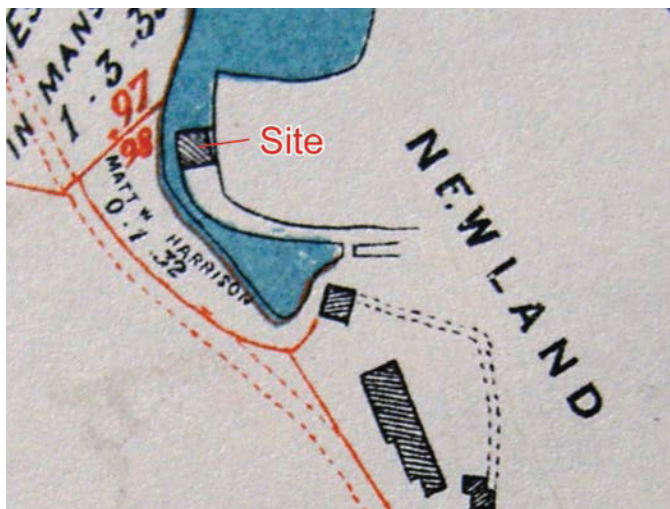


Plate 1: Extract from the Ulverston commons enclosure map of 1812 showing Newland

Plate 2: Extract from the Egton with Newland enclosure map of 1823

3.3.5 **Undated estate plan (probably mid-19th century)**: this is a detailed plan of the site (Plate 3; CAC(B) BD/BUC/Box 40/Bundle 2/58 nd) and, although undated, is considered likely to be mid-19th century (see Goodall 2001, figure 2). It is particularly useful because it names various elements of the site, but it also shows the development of the site since the previous map. Both blocks of buildings at the blacking mill site are shown and the one to the north is clearly named as such. No internal divisions are marked.

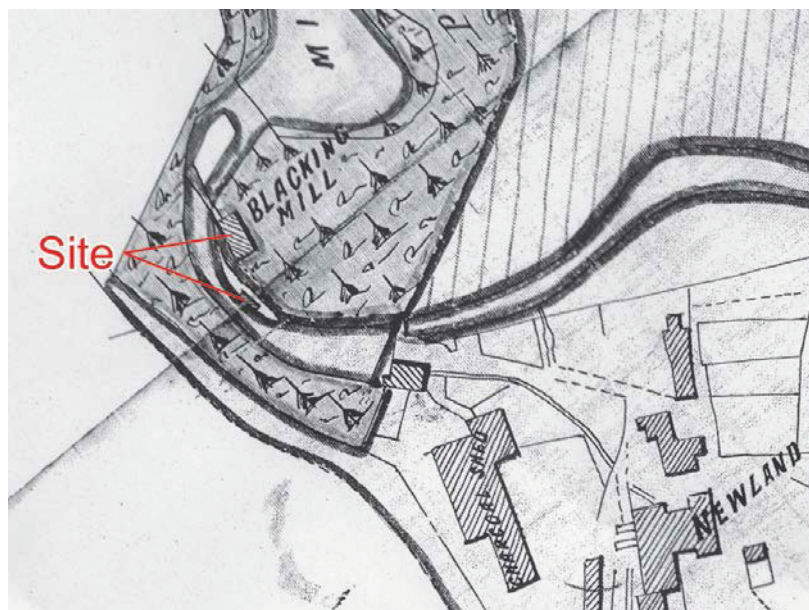


Plate 3: Extract from an undated estate map, probably mid-19th century, showing various elements associated with the furnace

3.3.6 **Ordnance Survey 1851**: this plan clearly shows the two blocks of buildings at the blacking mill site (Plate 4).

3.3.7 **Ordnance Survey 1890**: this more detailed map shows the same layout to that in 1851, although the block to the south is divided into two with an approximately square block demarcated at the south end (Plate 5).



Plate 4 (left): Extract from 1851 Ordnance Survey



Plate 5 (right): Extract from 1890 Ordnance Survey

3.3.8 **Photographs, c1900:** two early photographs of the site are known to exist, both probably dated c1900. One shows the raised timber launder and water wheel attached to the west side of the main blacking mill building (the north block) with the smaller building in the distance (CAC(C) WDMDS/PC/16/9 nd), while the other shows the launder as it comes across the Newland Beck from the north-west (CAC(C) WDMDS/PC/16/5 c1900). The former shows the west elevation of the north block, although it is mainly obscured by the wheel and launder, although it also shows that the south block is gabled at the north-west end. Drawings based on these two photographs were reproduced in the 2001 survey (see Plate 9 below) but for copyright reasons they have not been included in this report.

3.3.9 **Plan 1904:** this plan (CAC(B) BDHJ/184/7/1 1904; Plate 6) has probably been hand drawn from the 1890 Ordnance Survey map and has been simplified slightly (cf. Plate 5).

3.3.10 **Ordnance Survey 1913:** the layout of the buildings is apparently unchanged, but this is the first map to label it as a saw mill as opposed to a blacking mill (Plate 7).



Plate 6 (left): Extract from 1904 indenture plan



Plate 7 (right): Extract from 1913 Ordnance Survey

3.3.11 **Photographs, 1979:** two photographs of the buildings, taken by Mike Davies-Shiel in September 1979 are present in the archives (CAC(C) WDMDS/PC/16/6 1979; CAC(C) WDMDS/PC/16/7 1979). These demonstrate that the two blocks were in a similar condition at that time to what they are now, although the south-east end of the south block still had its entire roof and the north block was not quite as overgrown as it now is. For copyright reasons these have not been included in this report.

3.3.12 **Survey report, 2001:** a section and exploded view of the roof structure of the stable associated with the blacking mill and plans of the blacking mill and associated buildings were produced as part of an English Heritage survey of the site, which was visited in 1997 (Goodall 2001, figures 13 and 15; Plate 8; Plate 9). These were accompanied by sketches based on old photographs of the launder and blacking mill (Goodall 2001, figure 13; Plate 9).

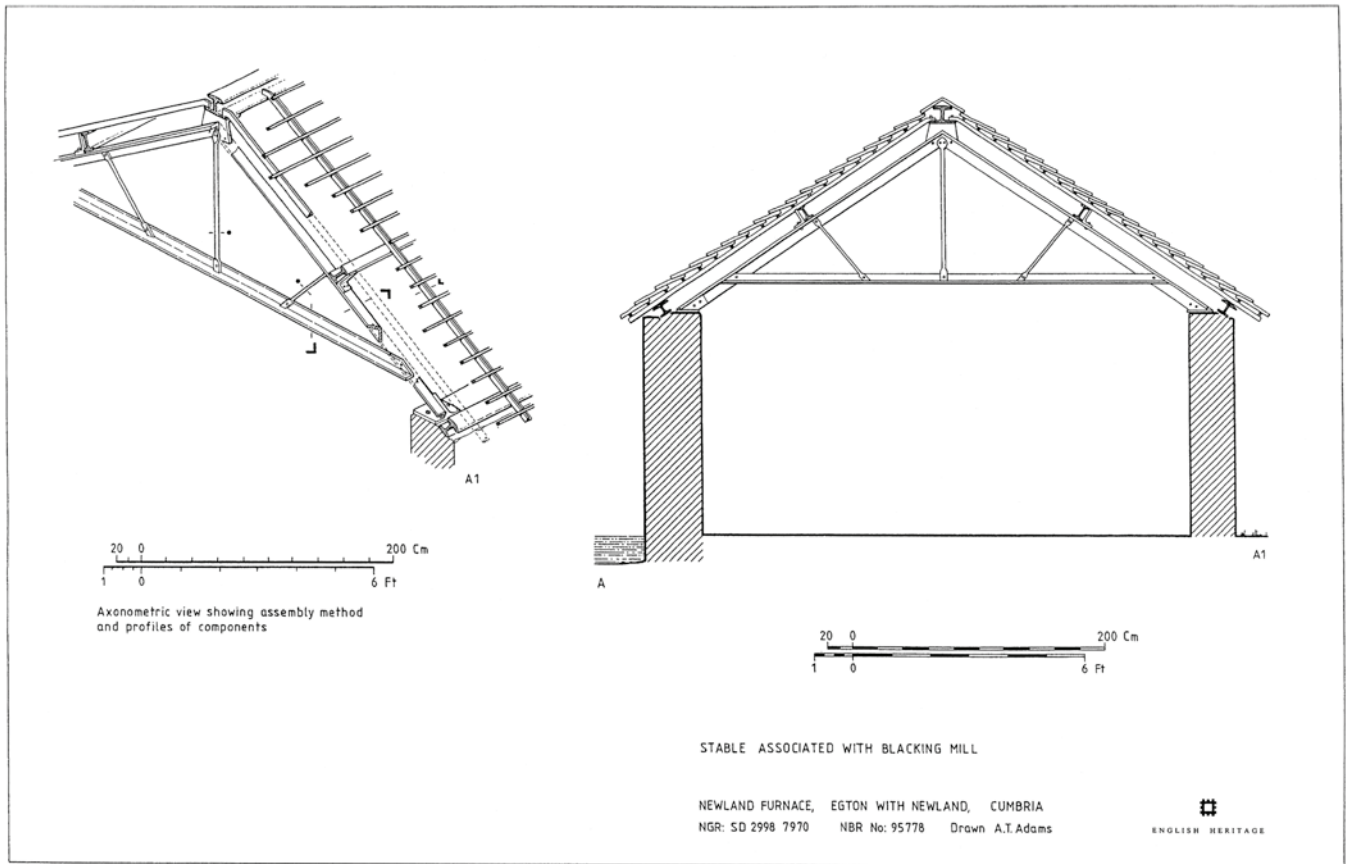


Plate 8: Stable associated with blacking mill (Goodall 2001, figure 15)

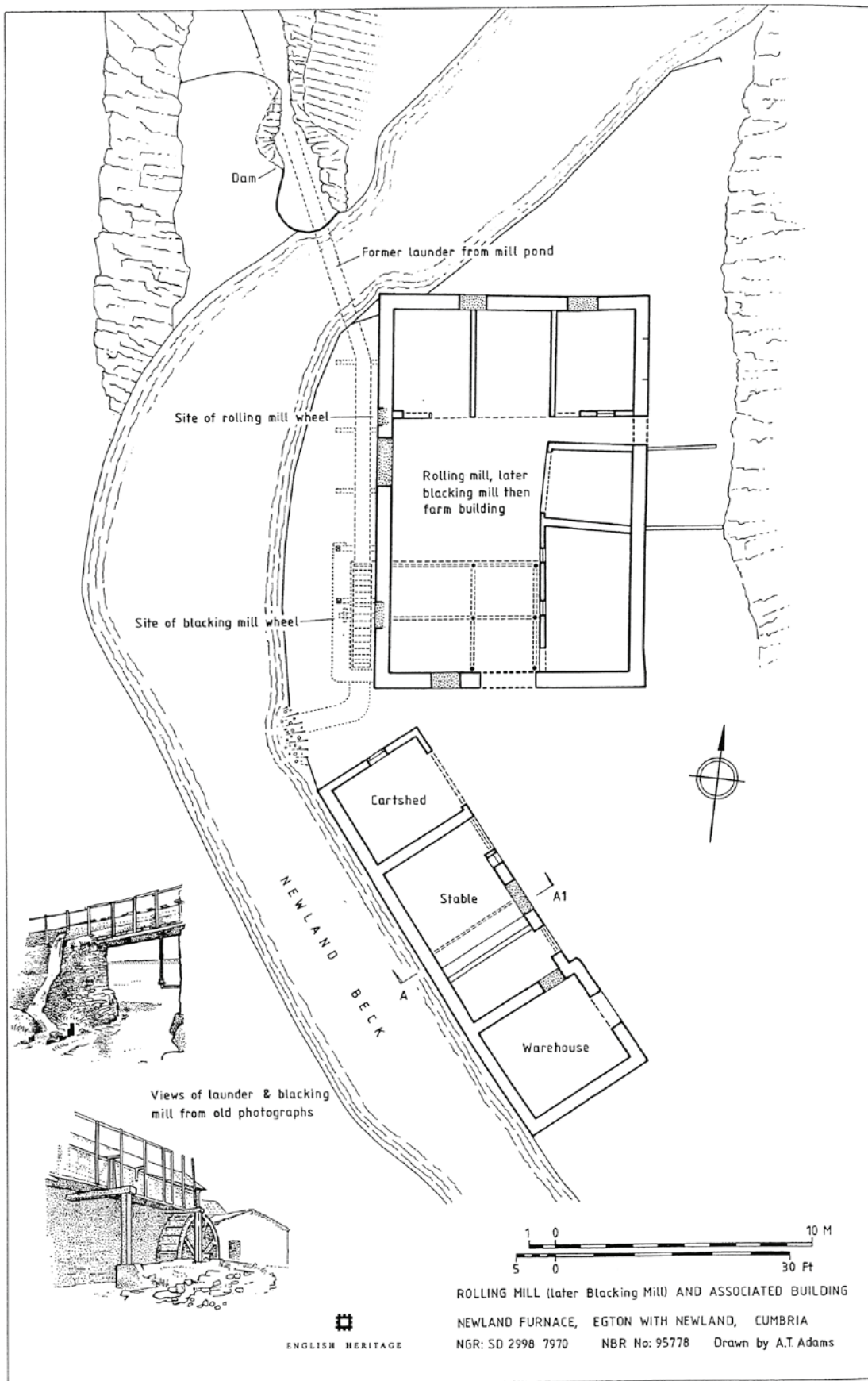


Plate 9: Blacking mill and associated buildings. Ground floor plan and sketches (Goodall 2001, figure 13)

3.3.13 Summary: it is evident from the cartographic sources that the buildings at the blacking mill site had taken on much of their present form by at least the mid-19th century. Before that time the maps are insufficiently detailed to be certain which elements of the remaining structures were present. It is apparent, however, that parts of the extant structures, probably including elements relating to the northern block, were built before 1812, which correlates with the known history of the site (see *Section 4.1.9* below). The south end of the southern block was built between 1812 and 1823. The rest of the southern block was built at some point after that during the early-to-mid-19th century, and maps from 1890 onwards generally show a subdivision at the south end relating to the earlier part. The basic footprint of the buildings has remained largely unchanged since, although the internal arrangement is probably different and it is now ruinous and has been since at least 1979.

3.4 Site Visit

3.4.1 Site Arrangement and Character: the site still comprises two distinct blocks although both are ruinous and only partially roofed. The north block is square and orientated essentially north/south with the Newland Beck against its west side (Plate 10), while the south block is rectangular and orientated north-west/south-east, the south-west side against the beck. The north block has been sub-divided internally with concrete block and stone walls (some of which may contain original elements) and corrugated sheet roofing to make internal spaces along the north, south, and east sides (Plate 11 to Plate 13), while the centre remains open, effectively as a yard. The south block is divided into three main sections, the north-west is single storey, largely brick built and perhaps a later extension (Plate 14), the centre is also single storey and in poor condition with the iron rail structure of the roof exposed (Plate 14 and Plate 15), while the south-east end is two stories but is in poor condition with a large part of its roof missing and any internal floors and associated structure collapsed (Plate 15 and Plate 16). Both structures show various phases of alteration and development, with numerous blocked openings and rebuilt sections visible, several of which incorporate bricks and re-used furnace lining bricks.



Plate 10 (left): The north elevation of the north block showing blocked openings and Newland Beck to the west, viewed from the north-east



Plate 11 (right): The east elevation of the north block showing areas of alteration, viewed from the north-east



Plate 12 (left): Later rebuild along the east side of the north block, viewed from the north-east

Plate 13 (right): Concrete block walls added to the interior of the north block, viewed from the south



Plate 14 (left): The north-west end of the north-east elevation of the south block, viewed from the east

Plate 15 (right): The south-east end of the north-east elevation of the south block, viewed from the east



Plate 16: The two-storey south-east end of the south block, viewed from the east

3.4.2 **Constraints:** above all, the site visit demonstrated the poor condition the buildings are in and precarious location, which would be a major constraint to any further archaeological work taking place on site. This is particularly evident in the south-east end of the south block, where the roof is actively collapsing in two locations in part due to a tree growing through the building (Plate 17), but also at the north-west corner of the north block, where there is a danger of the wall collapsing into the beck (Plate 18).



Plate 17 (left): The badly damaged south-east end of the south block, viewed from the south

Plate 18 (right): The collapsing north-west corner of the north block, viewed from the north-east

4. Site History

4.1 Background History

4.1.1 The background history to the site helps our understanding of the development and use of the site, where known, making use of the map evidence presented above (see *Section 3*) where relevant. The background to the site is intended to place the results of the project in its local context and in order to do so a brief discussion of the earlier history of its wider environs is also necessary.

4.1.2 **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).

4.1.3 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 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).

4.1.4 **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 it was subsequently taken into the ownership of the crown before being sold in 1662 (Davies-Shiel 1978, 111).

4.1.5 **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).

4.1.6 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 forge was contained within the old corn mill to the south of the furnace (Greenlane Archaeology 2009a). 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 19) is likely to relate to this, as is the presence of the brick flue in the 'garage' (*ibid*).

4.1.7 These alterations were not enough to save the struggling enterprise. 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 sublet part of the site to Thomas Thompson (Goodall 2001, 8). The property included the corn mill, Newland House and garden, five cottages with gardens, the joiner's shop and the iron furnace, which was by that time in ruins (CAC(B) BD/BUC/43/8/22 1904).



Plate 19: Newland Furnace c1897 shortly after its closure (Anon 1897)

4.1.8 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*; CAC(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 (CAC(B) BD/BUC/17/42 1921-25). Elements of the furnace complex appear to have carried on in use as a joiner's workshop after the closure of the furnace (as is evident in Plate 19) and remained in reasonably good condition long after the furnace stack had become ruinous. Parts of the site were also used as a commercial garage after the Second World War (Helme 1994, 13).

4.1.9 **The Blacking Mill:** the origins of the former blacking mill are complex but it has conversely seen slightly more limited study than the iron furnace, which might explain this discrepancy. However, a detailed article about the Newland Valley as a whole does provide a considerable amount of information (Helme 2002; based on information published by Jonathan Wignall). The site is thought to have actually originated as a rolling mill, built to serve the furnace in 1799, used to produce thin iron sheets and bars, and said to have been the first and only one in the district (Goodall 2001, 4 and 16). Although its location is not known with certainty, as with many other elements of the wider furnace complex, it is considered likely to have been the northernmost building of the two structures under consideration (*ibid*). It has been suggested that this structure was actually the site of a forge (Helme 2002, 19), known to have been established at Newland in 1783 (Fell 1908, 217) and in use until 1807 (Goodall 2001, 4). This is considered unlikely however (*ibid*), and recent evidence suggests the forge was more likely to have been housed within the former corn mill (Davies-Shiel 2008; Greenlane Archaeology 2009a).

4.1.10 What is certain is that it was subsequently used as a blacking mill – for grinding charcoal to make a fine powder used as a coating for iron foundry moulds, and later for shoe blacking, and in water filters – before being used as a saw mill, and then a piggery, and eventually becoming ruinous (Goodall 2001,

4 and 16). The exact dating of this sequence of changes is not clear, although the map evidence demonstrates that it had been converted to a blacking mill by at least the mid-19th century (see *Section 3.3*), and became a saw mill between 1904 and 1910. The situation is also somewhat confused by the presence of another blacking mill at nearby Newland Bottom (Helme 2002, 21). Relatively little is known about the blacking mill at Newland proper; it is recorded as having been burnt out by fire in 1844 and 1849 (*op cit*, 5; an account of the fire of 1844 states that it was at that time in the occupation of John Parker and that the building was nearly destroyed, 'with the exception of the water wheel' (Westmorland Gazette 9th November 1844), but this is clearly a description of the mill at Newland Bottom rather than at Newland). It was subsequently tenanted by William Jackson in 1849 (Helme 2002, 20) before he retired and it was leased from Harrison Ainslie and Co to William Swainson in 1862 (Goodall 2001, 5). This lease is of considerable interest as it describes the blacking mill as comprising:

'All that Blacking Mill with the Bray house outbuildings Troughs Water Wheel Shafts Head Stock Framing and premises attached and a Dwelling House adjoining the said Bray House situate lying and being at Newland aforesaid as now occupied by William Jackson together with all and Singular Ways Waters Watercourses Weirs Rams [sic] Sluices Troughs Headgates Rights Priviledges and appurtenances whatsoever to the said Blacking Mill Dwelling house land and premises belonging to or in anywise of right appertaining' (ibid).

4.1.11 This lease ran for seven years from the 12th May at a rent of £50, although within it it apparently refers to a stable rather than a bray house, mentions the '*inside Machinery Gearing and Fittings*' of the mill, and states that Harrison Ainslie and Co would sell to Swainson spare charcoal from the furnace for use in the blacking mill or, if that was insufficient, provide it from their furnaces at Backbarrow or Duddon (*ibid*). The southern block is thought to have served as a cartshed, stable, and warehouse (*op cit*, figure 13; Plate 9), although its origins are even less certain, and it has been stated that there was a charcoal drying shed at the site (Wignall 1990). It is also suggested that the 'bray house' was where the charcoal was '*brayed into dust by some form of mortar and pestle*' (Helme 2002, 20). The mill was affected by fire again in 1869, causing £10 of damage, and in 1870 at which time it destroyed all of the charcoal and stopped the works for several days (*ibid*). It may have then been tenanted by James Whittam and continued in use until 1884, when '*the small building used for drying charcoal prior to grinding*' was destroyed by fire (*ibid*). Its successor is described as follows: '*Its slate roof appears traditional enough, but it is supported entirely on steel rails and rods with no timber whatsoever. An iron floor allowed charcoal to be dried by a fire below*' (*op cit*, 20-21). This is presumably a description of the central part of the southern block, the roof of which is supported by iron rails (see *Section 3.3.12* and Goodall 2001, 17), corresponding to the drying shed previously described by Wignall.

4.2 Previous Archaeological Work

4.2.1 A number of recent small pieces of work have been carried out in Newland, all of which add to the understanding of the blast furnace and its associated buildings:

- A Conservation Plan was carried out in 2003 for the iron furnace, which looked at the known historical development of the site and considered issues about its future development, conservation, and public display and interpretation (OA North 2003);
- A desk-based assessment and building recording prior to the conversion of the former corn mill at Newland was carried out by Greenlane Archaeology in May 2008 and a watching brief was carried out during associated groundworks between May 2008 and January 2009 (Greenlane Archaeology 2009a). The mill comprised the main building, with a corn drying kiln to the north, and the remains of a small outshut to the south-east. There was also originally another outshut to the west, perhaps a peat store. It is uncertain whether the existing mill building was built following the acquisition of the site by the Newland Company in 1746 or whether they remodelled an existing mill. Certainly the building was substantially remodelled, most likely in the late 18th or early 19th century. The watching brief identified some areas of interest in the land around the mill, including evidence for the location of iron ore dumps on the west side of the site. It also enabled a section cut through the head race and the structure of the wheel pit to be recorded. A number of finds were made, including fragments of millstones, presumably incorporated as building

material into the mill, a sandstone disc, perhaps part of one of the mill stones, and most significantly an iron tilt hammer head. The tilt hammer head recovered from the site and the documentary sources suggested that the mill did indeed incorporate the forge in some way.

- Greenlane Archaeology carried out a desk-based assessment and building recording of a garage attached to the former iron furnace at Newland in October 2008 and monitored the removal of its concrete floor and excavation of a new foundation trench in March 2009 (Greenlane Archaeology 2009b). The building was probably built sometime in the mid-19th century and is approximately square in plan. The watching brief revealed that the floor within the building comprised a make-up layer of slate rubble overlaid with concrete to the level of the ground on the north side of the building. The original floor was constructed from brick, and remains relating to a large flue connected to the furnace were also revealed. The building was perhaps most likely used as some type of workshop connected with the furnace, although there was no evidence to determine its function.
- Two phases of monitoring work were undertaken by Greenlane Archaeology as part of Scheduled Monument consent relating to the conversion of the former charcoal barn at Newland and later the erection of a steel framed solid fuel store on an adjoining piece of land. The first period of watching brief carried out in March 2013 entailed the monitoring the removal of part of a bank set against the south end of the charcoal barn (Greenlane Archaeology 2015). This revealed that, although it had been subsequently utilised as a location to dump and bury rubbish, the bank, which was in an area known to have originally had an extension to the charcoal barn on it, originated in part as a dump of haematite (iron ore), presumably intended for use in the nearby furnace. Finds recovered during the watching brief were of primarily 19th century date, which 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 further watching brief, which took place in October 2016, monitored the excavation of six pits located immediately to the south of the former charcoal barn, each of which was typically 1.3m by 1.3m in plan and between 0.5m and 1.1m in depth. In each pit a similar sequence of deposits was encountered: a surface layer of loose slate gravel, a layer of haematite-rich clay varying from 0.1m to 0.3m thick, and the natural clay geology. Only in the north-east corner was there any significant variation to this, where there was no haematite present but a thin layer of compacted gravel, perhaps bedding for a surface, and another thin deposit of dark grey clay instead. No finds were recovered, but based on the results of the previous watching brief it is likely that the layer of haematite related to a store of iron ore of probable 19th century date (Greenlane Archaeology 2016).

5. Discussion

5.1 Introduction

5.1.1 The discussion of the results of the heritage assessment and site visit is intended to determine the archaeological significance and potential of any known remains (above or below ground) and the potential of these remains and for any as yet unidentified remains being present. The system used to judge the significance of the remains identified within the development area, or those thought to have the potential to be present within the development area, is based on the criteria used to define Scheduled Monuments (DoE 1990, annex 4; *Appendix 1*). As the development area only comprises the two buildings making up the former blacking mill it covers a relatively limited area.

5.2 Significance

5.2.1 The entire site is located within the Scheduled Monument area for Newland Furnace, and is therefore considered to be part of a monument of national importance and is statutorily protected. The site is also located within the Conservation Area for Newland Furnace (SLDC 2009) and so is also considered significant at a local level and again protected.

5.3 Potential

5.3.1 At present the understanding of the historical development of the site is relatively limited despite it having been subject to a number of pieces of historical and archaeological investigation. There are still a number of areas of uncertainty regarding the detail of its various uses. This is in part because of the poor condition that the building is now in, and has been in for over 30 years, which has limited access, particularly to the interiors. Any proposed development of these structures, which would inevitably necessitate the clearance of both the interior of rubble and collapsed material and the exterior of vegetation, would therefore present a considerable opportunity to record the buildings in more detail giving great potential for further understanding. While the wider area contains archaeological remains ranging in date from the early prehistoric period onwards, the only known remains of archaeological interest in the immediate vicinity of the site are those associated with the iron furnace, and so there is limited potential to affect remains other than those that fall into that category.

5.4 Disturbance

5.4.1 The buildings are currently in a poor state of repair and so it is already likely that some historic fabric has been lost. In addition, before any detailed archaeological investigation could take place, the buildings would need to have been cleared of vegetation and collapsed material from the interior, and this is likely to lead to the further loss of fabric. Any clearance work would have to be undertaken safely and would therefore require the partial demolition of existing unstable walls, particularly the south block's eastern façade.

5.5 Impact

5.5.1 While the current outline proposals involve retaining and rebuilding the main walls of the buildings it is clear that there will have to be some alteration to these, even if only as a result of consolidation and making them safe and stable. In other areas the impact might be positive in that some more recent additions may have to be removed in order to facilitate the proposals, particularly in the north block. The most significant impact might be in the interior of the buildings where this might involve excavation through original floors or other levels, although these could perhaps be left *in situ* and built over, or the removal of original elements of the roofing.

5.6 Conclusion

5.6.1 It is apparent from the results of this assessment that while the former blacking mill is relatively well understood and has been recorded in some detail, there are still areas that are extremely uncertain and which would need to be more fully investigated in order to be better understood. The current proposal is designed to have a relatively minimal impact but there is still some potential, and a likelihood of, original fabric to being lost, and as such further recording would be necessary if the development were to go ahead.

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Appendix 1: Significance Criteria

After DoE 1990, Annex 4: '*Secretary of State's Criteria for Scheduling Ancient Monuments*'

- i) *Period*: all types of monuments that characterise a category or period should be considered for preservation;
- ii) *Rarity*: there are some monument categories which in certain periods are so scarce that all surviving examples which retain some archaeological potential should be preserved. In general, however, a selection must be made which portrays the typical and commonplace as well as the rare. This process should take account of all aspects of the distribution of a particular class of monument, both in a national and regional context;
- iii) *Documentation*: the significance of a monument may be enhanced by the existence of record of previous investigation or, in the case of more recent monuments, by the supporting evidence of contemporary written records;
- iv) *Group Value*: the value of a single monument (such as a field system) may be greatly enhanced by its association with related contemporary monuments (such as a settlement and cemetery) or with monuments of different periods. In some cases, it is preferable to protect the complete group of monuments, including associated and adjacent land, rather than to protect isolated monuments within the group;
- v) *Survival/Condition*: the survival of a monument's archaeological potential both above and below ground is a particularly important consideration and should be assessed in relation to its present condition and surviving features;
- vi) *Fragility/Vulnerability*: highly important archaeological evidence from some field monuments can be destroyed by a single ploughing or unsympathetic treatment; vulnerable monuments of this nature would particularly benefit from the statutory protection which scheduling confers. There are also existing standing structures of particular form or complexity whose value can again be severely reduced by neglect or careless treatment and which are similarly well suited by scheduled monument protection, even if these structures are already listed historic buildings;
- vii) *Diversity*: some monuments may be selected for scheduling because they possess a combination of high quality features, others because of a single important attribute;
- viii) *Potential*: on occasion, the nature of the evidence cannot be specified precisely but it may still be possible to document reasons anticipating its existence and importance and so to demonstrate the justification for scheduling. This is usually confined to sites rather than upstanding monuments.