# Former watermill Mug Mill Farm, Sitlington, West Yorkshire: Historic Buildings Record



December 2015 NGR: SE 25225 17690 Historic township: Shitlington

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**Photographs** 

#### **SUMMARY**

A former watermill at Mug Mill Farm (NGR: SE 25225 17690) was recorded in October 2015, primarily by photography, for the owner Mr R Dawson, before its conversion to housing. The site comprises two buildings likely to be 18th or 19th century, of which the larger was the mill itself, though there is very little archaeological evidence for details of former arrangements within the present fabric as both it and the smaller adjoining building were later adapted to farming use.

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#### LIST OF BLACK AND WHITE PHOTOGRAPHS

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#### FORMER WATERMILL, MUG MILL FARM, SITLINGTON, WEST YORKSHIRE:

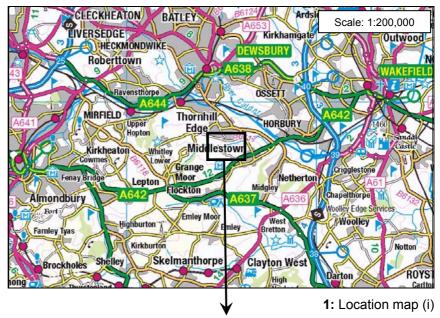
#### HISTORIC BUILDINGS RECORD

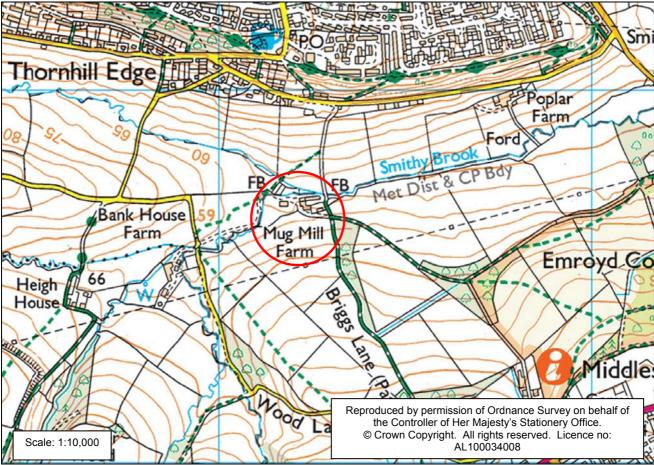
#### 1 Introduction

- 1.1 This report presents the results of historic building recording of a former watermill at Mug Mill Farm, in Sitlington civil parish, West Yorkshire. The work was carried out in October 2015 for the building's owner Mr R Dawson, to fulfil a condition of planning consent for its conversion to a dwelling, and was commissioned via Wake Architects Ltd.
- 1.2 The site comprises two adjoining stone buildings, of which the principal one under study is a former water-powered corn mill of uncertain origins, but which was extant by the late 18th century, though much altered in the 19th or 20th century, so that there is only very limited evidence for its original function. The smaller building is an ancillary structure, perhaps a store historically. There is no obviously visible evidence for water management either above or below the buildings, and the former mill pond has been built on.
- 1.3 The recording work was carried out in accordance with a specification from the West Yorkshire Archaeology Advisory Service (WYAAS) (Appendix 1), and involved a photographic survey, as well as research into the buildings' history. This report will be submitted to the client, the West Yorkshire Historic Environment Record and the West Yorkshire Archive Service, and will be published on the internet via the OASIS project.

#### 2 Location and current use

- 2.1 Mug Mill Farm lies in the bottom of the valley of the Howroyd Beck (a tributary of the Smithy Beck and subsequently the River Calder), between the settlements of Thornhill Edge and Middlestown. The site stands on the south side of the beck, which here forms the boundary between the metropolitan districts of Wakefield and Kirklees; the farm lies within Wakefield district (about 10km west of the city centre), and Sitlington civil parish (figures 1 & 2). Its national grid reference is SE 25225 17690, and its height above Ordnance Datum (sea level) is approximately 55m.
- 2.2 There are a number of buildings at the farm, spread out in irregular fashion: the mill lies in the approximate centre of the group. Other historic structures at the site include the farmhouse, a small ruin to the north-west of the mill, and a larger, ruined farmhouse and barn range further to the north-west. The site of the former pond to the west of the mill is now occupied by a modern shed (figure 3).





2: Location map (ii)

2.3 The development area itself comprises two adjoining parts (Buildings 1 and 2), both approximately square in plan and of two storeys, with the higher ground level to the south-west side allowing direct access to both storeys. All have been

in some use recently, including for housing horses and general storage, and part has served as a workshop.

#### 3 Planning background

- 3.1 None of the buildings at the site have been listed as having special architectural or historic interest or lie within a conservation area. However, the West Yorkshire Historic Environment Record contains an entry for the site, as PRN 4260 (see below).
- 3.2 Planning consent for the mill's change of use to a dwelling was granted by Wakefield Council in 2012<sup>1</sup>, described as the "conversion of existing barn to 1 number detached dwelling". In response to the application, the planning authority's advisor (the West Yorkshire Archaeology Advisory Service (WYAAS)) requested archaeological recording at the site, and condition 6 of the consent does require that:

"Prior to commencement of any works an historical record of the building(s) shall be undertaken and submitted to the Local Planning Authority. The contents of the historical record shall be agreed in writing by the Local Planning Authority prior to commencement of works."

The present recording is intended to satisfy this condition.

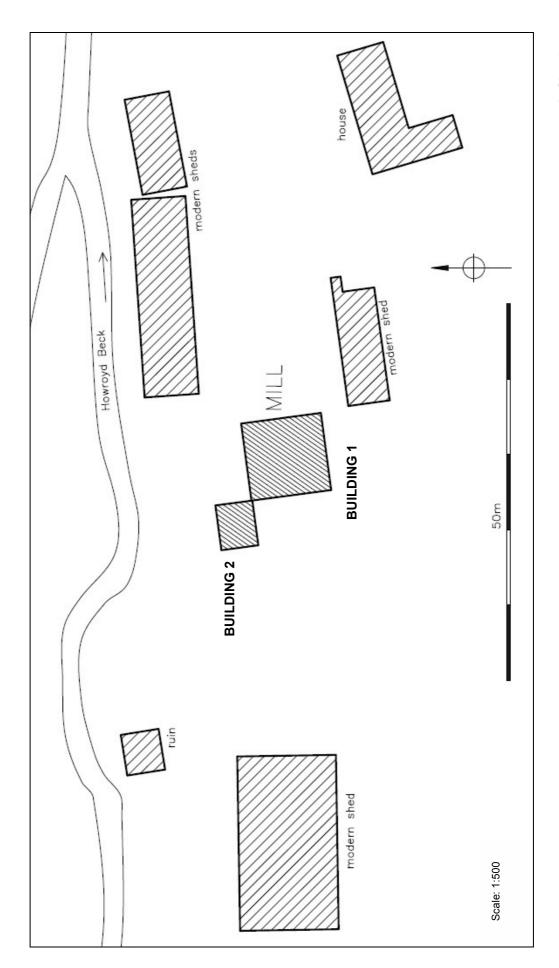
#### 4 Previous investigative work

4.1 No investigative work of this type is thought to have been carried out previously with the exception of an assessment made by WYAAS in 2011, at which it was observed that:

The mill... may be 17th or 18th century in date. It has blocked tripartite windows facing west over the site of the infilled mill pond. No evidence of mill gear or hirst survives within the mill buildings although various blocked openings give some impression of this and later alterations. Now used for storage (ground floor) and a workshop/store on the first floor. The mill comprises of a two-storey L shaped range built in stone with a thick slate roof covering. It is aligned N-S with wheel pit on the south side; the tail leat must have run east under yard. The store is also two storeys, and at right angles to the west."

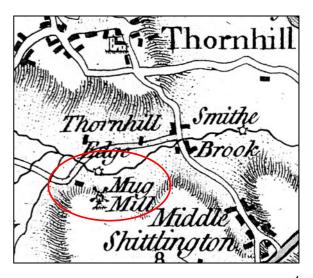
<sup>&</sup>lt;sup>1</sup> application number 12/01010/FUL

<sup>&</sup>lt;sup>2</sup> West Yorkshire Historic Environment Record PRN 4260, taken on 5 November 2015 from http://www.heritagegateway.org.uk/Gateway/Results Single.aspx?uid=4260&resourceID=105



#### 5 Historical background

- 5.1 Water-powered corn mills which produced flour from grain by rotary stone grinding were probably first built in Britain by the Romans, and continued in common use until the late 19th century, when they were made uncompetitive by larger, roller mills powered by steam or other engines. As watermills needed to be situated where they could exploit watercourses, it is often the case that water-management systems and mill sites established in the medieval period remained in use and were adapted over many centuries, even if the buildings themselves were rebuilt wholly or in part, to accommodate new technologies or to process larger volumes. There is no evidence to suggest that the present building at Mug Mill is any earlier than 18th or 19th century in construction, but there does remain a possibility that it occupies the site of an earlier predecessor.
- 5.2 The earliest presently known record of a mill at the site is from 1739, according to one source<sup>3</sup>, though the earliest map to depict one is Jefferys' county survey published in 1771 (figure 4). The watermill is indicated by a small cogged wheel symbol on the brook, though a windmill is also shown on the hill to the south; it is ambiguous as to which site is identified as Mug Mill.

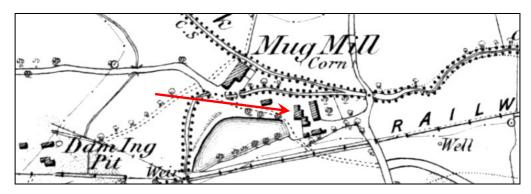


2: Jefferys' map, 17714

5.3 The Ordnance Survey 1:10560 map, surveyed in 1850-51 (figure 5) shows the site in more detail, and notes that the mill was used for corn. Two or three adjoining buildings represent the mill itself (see red arrow), but there are a number of other structures in the vicinity: a pond, dammed at its east end, supplied the mill with power, and clearly gave its name to the adjacent "Dam Ing Pit", the small coal mine to the west, served by a railway.

<sup>&</sup>lt;sup>3</sup> Smith, A H 1961 The Place-Names of the West Riding of Yorkshire, Part 2 (EPNS 31) p208

<sup>&</sup>lt;sup>4</sup> The County of York Survey'd in 1767, 1768, 1769 and 1770 by Thomas Jefferys plate 12



**3:** OS map, 1855<sup>5</sup>

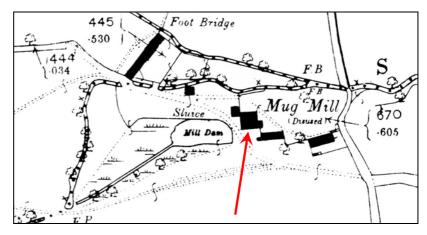
- The contemporary tithe map of 1849 for Shitlington, held at the Leeds office of the West Yorkshire Archive Service<sup>6</sup>, is incomplete and the northern part of the township is missing from it, but an examination of the tithe award reveals that parcel number 15 was identified as "Mug Mill Gardens etc", and was occupied by Isabella Bedford and owned by Sir George Armitage. Bedford occupied 22 acres in total in the township, including "Mill Dam" and "Over Wind Mill Close", implying the (former) presence of a windmill nearby; most of her fields were described as arable.
- 5.5 Census returns suggest that commercial milling ceased at the site during the second half of the 19th century, perhaps as early as the 1850s, though they give no clue for a more precise date at which this change took place; however, the Ordnance Survey recorded that the mill had become disused by the 1890s (see below). It has not been possible to identify the property in the 1841 census, but in 1851 "Mug Mill" (or rather the adjacent house) was the home of Thomas Bedford, "corn miller and farmer of 60 acres", together with his wife Mary. Later in the 1850s it was taken over by Richard Henry Taylor, named as a corn miller in a trade directory<sup>7</sup>, but in the 1861 and 1871 censuses described simply as a farmer of 48 acres at "Mug Mill Dam" and "Mug Mill House" respectively, where he employed one labourer. By 1881 the occupier had become William Swales, farmer of 44 acres, who was succeeded by Joseph Swales by 1891, the latter remaining in residence until at least 1911.
- 5.6 Ordnance Survey maps at 1:2500 scale, from the 1890s, 1900s and 1930s, also contribute to an understanding of the site's function, though do not add greatly to the interpretation of the former mill buildings themselves. From the first of these maps it can be deduced that milling was no longer carried out by 1892, and also

<sup>&</sup>lt;sup>5</sup> Ordnance Survey 1:10560 map, Yorkshire sheet 247, surveyed 1850-1

<sup>&</sup>lt;sup>6</sup> WYAS Leeds WD

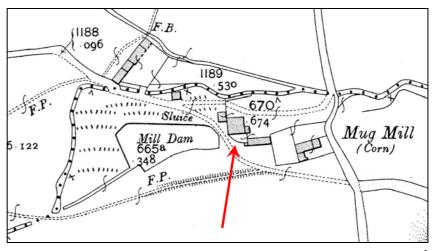
<sup>&</sup>lt;sup>7</sup> White, W 1858 Directory and Topography of the Boroughs of Leeds, Halifax, Huddersfield, and Wakefield; Dewsbury, Heckmondwike, and Holmfirth, and the villages and townships... in and near the Yorkshire woollen district p617

that mining had by then ceased at the nearby Dam Ing Pit (figure 6). The main building under study was then essentially rectangular, with appendages to the north-west corner (as today) and south-east corner (now demolished); details of water management between the mill dam and the beck are not shown.



**4:** OS map, 1893<sup>8</sup>

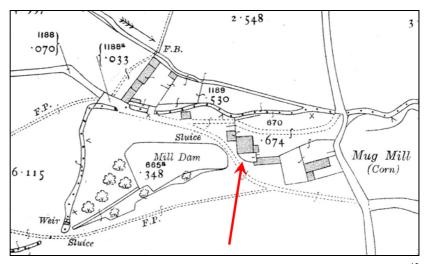
Twenty-two years later the Ordnance Survey map suggests that the mill had come back into use, as the word "corn" appears, rather than "disused" (figure 7); however the buildings themselves appear not to have changed during this time, and the situation appears to have remained unaltered ten years later (figure 8). By 1930 however the site was identified only as "Mug Mill Farm" and minor extensions had been added to the east side of the mill building, implying adaptation to changing use. Some aspects of the water management system appear to have survived to this date, despite their apparent redundancy.



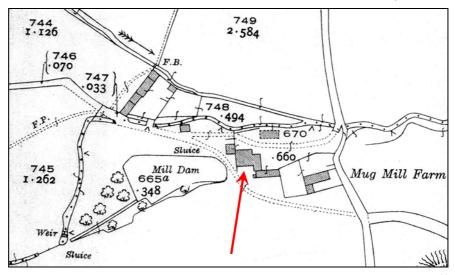
**5**: OS map, 1907<sup>9</sup>

<sup>&</sup>lt;sup>8</sup> Ordnance Survey 1:2500 map, Yorkshire sheet 247.12, surveyed 1892

<sup>&</sup>lt;sup>9</sup> Ordnance Survey 1:2500 map, Yorkshire sheets 247.12, revised 1904



**6:** OS map, 1919<sup>10</sup>



**7:** OS map, 1932<sup>11</sup>

5.8 In summary, historical evidence suggests that there has been a watermill on the site since 1739 or earlier, and that this was grinding corn into the 1850s, when it formed part of a farm holding. Between the 1850s and 1892 it ceased to be used for milling, but was possibly brought back into use by 1904, until a second closure between 1914 and 1930. It was common for such mills to be given over to grinding for animal feed during this broad period, and that may account for the apparent intermittent, later use of this example at Mug Mill Farm.

#### 6 **Recording methodology**

6.1 The present recording was carried out during a site visit on 30 October 2015, and involved detailed inspection of the mill buildings (as subject to the planning consent) together with photographic recording, in accordance with the

<sup>&</sup>lt;sup>10</sup> Ordnance Survey 1:2500 map, Yorkshire sheets 247.12, revised 1914

<sup>&</sup>lt;sup>11</sup> Ordnance Survey 1:2500 map, Yorkshire sheets 247.12, revised 1930

- specification (Appendix 1); there was no requirement for any drawn survey. Following this, a meeting was held on 10 November with David Hunter of WYAAS, at which initial approval was given to the results of recording.
- 6.2 The photographic record was made using a medium format camera with perspective control and other lenses, and black and white film for archival stability (as required by the specification). External and internal photographs were taken of all parts of the buildings using a 2m ranging pole marked with 0.5m graduations as a scale, or a 0.5m baton with 0.1m graduations. These black and white photographs have been printed at 7" x 5" or 10" x 8", and are all copied in this report, where they are referred to by numbers in **bold**. A small number of photographs was also taken using a digital camera (see Appendix 2), which will be deposited on a CD only, with WYAAS. Locations of all photographs taken are marked on sketched floor plans, which are not annotated in detail or intended to be dimensionally accurate.

#### 7 Description of the buildings

7.1 There are two distinct but adjoining buildings within the present development site, which represent the former watermill. They are both approximately square in plan, with the larger of the two (Building 1) having sides just over 10m in length, and at its north-west corner is the smaller (Building 2), which has sides some 5m long (1,2). Both buildings are of two storeys, but due to the fact that ground level is some 2.5m higher on the south-west side, there is in each case direct access from outside to both floors. In both cases, the buildings have roofs of local stone slate and walls of local sandstone, which varies to some extent in course depth and regularity.

#### **Exterior**

Puilding 1 has been much altered since it served as a watermill, and features which identify its original function are confined to the south end, now an asymmetric gable whose profile is likely to result from changes made to the structure after milling ceased (3,4). Within this gable, a vertical straight joint near the east end indicates that the west, larger part of the wall is the earlier, and there are two blocked arches here, of different heights (as well as a third near the south-west corner, which can only be observed from inside the building) (5). External ground level along this south side, where the wheelpit is likely to have been situated, has clearly been raised, so the full heights of these openings are not known, nor their original functions, but they are characteristic of the type of opening often found alongside a wheelpit: one of them may have held the axle bearing, while others may have given access to the wheel or pit from inside the

mill. None of the other features within the south gable can be directly associated with a watermill function, though an area of disturbance near the south-west corner may be significant (6). It is also worth noting that the 1932 map shows an adjoining building projecting to the south of the present gable, no longer extant.

- 7.3 Within the east side of the Building 1 (which, according to the straight joint in the south gable, post-dates the earliest phase), there is further evidence for raised ground levels in the presence of a doorway now only approximately 1m high, suggesting that later deposits now account for about 1m depth below present ground level (7). The other openings in this wall appear to be relatively modern and associated with the use of the building for farming, including the wide doorway near the north end. Another wide doorway in the north gable is also clearly 20th century, as are the stairs and gantry serving the upper ground floor (8). It is not clear as to whether the doorway and window (the latter obscured by the enclosed staircase) are original to the building or 19th/20th century insertions.
- 7.4 The thin courses of stone of which the west side of Building 1 are built suggest that this upper floor level has been rebuilt, though whether this work was carried out during the watermill phase is not known (9,10). That it is not contemporary with the earliest parts of the building can be inferred from the south end of the wall where there is a short straight joint, while the use of unusual brick or clay eaves brackets (perhaps drainage tiles<sup>12</sup>) (11), and the iron doorway lintel, suggests the 19th or 20th century. The doorway itself contains some well finished stone (12), but perhaps re-uses earlier materials.
- Puilding 2 is linked to its larger neighbour by a short wall some 0.3m long; the two are otherwise structurally distinct. All four elevations are of similar, thinly coursed stone, so a single main phase is implied, likely to be late 18th or early 19th century, and although the same improvised eaves brackets as in Building 1 are used, these are thought to relate to a later re-roofing and modification of the top courses at the eaves (13-16). The well-made upper ground floor doorway in the south side is notable and clearly original to the structure, as the plank door within it may also be. Blocked or otherwise altered square windows are present in the south and west sides at this upper floor level, while in the east side at eaves level is a row of blocked joist sockets or ventilators. There have been changes in the pattern of ground floor openings in this east wall too, though the doorway near the north end is of the same form as that in the south wall, and is therefore likely to be original.

<sup>&</sup>lt;sup>12</sup> David Hunter pers comm

#### Interior

- 7.6 The ground floor of Building 1 is divided into two unequal halves, by a cross-wall running north-south, which post-dates the watermill phase, and supports deep softwood joists running east-west. Only in the room to the west of it, which now forms a garage space open to the full width at the north end, is there evidence for milling, where the western two of the three blocked arches in the south wall are visible, the westernmost one only just visible above floor level (17,18). Associated with these is an area of darkened, grease-stained stonework in the south-west corner (19), where there has been patching and repair, but no clear evidence for the extent or form of any internal structures or gearing for milling, such as a hurst, pit wheel or main shaft. A pair of cast iron bearing boxes are set within the east and west walls about 2.5m from the south end, but these are probably late 19th or early 20th century (one of them is incorporated within the later wall), and the horizontal shaft they held is likely to have been driven by an electric or other motor, perhaps for a small agricultural grinder (20-22). There are no further significant features in the northern part of this room (23,24).
- 7.7 The division of the ground floor by the north-south wall appears to have been intended to allow the creation of animal housing within the east part of the building: this area is now partly modern equestrian loose boxes, but earlier, mid 20th century cattle feeding troughs survive against the west side, together with brick and concrete standings, and it is possible that in an earlier phase this formed a stable for a number of horses (25-27); if so, one wonders if the nearby colliery employed them, rather than the farm. Three raking trusses of softwood support the roof, which must be contemporary with the cross wall (28); the roof incorporates a tall ventilator with louvre sides, for the welfare of the livestock.
- 7.8 The secondary cross-wall also forms the east side of the upper ground floor room in Building 1, now a workshop, where there is very little evidence of any former use, largely because the internal wall faces are cement rendered (29,30). The softwood king post truss is typical for the 19th or early 20th century (31). A storage function can be surmised for this floor in both the watermill and later phases, though the replacement of the floor boards and joists means that any traps, other access, or features of mechanical relevance within it from the earlier period have not survived.
- 7.9 On the ground floor of the smaller Building 2 the only evidence of function relates to cow housing, which, as with the east part of Building 1, takes the form of mid 20th century stalls and feeding troughs, in this case against the south wall (32). As with the neighbouring building however this is no doubt a secondary function, but it is not possible to ascertain any particular role the building had when the

watermill was functioning. Individual features of note in this room include the long timber lintel which spans the doorway, window and blocked doorway in the east wall (33,34), and the pair of re-used floor beams overhead, which have simple, narrow roll mouldings along the arrises: it is conceivable that these are derived from the watermill itself, where often the quality of the joinery was superior to that in a typical farm building (35,36). On the upper ground floor there is internal cement render which means little can be deduced about the former function of this room (37). There is no roof truss but the purlins are simply carried by the east and west walls.

#### 8 Discussion and conclusion

8.1 In contrast to many such rural watermills which remained in operation in the 19th century, there is relatively little historical or above-ground archaeological evidence relating to the details of the watermill at Mug Mill Farm. Clearly it had been established by the 1730s, but whether it was in operation much earlier than that remains a mystery. No suggestion is known to have been made to assign a medieval date for milling at the site, which would imply it was a manorial establishment, but given the complexity of manorial and sub-manorial divisions within Shitlington township there may be grounds for this, subject to further historical study. Nothing within the present buildings suggests such an ancient date for their structural remains however, and so it is likely that the earliest visible surviving parts are 18th or 19th century, perhaps built as a speculative project by a farmer or landowner, which served a small local demand but never enjoyed significant prosperity or renown beyond the immediate locality. Parts of the former mill were adapted to animal housing later in their life and this, together with the removal of wheelpit and head and tail races, accounts for the paucity of physical traces of the buildings' original function.

#### **Appendix 1: WYAAS Specification**

## Specification For Archaeological Photographic Building Recording AT MUG MILL FARM, SITLINGTON, WAKEFIELD (SE25225 17690)

Specification prepared at the request of Dan Warren of Wake Architects on behalf of Wakefield Metropolitan Borough Council in response to planning consent 12/01010/FUL.

#### 1 Summary

1.1 A building record (photographic survey) is required to identify and document items of archaeological and architectural interest prior to the conversion of this probable 18th century water powered corn mill to a dwelling. This specification for the necessary work has been prepared by the West Yorkshire Archaeology Advisory Service (WYAAS), the curators of the West Yorkshire Historic Environment Record.

NOTE: The requirements detailed in paragraphs 6.1.1 to 6.1.5 inclusive, 8.3 and 8.4 are to be met by the archaeological contractor **prior** to the commencement of fieldwork by completing and returning the attached form to the WY Archaeology Advisory Service.

#### 2 Site Location and Description

#### 2.1 Location

(Grid ref. <u>SE25225 17690</u>) Mug Mill Farm is located in a valley bottom between Thornhill and Middlestown. The site is accessed via a long lane from Edge Road, Thornhill and lies on the southern side of a stream called Smithy Brook. Mug Mill Farm lies in the historic township of Sitlington [sic]. The site is a Class III Area of Archaeological Interest (West Yorkshire Historic Environment Record PRN 4260).

The mill has a total footprint of 160m<sup>2</sup>.

#### 2.2 Description

Mug Mill is one of a group of buildings now forming Mug Mill Farm. These comprises a ruinous laithhouse a little to the west and north of Smithy Brook, a restored carriage/cart house, a late 19th century farm house (demolished) and various open sided agricultural sheds.

The mill is constructed from stone with a stone slate roof. Its western side is built to earth. The building extends over two levels including a long out-shut to the east at lower ground level. A byre, with store or granary over, is attached to the mill's north-western corner. The wheel pit is located on the south side of the mill. The store and mill building are accessed from an upper ground level off what would have been the level of the mill dam.

The infilled mill pond extended west to a weir on Smithy Brook and was occupied by a 20th century agricultural shed when visited by the WYAAS.

The mill has three windows, two, in the western façade, were blocked and comprised examples of double and triple lights with mullions. The third window is located at a high level in the southern façade. A wide door is located in the centre of the upper west wall.

A blocked opening in the southern elevation is the opening for waterwheel's axle to communicate with the mill gear inside the out-shut. The mill's tailrace was evident in part but culverted to the east. The mill building has a robust kingpost roof comprising timbers of heavy scantlings.

The store/byre has a similar but smaller door in its south (upper) side and a wide window or pitching eye in its western gable.

#### 3 Planning Background

The site owners, through their agents Wake Architects (1 Dunford Road, Holmfirth HD9 2DP, contact Dan Warren © 01484 681755) have obtained planning consent (Planning Application No. 12/01010/FUL) for the conversion of the existing barn [sic] to a dwelling. The WYAAS (as Wakefield's archaeological advisor) has prepared this specification in order to allow the owner to meet the terms of an archaeological condition which has been placed on the consent (Condition 6).

#### 4 Archaeological Interest

#### 4.1 Historical Background

Mug Mill is shown on Jeffreys' Map of Yorkshire and must date to at least the mid 18th century. The lack of surviving shafting or hirst makes it difficult to attribute functions to the mill buildings although the driving gear was evidently housed in the out-shut portion of the mill.

As a small water powered corn mill of the mid 18th century or possibly earlier date Mug Mill represents a rare survivor of a once common rural building. Analysis of the fabric should aim to establish the form of water wheel used and examine the functional layout and historic circulation within the buildings.

#### 4.2 Impact of proposed development

Conversion of the mill buildings will alter the fabric and possibly uncover and destroy evidence of the mill's original form and function.

#### 5 Aims of the Project

5.1 The aim of the proposed work is to identify and objectively record by means of photographs any significant evidence for the original and subsequent historical form and functions of the corn mill, and to place this record in the public domain by depositing it with the WY Historic Environment Record (Registry of Deeds, Newstead Road, Wakefield WF1 2DE). The archaeologist on site should give particular attention to recording as far as possible the functional arrangements and division of the buildings.

#### 6 Recording Methodology

#### **6.1 General Instructions**

#### 6.1.1 Health and Safety

The archaeologist on site will naturally operate with due regard for Health and Safety regulations. Prior to the commencement of any work on site (and preferably prior to submission of the tender) the archaeological contractor may wish to carry out a Risk Assessment on this structure in accordance with the Health and Safety at Work Regulations. The archaeological contractor should identify any contaminants which constitute potential Health and Safety hazards (e.g. chemical drums) and make arrangements with the client for decontamination/making safe as necessary and appropriate. The WY Archaeology Advisory Service and its officers cannot be held responsible for any accidents or injuries which may occur to outside contractors engaged to undertake this survey while attempting to conform to this specification.

#### 6.1.2 Confirmation of adherence to specification

Prior to the commencement of any work, the archaeological contractor must confirm in writing adherence to this specification (using the attached form), or state in writing (with

reasons) any specific proposals to vary the specification. Should the contractor wish to vary the specification, then written confirmation of the agreement of the WYAAS to any variations is required prior to work commencing. Unauthorised variations are made at the sole risk of the contractor (see para. 8.3, below). Modifications presented in the form of a re-written project brief will not be considered by the WYAAS.

#### 6.1.3 Confirmation of timetable and contractor's qualifications

Prior to the commencement of work on site, the archaeological contractor should provide the WYAAS in writing with a projected timetable for the site work, and with details regarding staff structure and numbers. *Curriculum vitae* of key project members (the project manager, site supervisor, photographer, any proposed specialists *etc.*), along with details of any specialist sub-contractors, should also be supplied to the WYAAS if the contractor has not previously done so. All project staff provided by the archaeological contractor must be suitably qualified and experienced for their roles. In particular, staff involved in building recording should have proven expertise in the recording and analysis of industrial buildings.

#### 6.1.4 Site preparation

Prior to the commencement of work on site the archaeological contractor should identify all removable modern material (including 20th century partitions, dry-boarding, suspended ceilings, modern machinery etc.) which may significantly obscure material requiring an archaeological record, and should contact the developer in order to make arrangements for its removal (if necessary, under archaeological supervision). It is not the intention of this specification that large-scale removal of material of this type should take place with the archaeological contractor's manpower or at that contractor's expense.

#### 6.1.5 Documentary research

Prior to the commencement of work on site, the archaeological contractor should undertake a rapid map-regression exercise based on the readily-available map and photographic evidence held by the relevant Local History Library. Given the site's location relevant material may be held in either Wakefield or Dewsbury local history libraries (Wakefield One Burton Street Wakefield WF1 2DD 01924 305 356 or Dewsbury Library, Railway Street, Dewsbury WF12 8EQ Tel.: 01924 325080) and the West Yorkshire Archive Service offices in Wakefield and Huddesrfield (WYAS, Wakefield, Registry of Deeds, Newstead Road, Wakefield WF1 2DE Tel: 01924 305980 Email: wakefield@wyjs.org.uk and WYAS Kirklees, Kirklees Central Library, Princess Alexandra Walk, Huddersfield HD1 2SU Tel: +44 (0)1484 221966 Email: kirklees@wyjs.org.uk), and a rapid examination of the available 19th- and 20th-century Trades and Postal directories the appropriate census returns and all other available primary and relevant secondary sources. This work is intended to inform the archaeological recording by providing background information with regard to function and phasing. Please note that this exercise is not intended to be a formal desk-based assessment, and should not represent a disproportionate percentage of the time allowed for the project overall.

#### 6.1.6 Site/building plans

If appropriate drawings are available, these may be used for any annotation relative to the photographic record (permission of the copyright holder must be sought).

If drawings are not available a sketch plan of the site/building layout, marked with a north pointer, should be derived from the most appropriate large-scale historic mapping and reproduced at an appropriate scale (not smaller than 1:100). This plan should then be used for any annotation relative to the photographic record.

#### 6.2 Written Record

The archaeologist on site should carefully examine all parts of the mill prior to the commencement of the photographic recording, in order to identify all features relevant to its

original use and to obtain an overview of the development of the building and of the site as a whole. As part of this exercise, the archaeologist on site should produce written observations (e.g. on phasing; on building function) sufficient to permit the preparation of a report on the structure. This process should include the completion of a Room Data Sheet or similar structured recording pro-forma<sup>13</sup> for each room or discrete internal space within the volume of the structure. The crucial requirement is that each room should be examined individually, that the results of that examination should be noted in a systematic fashion, and that these objective observations should be used to inform an analytical interpretation of the overall development and operation of the site.

#### 6.3 Photographic Record

#### 6.3.1 External photographs

An external photographic record should be made of all elevations of the mill buildings, from vantage points as nearly parallel to the elevation being photographed as is possible within the constraints of the site. The contractor should ensure that all visible elements of each elevation are recorded photographically; this may require photographs from a number of vantage points. A general external photographic record should also be made which includes a number of oblique general views of the buildings from all sides, showing them and the complex as a whole in its setting. In addition, a 35mm general colour-slide survey of the buildings should also be provided (using a variety of wide-angle, medium and long-distance lenses). While it is not necessary to duplicate every black-and-white shot, the colour record should be sufficiently comprehensive to provide a good picture of the form and general appearance of the complex and of the individual structures. The colour slide record should also include some internal shots. See digital photography as an alternative in section 6.3.5 below

#### 6.3.2 Internal photographs

A general internal photographic record should be made of each building. General views should be taken of *each room* or discrete internal space from a sufficient number of vantage points to adequately record the form, general appearance and manner of construction of each area photographed. In areas which are wholly modern in appearance, character and materials, a single shot to record current appearance will suffice.

#### 6.3.3 Detail photographs

In addition, detailed record shots should be made of all features of archaeological and architectural interest identified during the process of appraisal. Typically, items of interest would include:

- All original structural elements, roof structures / trusses
- Original doors and window frames and any associated shutters or other fittings
- Original access arrangements
- Any evidence of vertical access e.g. traps hoists or chutes
- Any evidence of the generation and distribution of power through the building
- Any evidence for the housing of animals

But this list should not be treated as exhaustive. The archaeologist on site should also identify and note:

<sup>&</sup>lt;sup>13</sup> The WY Archaeology Advisory Service would recommend the employment of the attached pro-forma, but will consider any suitable alternative which the archaeological contractor may wish to submit (Note that agreement for the employment of an alternative *schema* must be obtained in writing from the WY Archaeology Advisory Service prior to the commencement of work on site).

- any significant changes in construction material this is intended to include significant changes in stone/brick type and size
- any blocked, altered or introduced openings
- evidence for phasing, and for historical additions or alterations to the building.

Elements for which multiple examples exist (e.g. each type of roof truss, column or window frame) may be recorded by means of a single representative illustration. **N.B.** Detail photographs must be taken at medium-to-close range and be framed in such a way as to ensure that the element being photographed clearly constitutes the principal feature of the photograph.

#### 6.3.4 Equipment

General photographs should be taken with a Large Format monorail camera (5" x 4" or 10" x 8"), or with a Medium Format camera that has perspective control, using a tripod. The contractor must have proven expertise in this type of work. Any detail photographs of structural elements should if possible be taken with a camera with perspective control. Other detail photographs may be taken with either a Medium Format or a 35mm camera. All detail photographs must contain a graduated photographic scale of appropriate dimensions (measuring tapes and surveying staffs are not considered to be acceptable scales in this context). A 2-metre ranging-rod, discretely positioned, should be included in a selection of general shots, sufficient to independently establish the scale of all elements of the structure.

#### 6.3.5 Digital photography

Digital photography: as an alternative for colour slide photography, good quality digital photography may be supplied, using cameras with a minimum resolution of 10 megapixels. Digital photography should follow the guidance given by Historic England in Digital Image Capture and File Storage: Guidelines for Best Practice, July 2015. Note that conventional black and white print photography is still required and constitutes the permanent record. Digital images will only be acceptable as an alternative to colour slide photography if each image is supplied as both a JPEG and a TIFF versions. The latter as an uncompressed 8-bits per channel TIFF version 6 file of not less than 25Mbs (See section 2.3 of the Historic England guidance). The contractor must include metadata embedded in the TIFF file. The metadata must include the following: the commonly used name for the site being photographed, the relevant centred OS grid coordinates for the site to at least six figures, the relevant township name, the date of photograph, the subject of the photograph, the direction of shot and the name of the organisation taking the photograph. Any digital images are to be supplied to WYAAS on gold CDs by the archaeological contractor accompanying the hard copy of the report.

#### 6.3.6 Film stock

All record photographs to be black and white, using conventional (not chromogenic) silver-based film only, such as Illford FP4 or HP5, or Delta 400 Pro that is replacing HP5 in certain film sizes (such as 220). Dye-based films such as Ilford XP2 and Kodak T40CN are unacceptable due to poor archiving qualities.

#### 6.3.7 Printing

6.3.7a Record photographs should be printed at a minimum of 5" x 7". In addition, a selection of photographs intended to illustrate structural detail should be printed at 10" x 8" (it is expected that there is likely to be a need for 3 such prints) Bracketed shots of identical viewpoints need not be reproduced, but all viewpoints must be represented within the report.

6.3.7b Prints may be executed digitally from scanned versions of the film negatives, and may be manipulated to improve print quality (but **not** in a manner which alters detail or

perspective). All digital prints must be made on paper and with inks which are certified against fading or other deterioration for a period of 75 years or more when used in combination. If digital printing is employed, the contractor must supply details of the paper/inks used in writing to the WYAAS, with supporting documentation indicating their archival stability/durability. Written confirmation that the materials are acceptable must have been received from the WYAAS prior to the commencement of work on site.

#### 6.3.8 Documentation

A photographic register detailing (as a minimum) location, direction and subject of shot must accompany the photographic record; a separate photographic register should be supplied for any colour slides and digital photographs. Position and direction of each photograph and slide should be noted on a scaled copy of the building plan (minimum acceptable scale 1:100), which should also be marked with a north pointer. Separate plans should be annotated for each floor of each building.

#### 7. Post-Recording Work and Report Preparation

#### 7.1 After completion of fieldwork

Prior to the commencement of any other work on site, the archaeological contractor should arrange a meeting at the offices of the WY Archaeology Advisory Service to present a draft of the photo-location plan, and photographic contact prints adequately referenced to this plan (material supplied will be returned to the contractor). Copies of the slides or digital photographs should also be brought in for checking. **N.B.** if full-sized prints or digital versions of contact sheets are supplied for this purpose, they must be accompanied by a sample of the processed negatives. If appropriate, the WY Archaeology Advisory Service will then confirm to Wakefield Planning Services that fieldwork has been satisfactorily completed and that other work on site may commence (although discharge of the archaeological condition will not be recommended until a completed copy of the full report and photographic record has been received and approved by the West Yorkshire Archaeology Advisory Service). Please note that as of the 1st April 2011, the WYAAS will charge the archaeological contractor a fee for each fieldwork verification meeting.

#### 7.2 Report Preparation

#### 7.2.1 Report format and content

A written report should be produced. This should include:

- an executive summary including dates of fieldwork, name of commissioning body, and a brief summary of the results including details of any significant finds
- an introduction outlining the reasons for the survey
- a brief architectural description of the buildings presented in a logical manner (as a walk around and through the buildings, starting with setting, then progressing to all sides of the structure in sequence, and finally to the interior from the ground floor up)
- a discussion placing the corn mill complex in its local and historical contexts, describing and analysing the development of individual structures and of the complex as a whole. This analysis should consider the water mill as an integrated system intended to perform a specialised function, with particular attention being given to historical plan form, technical layout and process flow.

The architectural description should be fully cross-referenced to the photographic record, sufficient to illustrate the major features of the site and the major points raised. It is not envisaged that the report is likely to be published, but it should be produced with sufficient care and attention to detail to be of academic use to future researchers. A copy of this specification and a quantified index to the field archive should also be bound into the back of the report. The cover sheet should include a centred eight-figure OS grid reference and the name of the township in which the site is located (Sitlington).

#### 7.2.2 Report Illustrations

Illustrations should include:

- a location map at a scale sufficient to allow clear identification of the buildings in relation to other buildings in the immediate area
- an overall keyed plan of the site showing the surviving buildings in relation to each other
- a complete set of site drawings at a legible scale, on which position and direction of each photograph has been noted
- any relevant historic map editions, with the position and extent of the site clearly indicated
- any additional illustrations pertinent to the site
- a complete set of good-quality laser copies of all photographs. All photographs should be accompanied by detailed captions clearly locating and identifying any pertinent features.

The latter should be bound into the report, appropriately labelled (numbered, and captioned in full) and fully referenced within the report. When captioning, contractors should identify the individual photographs by means of a running sequence of numbers (e.g. Plate no. 1; Plate no. 2), and it is this numbering system which should be used in cross-referencing throughout the report and on the photographic plans. However, the relevant original film and frame number should be included in brackets at the end of each caption.

#### 7.3 Report deposition

#### 7.3.1 General considerations

7.3.1a The report should be supplied to the client and an identical copy (but including the photographic prints and colour slides) supplied to the West Yorkshire HER. The finished report should be supplied within eight weeks of completion of all fieldwork, unless otherwise agreed with the WYAAS. The report will become publicly accessible once deposited with the WYAAS, unless confidentiality is explicitly requested, in which case it will become publicly accessible six months after deposit. Any comments made by WYAAS in response to the submission of an unsatisfactory report will be taken into account and will result in the reissue of a suitably edited report to all parties, within a timescale which has been agreed with WYAAS.

7.3.1b The West Yorkshire HER supports the Online Access to Index of Archaeological Investigations (OASIS) project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. The archaeological contractor must therefore complete the online OASIS form at http://ads.ahds.ac.uk/project/oasis/. Contractors are advised to contact the West Yorkshire HER officer prior to completing the form. Once a report has become a public document by submission to or incorporation into the HER, the West Yorkshire HER may place the information on a web-site. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report to the case officer at the West Yorkshire HER.

7.3.1c With the permission of the client, the archaeological contractor are encouraged to consider the deposition of a copy of the report for this site with the appropriate Local History Library.

7.3.1d A brief note on the work and its findings should be submitted to 'Post-medieval Fieldwork in England and Northern Ireland' published annually in the Journal of the Society for Post Medieval Archaeology.

#### 7.3.2 Deposition with WYAAS (the West Yorkshire Historic Environment Record)

The report copy supplied to the WY Archaeology Advisory Service should also be accompanied by both the photographic negatives and a complete set of labelled photographic prints (mounted in KENRO display pockets or similar, and arranged in such a way that labelling is readily visible) bound in a form which will fit readily into a standard filing cabinet suspension file (not using hard-backed ring-binders). Labelling should be on the back of the print in pencil giving film and frame number only (taking care not to damage the print) and on applied printed labels stuck on the front of the relevant photographic sleeve and which should include:

- film and frame number
- date recorded and photographer's name
- · name and address of building
- national grid reference
- specific subject of photograph.

Negatives should be supplied in archivally stable mounts (KENRO display pockets or similar), and each page of negatives should be clearly labelled with the following:

- Township name
- Site name and address
- Date of photographs (month/year)
- Name of archaeological contractor
- Film number

Colour slides should be mounted, and the mounts suitably marked with – 'Sitlington' (the Township name) with 'Mug Mill' under, at the top of the slide; grid reference at the bottom; date of photograph at the right hand side of the mount; subject of photograph at the left hand side of the mount. Subject labelling may take the form of a numbered reference to the relevant photographic register. The slides should be supplied to the WY Archaeology Advisory Service in an appropriate, archivally stable slide hanger (for storage in a filing cabinet). In all other respects, standards for archive compilation and transfer should conform to those outlined in *Archaeological Archives* – a guide to best practice in creation, compilation, transfer and curation (Archaeological Archives Forum, 2007).

7.3.3 **Copyright** - Please note that by depositing this report, the contractor gives permission for the material presented within the document to be used by the WYAAS, in perpetuity, although The Contractor retains the right to be identified as the author of all project documentation and reports as specified in the *Copyright, Designs and Patents Act* 1988 (chapter IV, section 79). The permission will allow the WYAAS to reproduce material, including for commercial use by third parties, with the copyright owner suitably acknowledged.

#### 7.4 Summary for publication

The attached summary sheet should be completed and submitted to the WYAAS for inclusion in the summary of archaeological work in West Yorkshire published on the WYAAS website.

#### 8 General considerations 8.1 Technical queries

Any technical queries arising from this specification should be addressed to the WYAAS without delay.

#### 8.2 Authorised alterations to specification by contractor

It should be noted that this specification is based upon records available in the West Yorkshire Historic Environment Record and on a brief examination of the site by the WYAAS. Archaeological contractors submitting tenders should carry out an inspection of the site prior to submission. If, on first visiting the site or at any time during the course of the recording exercise, it appears in the archaeologist's professional judgement that

- i) a part or the whole of the site is not amenable to recording as detailed above, and/or
- ii) an alternative approach may be more appropriate or likely to produce more informative results, and/or
- iii) any features which should be recorded, as having a bearing on the interpretation of the structure, have been omitted from the specification,

then it is expected that the archaeologist will contact the WYAAS as a matter of urgency. If contractors have not yet been appointed, any variations which the WYAAS considers to be justifiable on archaeological grounds will be incorporated into a revised specification, which will then be re-issued to the developer for redistribution to the tendering contractors. If an appointment has already been made and site work is ongoing, the WYAAS will resolve the matter in liaison with the developer and the Local Planning Authority.

#### 8.3 Unauthorised alterations to specification by contractor

It is the archaeological contractor's responsibility to ensure that they have obtained the WYAAS's consent in writing to any variation of the specification prior to the commencement of on-site work or (where applicable) prior to the finalisation of the tender. Unauthorised variations may result in the WYAAS being unable to recommend discharge of the archaeological recording condition to the Local Planning Authority and are made solely at the risk of the contractor.

#### 8.4 Monitoring

This exercise will be monitored as necessary and practicable by the WYAAS in its role as 'curator' of the county's archaeology. The WYAAS should receive at least one week's notice in writing of the intention to start fieldwork. A copy of the contractor's Risk Assessment should accompany this notification.

#### 8.5 Valid period of specification

This specification is valid for a period of one year from date of issue. After that time it may need to be revised to take into account new discoveries, changes in policy or the introduction of new working practices or techniques.

Any queries relating to this specification should be addressed to the WYAAS without delay.

#### West Yorkshire Archaeology Advisory Service

David Hunter October 2015

West Yorkshire Archaeology Advisory Service Registry of Deeds Newstead Road Wakefield WF1 2DE Telephone: (01924)306798.

Fax: (01924) 306810

E-mail: dhunter@wyjs.org.uk

#### Appendix 2: List of digital photographs

CD of photographs (in JPG & TIFF formats) deposited with the West Yorkshire Historic Environment Record

Number	Subject
d01	General view of the watermill buildings, from the south
d02	General view of the watermill buildings, from the north-east
d03	South gable of Building 1, from the south-east
d04	Building 1, from the south-east
d05	South gable of Building 1, from the south
d06	East side of Building 1
d07	General view of the buildings, from the west, at upper ground floor level
d08	West side of Building 1, at upper ground floor level
d09	South side of Building 2, at upper ground floor level
d10	West side of Building 2, at upper ground floor level
d11	North side of Building 1
d12	East side of Building 1
d13	Building 1: tops of blocked arches in south side of west ground floor room
d14	Building 1: south-west corner of west ground floor room
d15	Building 1: west ground floor room, from the south
d16	Building 1: cattle troughs in east ground floor room, from the east
d17	Building 2: ground floor, from the north-west

#### Appendix 3: Contents of the project archive

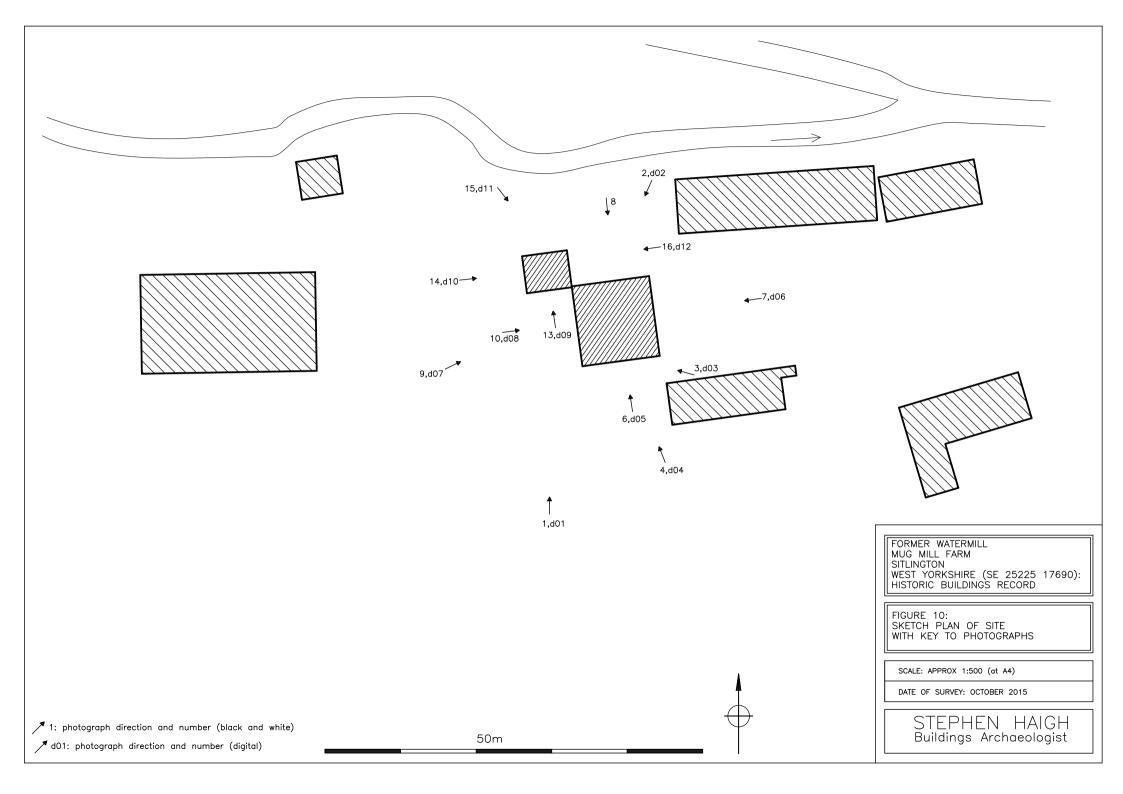
To be deposited with the Wakefield office of the West Yorkshire Archive Service

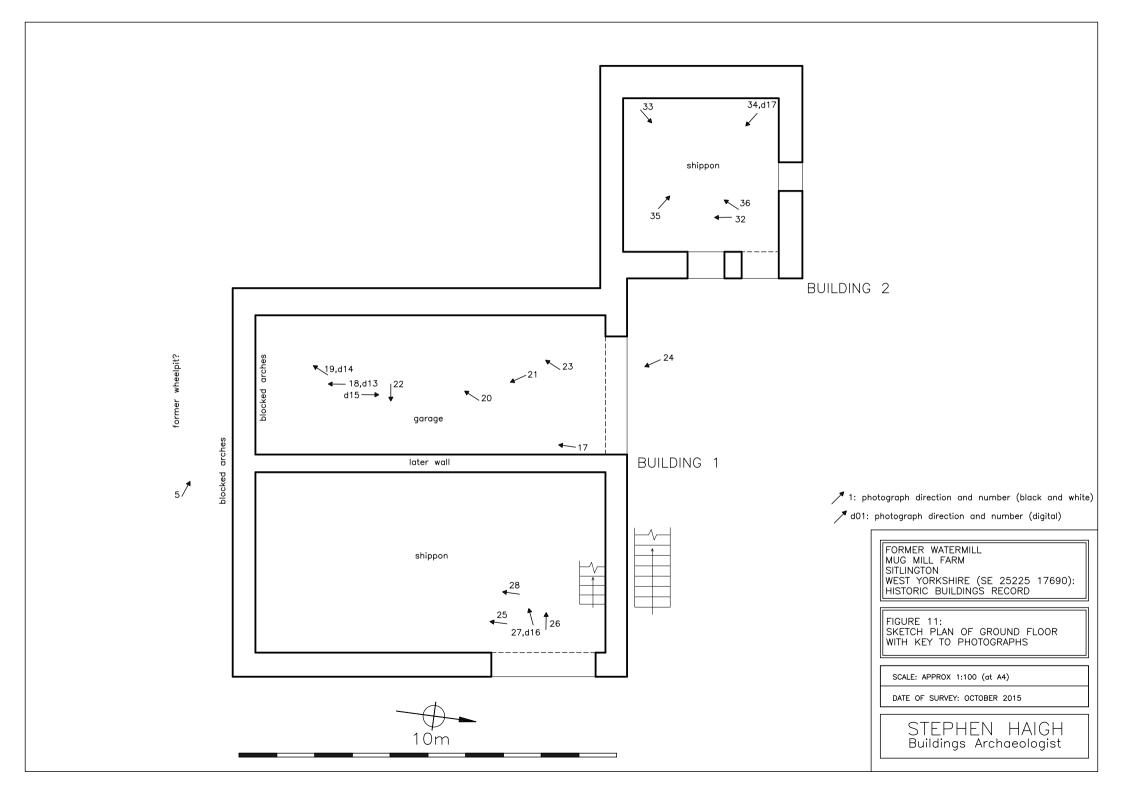
#### 1 file, containing:

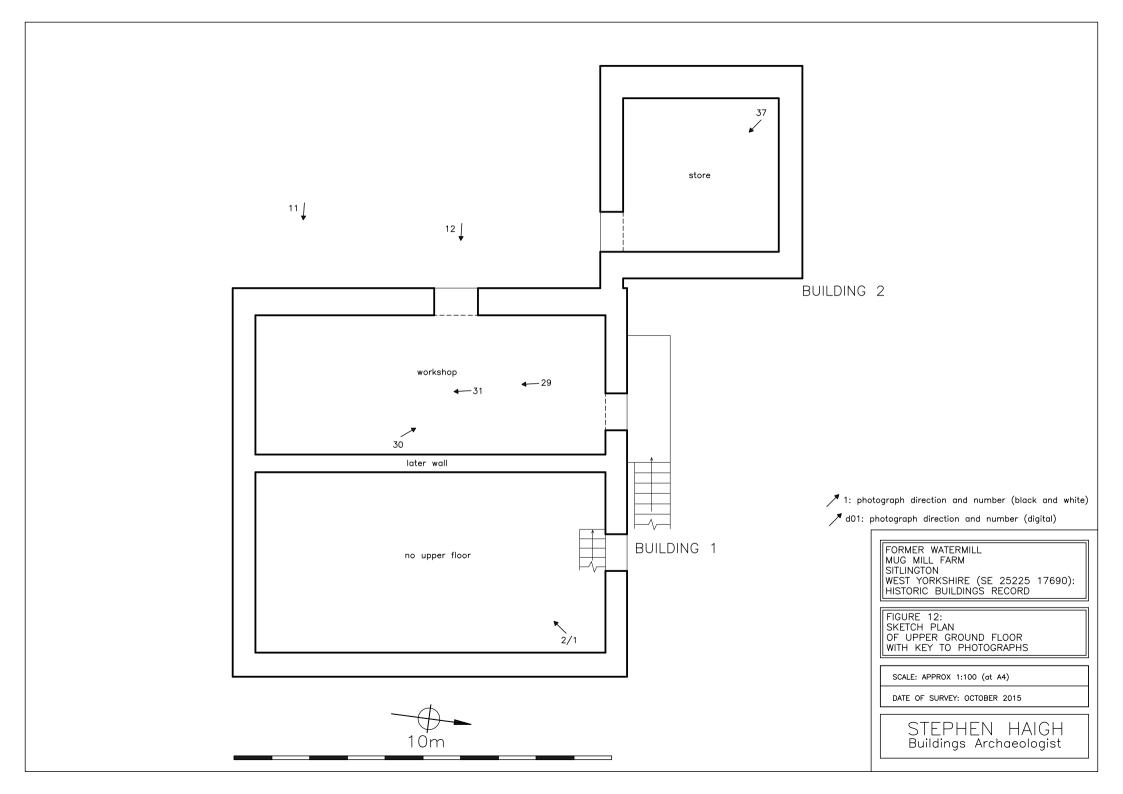
- a copy of the report
- photographic contact sheets (3 no)
- site notes including "room data sheets"

#### Complete list of black and white photographs taken, in film order

Photo	Film	Frame	Subject		
7	1	1	East side of Building 1		
2	1	2	General view of the watermill buildings, from the north-east		
8	1	3	North side of Building 1		
16	1	5	East side of Building 1		
15	1	6	North side of Building 1		
14	1	7	West side of Building 2, at upper ground floor level		
9	1	8	General view of the buildings, from the west, at upper ground floor level		
10	1	10	West side of Building 1, at upper ground floor level		
13	1	11	South side of Building 2, at upper ground floor level		
1	1	12	General view of the watermill buildings, from the south		
4	1	13	Building 1, from the south-east		
6	1	14	South gable of Building 1, from the south		
3	1	15	South gable of Building 1, from the south-east		
5	1	17	Blocked arches in south side of Building 1		
26	1	18	Building 1: cattle troughs in east ground floor room, from the east		
28	2	1	Building 1: roof structure over east ground floor room, from the north		
25	2	2	Building 1: east ground floor room, from the north		
27	2	4	Building 1: cattle troughs in east ground floor room, from the east		
17	2	5	Building 1: west ground floor room, from the north		
18	2	6	Building 1: tops of blocked arches in south side of west ground floor room		
19	2	7	Building 1: south-west corner of west ground floor room		
20	2	8	Building 1: west side of west ground floor room		
21	2	10	Building 1: east side of west ground floor room		
23	2	11	Building 1: west side of west ground floor room		
24	2	12	Building 1: east side of west ground floor room		
22	2	13	Building 1: detail of bearing box, east side of west ground floor room		
36	2	14	Building 2: detail of re-used, moulded ceiling beam, on ground floor		
33	2	16	Building 2: ground floor, from the south-west		
32	2	17	Building 2: cattle stall on ground floor, from the north		
35	2	18	Building 2: ground floor, from the south-east		
34	3	1	Building 2: ground floor, from the north-west		
30	3	2	Building 1: upper ground floor room, from the south		
29	3	4	Building 1: upper ground floor room, from the north		
31	3	5	Building 1: roof truss over upper ground floor room, from the north		
37	3	6	Building 2: upper ground floor, from the north-west		
12	3	7	Doorway in west side of Building 1, at upper ground floor level		
11	3	8	West side of Building 1 (south end), at upper ground floor level		







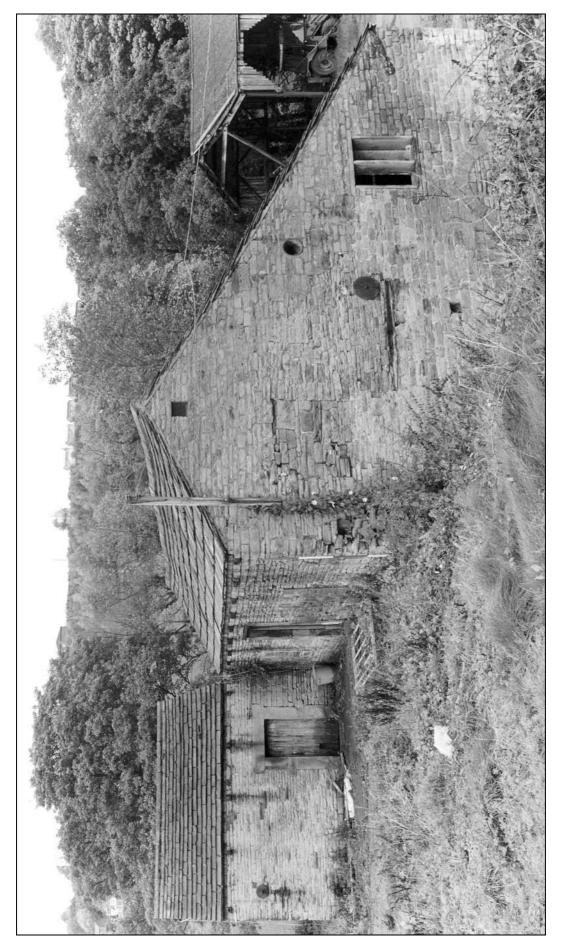


Photo 1: General view of the watermill buildings, from the south (film 1, frame 12)

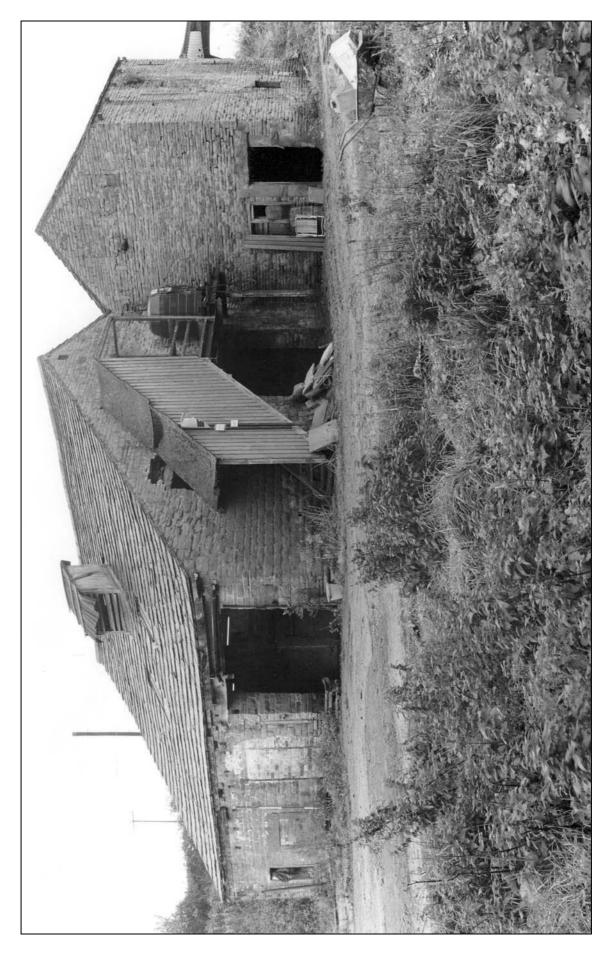


Photo 2: General view of the watermill buildings, from the north-east (film 1, frame 2)

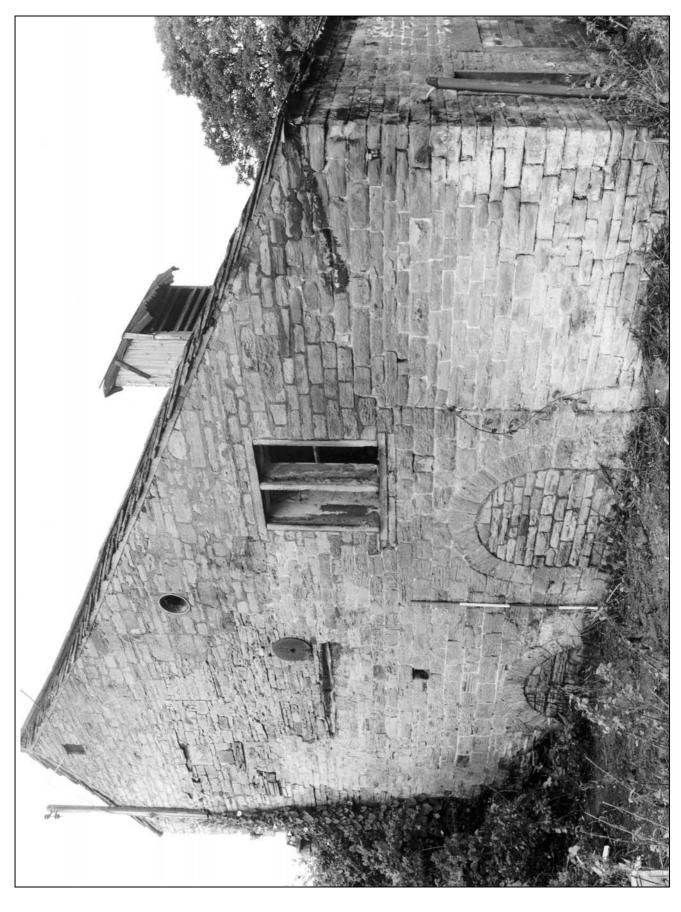


Photo 3: South gable of Building 1, from the south-east (film 1, frame 15)



Photo 4: Building 1, from the south-east (film 1, frame 13)

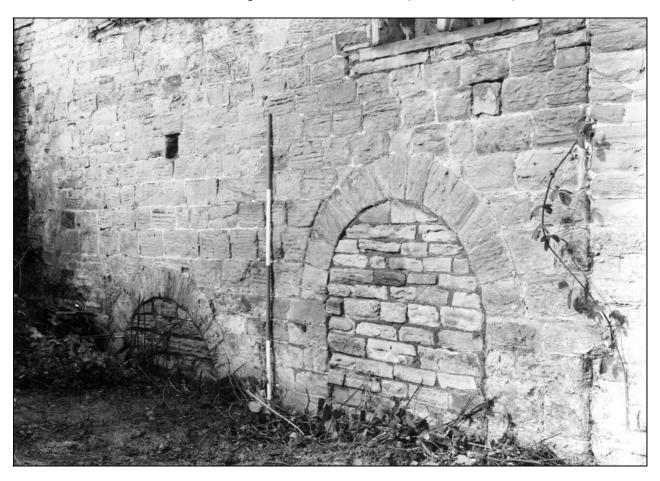


Photo 5: Blocked arches in south side of Building 1 (film 1, frame 17)

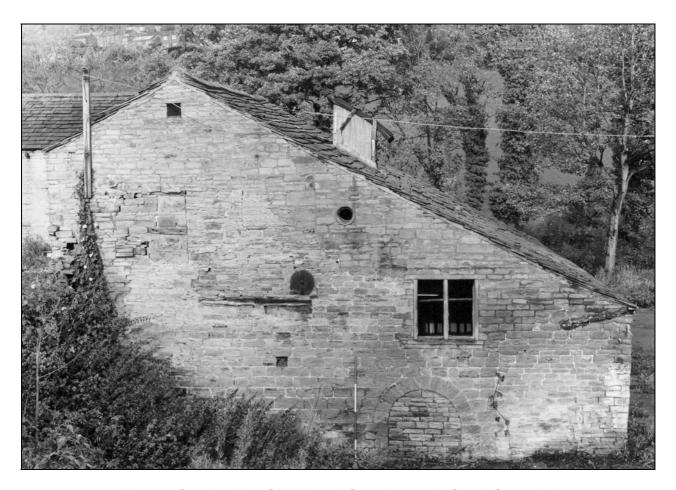


Photo 6: South gable of Building 1, from the south (film 1, frame 14)



Photo 7: East side of Building 1 (film 1, frame 1)

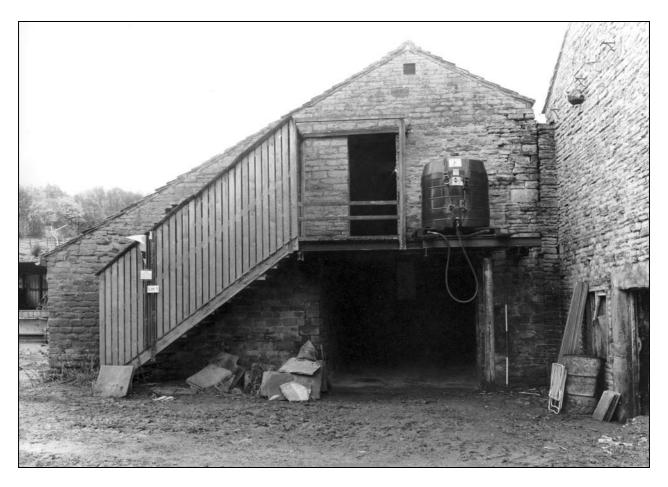


Photo 8: North side of Building 1 (film 1, frame 3)



Photo 9: General view of the buildings, from the west, at upper ground floor level (film 1, frame 8)

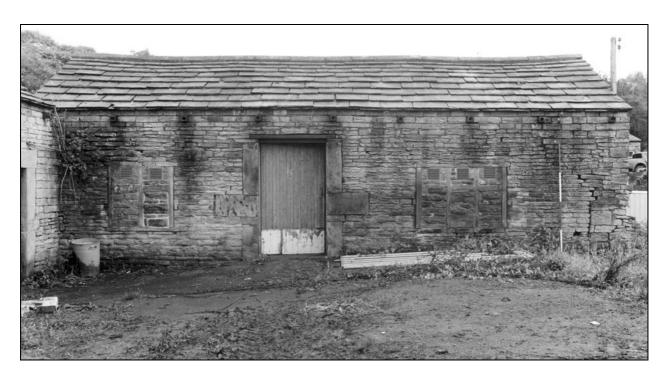


Photo 10: West side of Building 1, at upper ground floor level (film 1, frame 10)

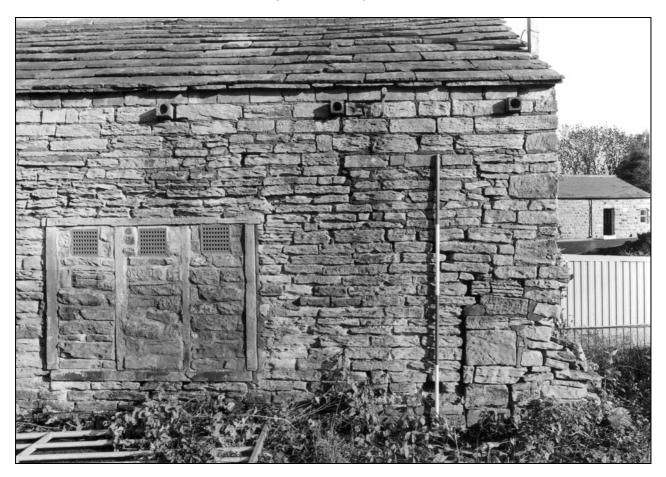


Photo 11: West side of Building 1 (south end), at upper ground floor level (film 3, frame 8)

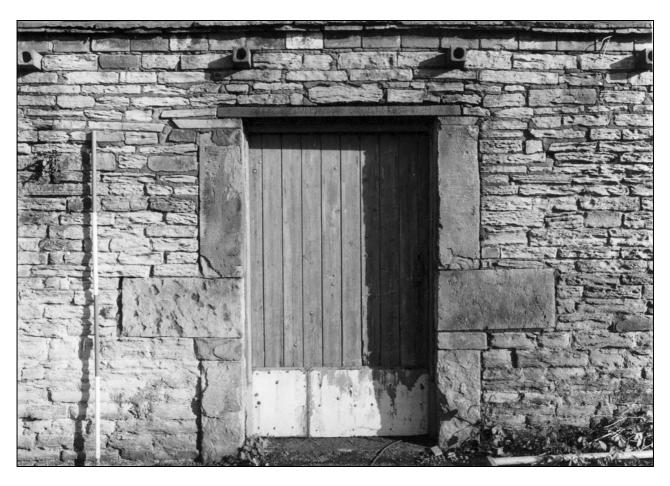


Photo 12: Doorway in west side of Building 1, at upper ground floor level (film 3, frame 7)



Photo 13: South side of Building 2, at upper ground floor level (film 1, frame 11)



Photo 14: West side of Building 2, at upper ground floor level (film 1, frame 7)



Photo 15: North side of Building 1 (film 1, frame 6)



Photo 16: East side of Building 1 (film 1, frame 5)



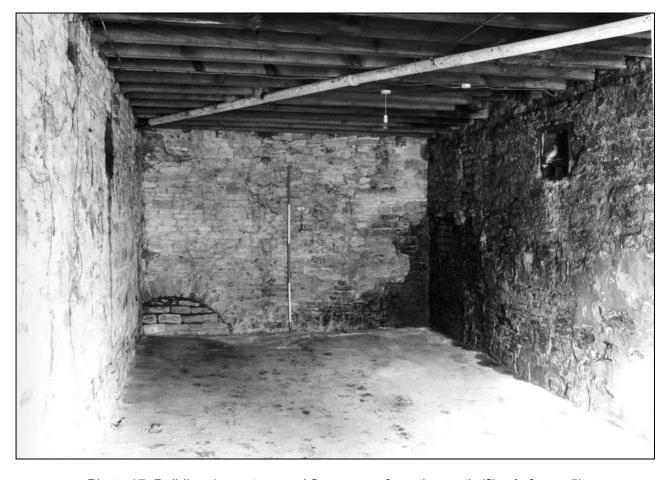


Photo 17: Building 1: west ground floor room, from the north (film 2, frame 5)



Photo 18: Building 1: tops of blocked arches in south side of west ground floor room (film 2, frame 6)

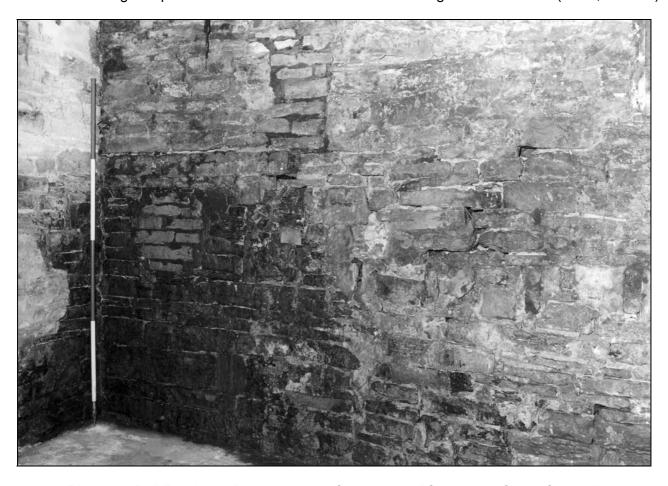


Photo 19: Building 1: south-west corner of west ground floor room (film 2, frame 7)

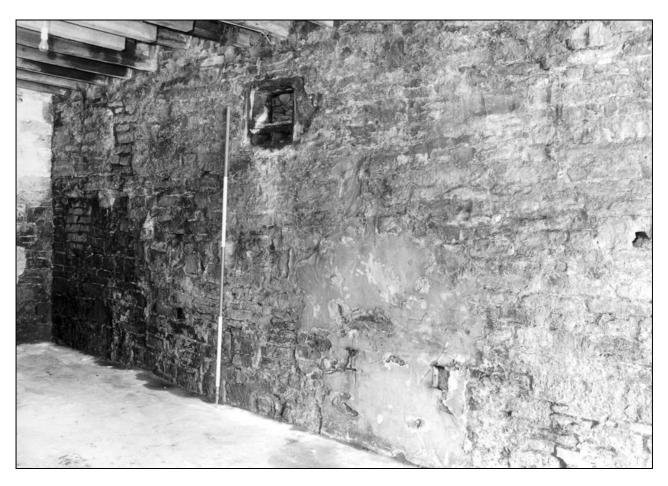


Photo 20: Building 1: west side of west ground floor room (film 2, frame 8)

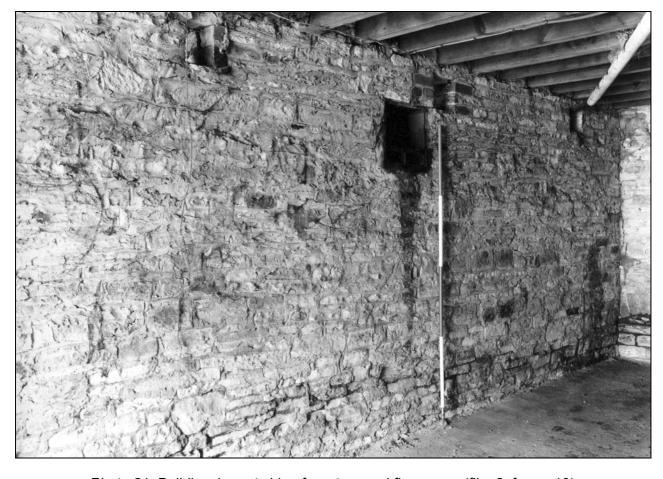


Photo 21: Building 1: east side of west ground floor room (film 2, frame 10)



Photo 22: Building 1: detail of bearing box, east side of west ground floor room (film 2, frame 13)

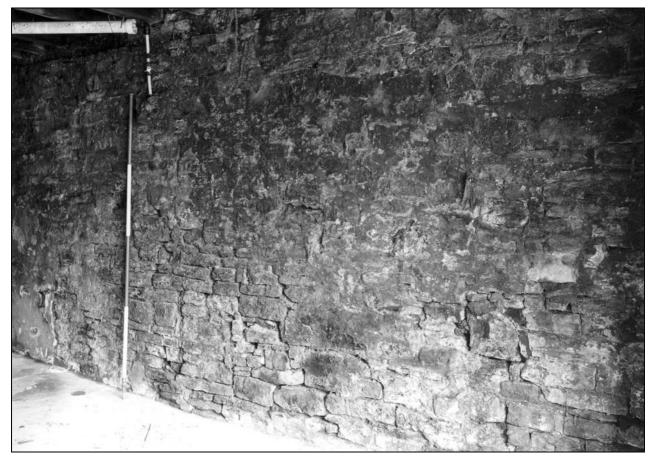


Photo 23: Building 1: west side of west ground floor room (film 2, frame 11)



Photo 24: Building 1: east side of west ground floor room (film 2, frame 12)

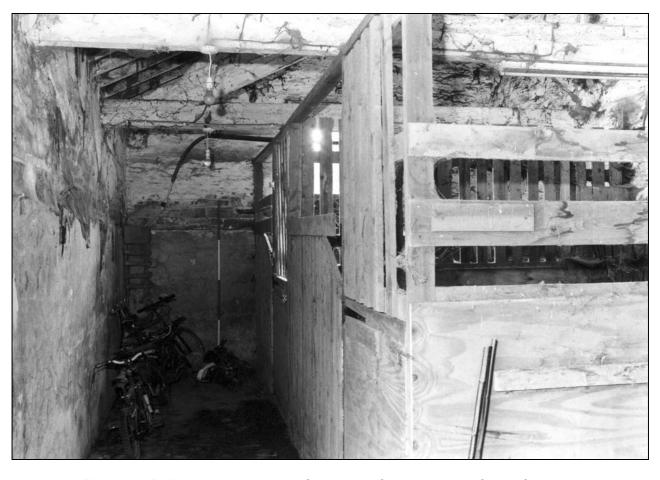


Photo 25: Building 1: east ground floor room, from the north (film 2, frame 2)

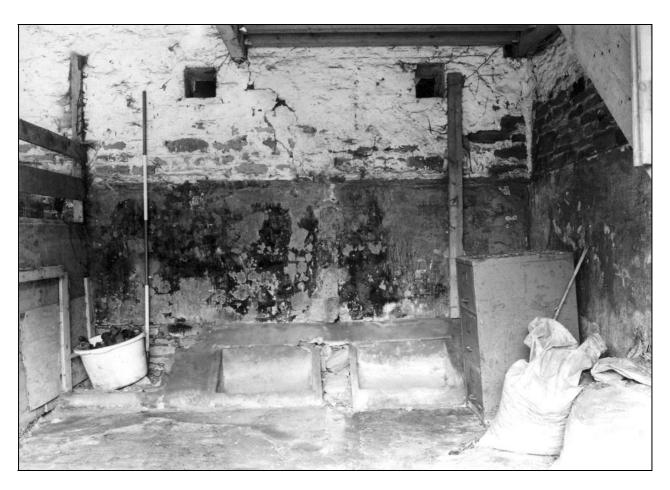


Photo 26: Building 1: cattle troughs in east ground floor room, from the east (film 1, frame 18)



Photo 27: Building 1: cattle troughs in east ground floor room, from the east (film 2, frame 4)



Photo 28: Building 1: roof structure over east ground floor room, from the north (film 2, frame 1)

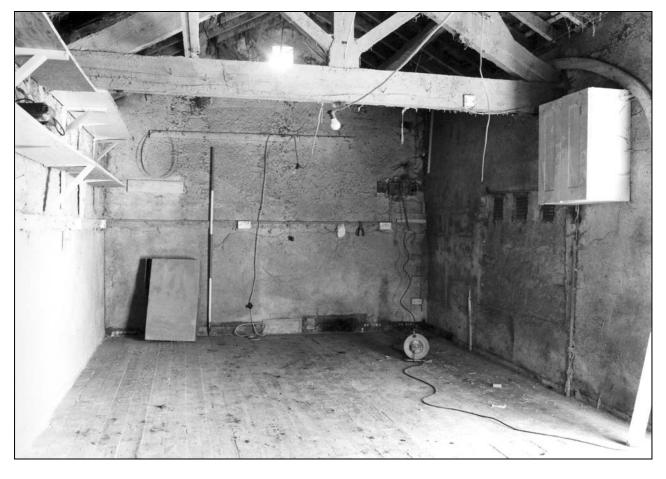


Photo 29: Building 1: upper ground floor room, from the north (film 3, frame 4)

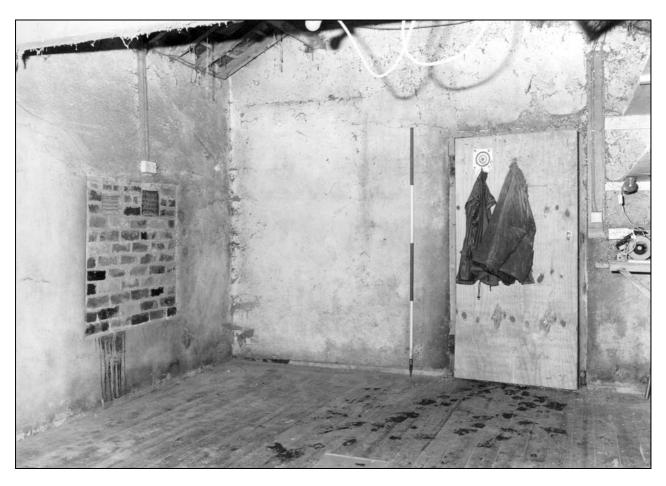


Photo 30: Building 1: upper ground floor room, from the south (film 3, frame 2)

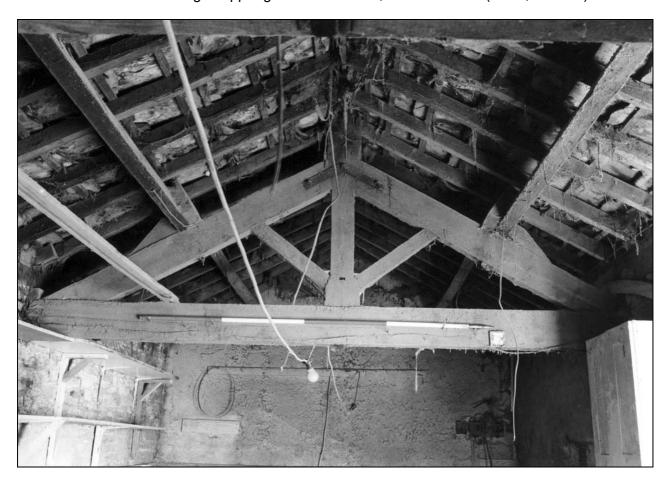


Photo 31: Building 1: roof truss over upper ground floor room, from the north (film 3, frame 5)



Photo 32: Building 2: cattle stall on ground floor, from the north (film 2, frame 17)



Photo 33: Building 2: ground floor, from the south-west (film 2, frame 16)

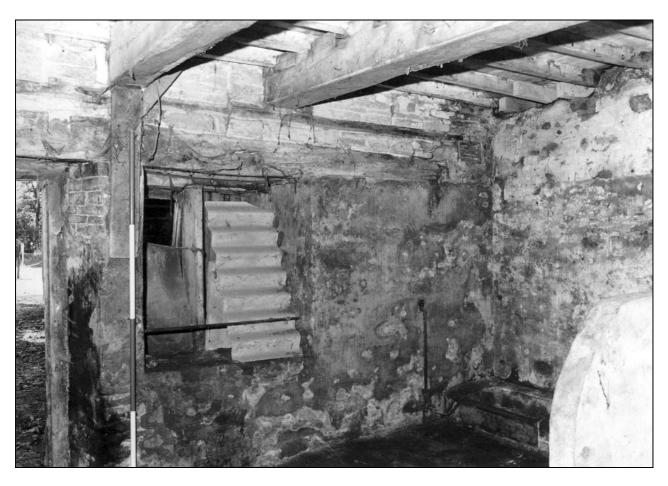


Photo 34: Building 2: ground floor, from the north-west (film 3, frame 1)

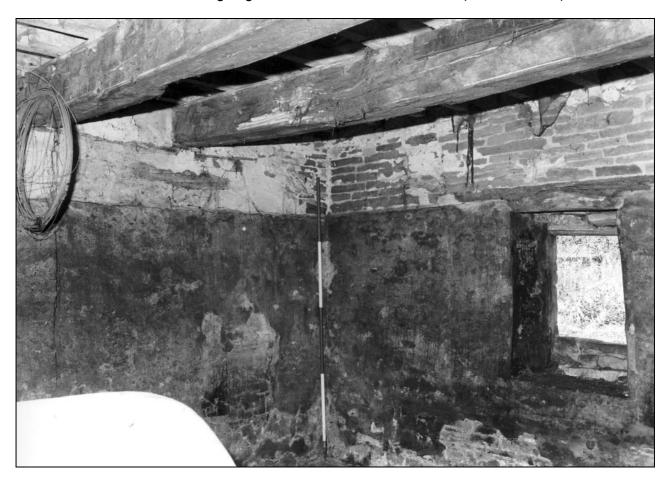


Photo 35: Building 2: ground floor, from the south-east (film 2, frame 18)



Photo 36: Building 2: detail of re-used, moulded ceiling beam, on ground floor (film 2, frame 14)

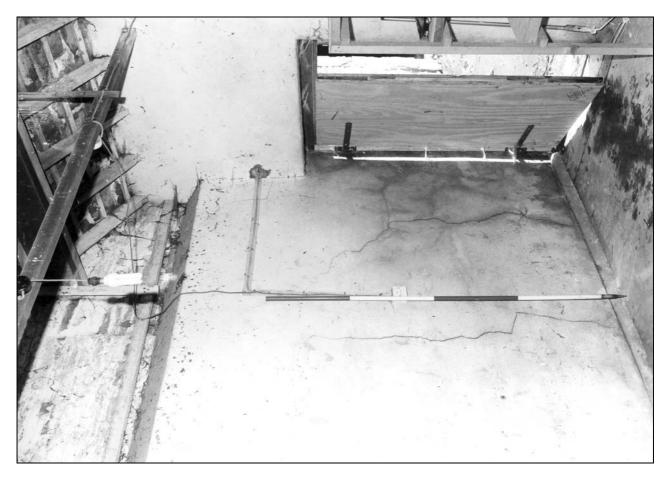


Photo 37: Building 2: upper ground floor, from the north-west (film 3, frame 6)