SHOBROOKE MILL, SHOBROOKE, DEVON

HISTORIC BUILDING RECORDING

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Martin Watts

1 Trinity Cottages
Cullompton
Devon
EX15 1PE

Project SMS257

HISTORIC BUILDING RECORDING OF DISUSED BUILDINGS AT SHOBROOKE MILL, SHOBROOKE, DEVON

Summary

A former water-powered corn mill and adjoining buildings, including a former threshing barn and cider house, together with other disused agricultural buildings, at Shobrooke Mill, Shobrooke, Devon, were recorded prior to their conversion to domestic use. The buildings are generally of 18th and 19th century date, and the watermill, which retains the remains of a waterwheel and some machinery. was rebuilt after a fire in 1898. The lower stone walls of the mill are possibly of 18th century date; the oldest building of the group is a cob walled barn, which has been substantially repaired and re-roofed.

Introduction

This report has been compiled at the request of the property owner, to record the historic fabric which will be affected by the proposed conversion of a former corn mill and adjoining agricultural buildings to domestic use. Planning Permission and Listed Building consents were granted by Mid Devon District Council on 25-26 January 2018, references 17/01613/FULL and 17/01614/LBC. The report follows a Written Scheme of Investigation submitted to the Historic Environment Team (HET) of Devon County Council for an archaeological/historic building survey and recording required in accordance with paragraph 141 of the *National Planning Policy Framework* (2012) and the Local Development Framework Policy on Archaeology.

It is proposed to convert the former mill and adjoining buildings (1, 1a and 1b - see site plan) to a single dwelling house, with service areas and a workshop at ground floor level, to mitigate against possible flooding. The first floor of the cob barn (2) is to be converted to form two 2-bedroom holiday flats and the brick shed (3) converted to a small site office at first floor level with a service area below. The linhay (4), which is not included in this record, is to be repaired and maintained as it stands.

The former watermill (DCC HER MDV 1134) is not listed. The former mill house, which stands to the east of a public right of way and above the buildings which are the subject of this report, is identified as 'The Mill, Shobrooke Mill Farm' on the statutory list. The house was listed Grade II in November 1984 (list entry number 1162281; DCC HER MDV 88511). However, there is no reference in the listing description to the mill or to any of the adjoining and adjacent buildings which are the subject of this report.

A non-intrusive site survey was carried out by Martin and Susan Watts on 16 April 2018. The building recording broadly conforms to Level 2-3 as set out in *Understanding Historic Buildings: a guide to good recording practice* (English Heritage 2006).

Digital copies of this report will be deposited with the Devon County Council Historic Environment Service and uploaded onto the OASIS (Online AccesS to the Index of archaeological investigationS) database under the identification number martinwa1-317966.

This report is intended to be read with the drawings and photographs attached. The drawings are based on plans and elevations prepared by Levett Surveying, kindly supplied by Jane Green RIBA.

Location
Shobrooke Mill is situated about 2 miles (3.2 km) due east of Crediton, towards the south end of the irregularly shaped Shobrooke parish, NGR SS 8698 0018. The mill complex stands at about 35m above Ordnance Datum. The mill and outbuildings, including a linhay and barn, enclose a rectangular yard which is set below a public right of way to the east, which separates the mill complex from the former mill house. The underlying geology is Permian strata, specifically of the Crediton Breccia Formation, which is described as a 'reddish brown, poorly to moderately cemented breccia with a silt, sand and clay matrix. Clasts mostly less than 4cm. Clasts of sandstone, siltstone, slate, shale, hornfells, chert, acid lava and tuff, quartz-porphyry, vein quartz, and a variety of tournalinised rocks. Poorly developed bedding in units mostly over 1m thick. Thin interbedded or lenses of red mudstone throughout.' (BGS).

Historical background
There are references to watermills in Shobrooke in the later medieval period and a lease of 1571 refers to two corn mills on Fulford manor (DALSS, 1148M/Box 1/Leases/Crediton). From later documents, one of these may be identified as Shobrooke Mill. By the mid 17th century the mill is referred to as 'Toe Mill' (DALSS, Z1/48/9/19a-b), an alternative (and unexplained) name that persisted into the late 19th century. In 1693 a 'tenement and grist mill called tomill' are referred to in a lease (Z1/27/18/1) and a lease of 1761 refers to a 'Grist mill called Toe Mill', which held the customary multure of the tenants of Shobrooke manor (Z1/27/18/3). This description indicates that it was the lord's mill and that his tenants were obliged to have their grain milled there. The mill was owned by the Fulford and Tuckfield families of Fulford manor, later Shobrooke Court, for much of its working life.

In 1824 the mill was advertised to let, described as flour and grist mills, with two water-wheels, three pairs of millstones and a dressing mill (for producing fine flour), together with a dwelling house 'nearly adjoining', 'a good Garden, Cellar, Stable, &c and one Acre of Arable and Four Acres of Pasture Land'. It was then occupied by John Rowdon (*Exeter Flying Post*, 18 March 1824, 1b). At the time of the Tithe Apportionment of 1841 the mill was owned by Richard H Tuckfield Esq and leased by John Rowdon, whose total holding there was a little over 43 acres (about 17.5 ha). William Greenslade is recorded as corn miller in trade directories for 1850 and 1857 and John Sharland as farmer and miller from the 1860s (Bodman 2016, 54). In 1867-8 Messrs Bodley's Old Quay Foundry in Exeter undertook some millwright's work for John Sharland, including turning a waterwheel gudgeon (DALSS, Bodley Journals, 67/5/2/1 fo788, in Bodman 2016, 54).

In December 1898 the mill was destroyed by fire:

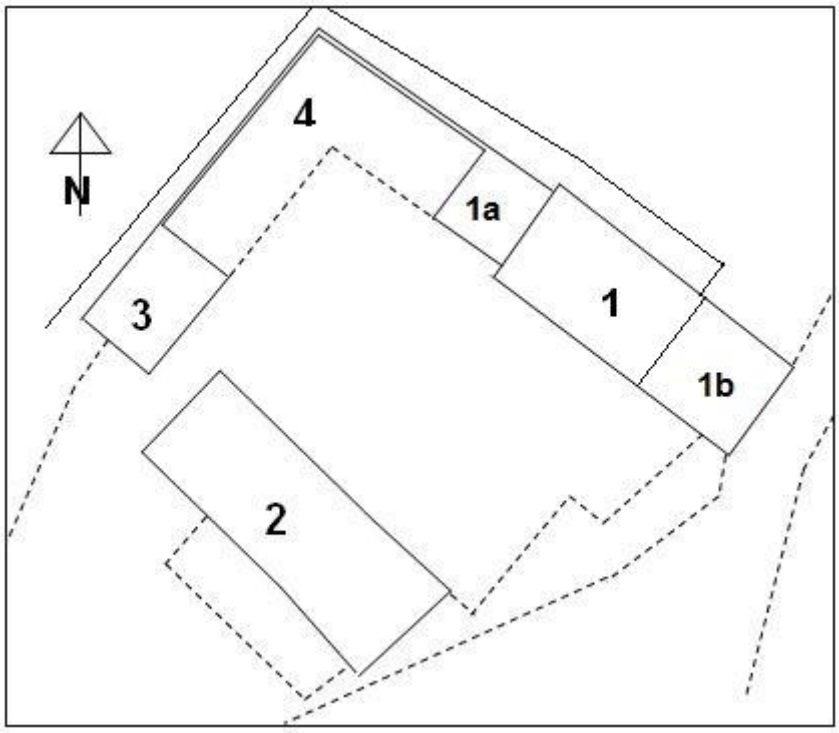
> 'Shobrooke Flour Mills, about 2½ miles from Crediton, in Devonshire, were totally destroyed by fire in the early hours of Thursday December 23. It is clear that the mill was silent, as the fire is said to have been discovered by the daughter of the occupier, who, on looking out of her bedroom window shortly before midnight on Wednesday Dec 22, noticed that the mill was burning. The mill is described as a brick and slate building, and was completely burnt out with its plant and stock, while an adjoining barn which contained a thrasher and other machinery, shared the same fate. No estimate of the damage is given, but both the occupier of the mill (Mr Sharland) and the proprietor (Sir John Shelley) are said to be insured. Overheated bearings are believed to have caused this fire.'
> (from *The Miller*, 3 January 1898, transcribed in Simmons, 947)

The extent of the fire damage is unclear, but the lower stone walls and (probably) the waterwheel appear to have survived, to be used in the rebuild which apparently took place shortly after. The waterwheel was used latterly to drive iron gearing and shafting from which drives were taken to various items of agricultural machinery, including a threshing machine. In 1935 the property was to let, described as a 'first class red land farm known as Toe Mills, of 153 acres. Good farm house, two cottages and ample buildings, with waterwheel. Apply Mr F W Sharland on the premises.' (*Exeter and Plymouth Gazette*, 8 November 1935 and *North Devon Journal*, 14 November 1935, in Bodman 2016, 54).

It is not known when the waterwheel was last used, although it is understood that the cast-iron machinery within the mill was partially destroyed, apparently for scrap, in the 1960s (pers comm). The waterwheel remained *in situ*, in a partially collapsed state, until 2017.

The cob barn, linhay and brick outbuildings appear to have continued in agricultural use into the early 21st century. The cob barn in particular shows evidence of several phases of recent repair.

Description of the buildings



Site plan, showing layout of buildings

Generally

The mill (1) stands on the north-east side of a small enclosed yard, the surface of which is now partly obscured and overgrown. It falls from the south-east to the north-west, with a drain which runs from it and empties into the tailrace channel along the north-west side of the linhay range. Abutting the north-west end of the mill is a brick building which was formerly used as a cider house (1a) and adjoining the south-east end is a former threshing barn (1b). An L-shaped linhay (4) forms the north-west corner of the yard. There is a two-storey brick building (3) to the left of the entrance to the yard and a stone and cob barn (2) along the south-west side, which faces the mill. This has an open-fronted lean-to on its south-west

(road) side. There were formerly buildings along the east side of the yard, below the retaining wall to the driveway. There are stone steps up to the bank in front of the threshing barn which also give access to the driveway above this side of the yard.

The water supply to the mill was by a leat taken from a weir across the Shobrooke Lake some 0.6 km to the north of the site. The end section of the leat above the mill is artificially embanked. The final section of the headrace appears to have been infilled for the installation of a septic tank, water being taken to the wheel via a narrow channel and angled timber launder (now gone) which fed the main launder above the wheel. The wheelpit is on the north-east side of the mill, with the tailrace channel running around the adjoining buildings which form the north-west corner of the group. There is standing water in the wheelpit and tailrace channel. The original course of the stream loops around the meadow to the west of the mill site.

1. The Mill

The mill is of two storeys with a loft. The external ground floor and wheelpit walls are of random rubble stone to first floor level, with brickwork above. The brickwork is generally of Flemish bond, with alternate stretchers and headers in each course. The stonework includes local sandstone, volcanic trap and some granite. The principal elevation to the yard has three ground floor openings, with a central doorway. All three openings have unusual heads which are formed with two stretcher courses of brick set diagonally (see photographs). The opening to the left of central doorway had a ledged and braced elm boarded shutter (now displaced) in an elm frame. The opening to the right has been bricked up. The central door is a split, stable-type door, with vertically boarded, ledged and braced leaves, the bottom with wide butt-jointed planks, the top with tongued and grooved boards and a wooden stock lock on its inside face. There are two timber shuttered window openings at first floor level, and central loading door, all with brick arched heads.

South-west front of mill, with the threshing barn, right and cider house, left

The wall at the end of the leat and upstream end of the wheelpit is of rubble stone, with some brickwork. The wheelpit, which is 2m wide, is now partly filled with rubble and debris. The outer pit wall is of rubble stone with concrete capping. The section which supported the outer wheelshaft bearing has partly collapsed. There is a circular brick opening where the shaft of the waterwheel entered the building and remains of the launder support beams and the iron spindle with two small diameter shrouded pinions which formed part of the penstock control projecting from the rear wall of the mill. At first floor level, above the waterwheel position, is a vertically-boarded door with a concrete cill, and bricked-up window openings with brick arched heads at both ground and first floor levels. Part of the upper wall is obscured by ivy. There are X-shaped wall tie plates at first and second floor levels on both the front and rear elevations of the mill. There is a window opening at loft level in the north-west gable of the mill, with the remains of a timber-framed casement window under a timber lintel. The gable verges have cement capping.

The threshold of the ground floor doorway is formed with half a millstone, of sandstone conglomerate, about 1m in diameter. There is some brick paving set at an angle inside the doorway, the remainder of the floor being concrete, with brick edging to the cog and machinery pits. The interior walls are of rubble stone up to about first floor level, with brick above, and were formerly whitewashed. The north-west wall, to the cider house, is one brick (23cm) thick up to eaves level, the gable being half-brick (12cm) thick with brick pilasters. At ground floor level, towards the north-west wall, is a cast *in situ* concrete machine base with hold-down bolts. The cog pit, which runs along the inside of the rear wall, is L-shaped, 0.8m wide at the pitwheel and extending further into mill to accommodate the gearing at its south-east end (see plan). Along the inner edge of the cog pit is a three brick high wall, with a 19 x 31cm[1] circular-sawn timber along its top which supports the inner wheelshaft bearing pedestal.

Inside the bricked-up ground floor window on the front elevation is a slot in the masonry of the cill and there are remains of hold-down bolts in the floor close by, with a timber spout above, presumably to feed a machine fixed in this position.

The mill is a three bay building at first and loft floor levels, the bays being defined by two main cross beams which run from front to back. These beams are of pine, about 20 x 15cm in section, economically converted. The downstream bay is now open from the ground floor to the roof, although on the inside face of the north-west gable wall is a diagonal mark which appears to show the position of a ladder from the first floor up to the loft, indicating that this bay was originally floored. In the central bay is a sturdy timber ladder up to the first floor, which is floored with ex 18cm wide circular-sawn boards on circular-sawn joists, 7 x 2cm section, with noggings between them. The joists span between the cross beams, into which their ends are housed. There is a third cross beam set about 20cm off the upstream wall. The position of the sack traps can be seen in both the first and loft floors. A timber post close to the sack way position has some pencilled graffiti on it, including the date 1904. There is a doorway through the south-east wall at first floor level, with a step up to the upper floor of the former threshing barn. The loft floor of the mill was not accessible at the time of survey.

The roof is of four bays, carried on three softwood trusses. The feet of the king posts are bolted through the tie beams, and there are angled struts notched into the king posts and the undersides of the principals. Some carpenter's or assembly marks are visible on some of the

[1] Timber dimensions are given as depth x width (horizontal) and face x thickness (vertical)

trusses (see photograph). The ends of the tie beams are supported on brick pilasters, the walls between these pilasters being of single/half brick thickness. There are two rows of purlins to both roof slopes, which support common rafters and battens. The roof slopes are clad with non-interlocking diamond pattern concrete tiles.

Waterwheel

The waterwheel had largely collapsed due to failure of its timber arms, and sections of iron castings, both intact and broken, were removed from the wheelpit in 2017. It was fed with water from a timber trough or launder at the top, in the manner of an overshot wheel, but rotated in the opposite direction, so it can be described as pitch-back. It is about 14ft (4.27m) in diameter by 4ft 6in (1.37m) wide and of fairly typical construction for a mid-late 19th century waterwheel in Devon, with a timber wheelshaft, cast-iron centres or naves, two sets of eight radial timber arms, and cast-iron shrouds which carried 48 timber buckets and sole boards. No millwright's or founder's inscription was noted on the castings which have been rescued, although not all faces were readily accessible and some further details may be found when they are cleaned down and repaired.

Waterwheel castings laid out after removal from wheelpit

Gearing

The pitwheel is cast iron, the centre with eight T-section radial arms being a single casting with a multi-faceted central opening about 65cm across, for wedging onto the timber wheelshaft. About one quarter of the iron cog ring, which is bolted to the ends of the arms, has been smashed off. It carried 128 wooden cogs, the shanks of which were retained by wooden wedges. The gear pitch is approximately 6cm (2¼ inches). This gear meshed with a bevel pinion on its upstream side, which has been almost completely destroyed. It was about 1m maximum diameter with four T-section arms and 44/45 teeth. Its centre is keyed to a 7cm diameter hammered iron horizontal shaft, which ran in plain bearings. At its upstream end this shaft carries a spur gear, a single casting some 1.17m overall diameter, with about 72 teeth of 5cm (2 inch) pitch. One third of this gear has been smashed off. It formerly drove a

horizontal layshaft through a spur pinion, both now missing. The shaft ran in three plain bearings bolted to upright timber posts, which are still in place. A secondary drive shaft set just below first floor level in the downstream bay was driven by belt and took the drive through to the apple crusher. In the middle bay at loft level is a second horizontal layshaft, which has a grooved pulley at its upstream end.

Pitwheel, left, and remains of gearing

1a. Cider house

Adjoining the north-west end of the mill is a small brick building which was formerly used as a cider house. It has double doors facing the yard, under a timber lintel with a brick relieving arch over. The ledged and braced doors are modern replacements, in a plain oak frame. There is a shuttered window opening above the doorway, which lit the loft, and a two light timber casement window with a timber cill under a brick arched head in the rear (north-east) wall, which lit the ground floor. The doorway has a stone threshold and the ground floor, now much obscured by debris and logs, may be partly cobbled. The internal walls are of brick, with the exception of that to the mill which is of rubble stone up to about 2.5m and has a blocked central doorway which was 1.1m wide. The upper part of this wall is of English bond brickwork. The internal walls were originally whitewashed.

There is a loft (for storing apples) over half of this space. Its floor is carried on twelve joists of 18 x 6.5cm section, which span from the wall to the linhay to a 20 x 18cm cross beam. This beam has an additional timber bolted on its underside across the middle of the span and there is a planked upstand across its top. Under the north-east end of the front of the loft is an apple mill or scratter, comprising two coarsely cogged iron rollers in a timber frame which is partly built into the brick wall on the north-east side and partly hung from the front beam. The mill was driven from the waterwheel by a shaft which enters through the wall in the south-east corner. This shaft has a split-cast iron pulley close to its north-west end and a solid cast-iron pinion which meshed with a larger cast-iron spur pinion which drove directly onto one of the two rollers. Two-thirds of the larger gear have been smashed off. There is a

braced horizontal timber block with a hole through it close to the south-west end of the front beam, which indicates the position of a vertical winch. This would have been used to provide additional leverage to the cider press (now gone), which was probably positioned against the east wall. The loft floor was not accessible at the time of survey.

Front of apple loft and scratter, to right, in cider house

The single roof truss is of simple construction, with the ends of the tie beam built into the wall heads supporting the feet of the principal rafters. There are vertical struts at both ends which rise from the tie beam to under the purlin positions. The original purlins are located on cleats on the backs of the principals. Two further purlins have been added on both slopes to carry the corrugated sheet roof cladding. Some rafters remain in place to the west of the truss.

1b. Threshing barn

The ground floor of the former threshing barn is accessed on the yard side through a doorway which has a diagonal brick head, the same as those to the mill, with a stone pier on its right side and a bricked-up second doorway, also with a diagonal brick head. The ground floor walls are of similar construction to those of the mill, with stone and brickwork above, but there is a clear building break between this building and the mill. There is a six light timber casement window under a timber lintel with a brick relieving arch over at first floor level on the yard elevation. A similar window on the wheelpit elevation is obscured by ivy. There is an opening in the south-east gable end, with a brick-arched head and double vertically-boarded ledged shutters hung on strap hinges.

North-east elevation of threshing barn

The ground floor is a damp, unlit space, built into the slope of the ground to the south-east and north-east. The first floor is carried on circular-sawn softwood cross beams, of about 20 x 15cm section, with 15 x 8cm joists at about 48cm centres spanning between them. The downstream bay has an additional cross beam at mid span and the central bay has two front-back cross beams as well as one each side. A number of timber posts have been inserted under these beams (see plans).

The first floor has brick walls, with wide double doorways front and back. The double doors are planked, ledged and braced. There are brick buttresses which project externally on both sides of these doors. The doorway to the rear is accessible from outside ground level, above the end of the wheelpit and that to the front can be reached by a narrow path along the top of the wall to the yard.

The roof has three trusses of similar construction to those in the mill, but the ends of the tie beams are set into the walls, rather than being on brick pilasters. There are two brick piers, which are not the full height of the wall, which project inwards on both sides of the windows in the north-west bay. The timber floor, which is decayed at the south-east end, is cross-boarded between the pairs of double doors. The roof is contiguous with that of the mill, the slopes being clad with non-interlocking diamond pattern concrete tiles. The verges of the south-east gable end have cement capping.

2. Barn

The barn along the south-west side of the yard is the oldest surviving building of the group, although it has been much repaired, with large areas of its cob walls rebuilt in brick and concrete blockwork. This is particularly apparent on the yard elevation. The cob walls are built off a low rubble stone base. The rear wall (roadside elevation) is of cob, stone and brick, with a stone buttress. The floor of the main central part of the barn falls to the north west.

North-east/yard elevation of cob barn

The upper (south-east) end of the barn is divided from the lower part by a cob cross wall on a stone base. This space is entered through a doorway, both sides of which have been rebuilt in brick, under a timber lintel. To the right of this doorway is a window opening with a timber frame and vertical iron bars. The ground floor is solid (?concrete). The back wall, which has a timber lintel built into it, has been partially rebuilt with concrete blockwork. The first floor, which is only accessible from a doorway through the south-east gable end, is of timber boards on joists that run over the tops of two sparingly converted 'rustic' beams which span south-east to north-west. Some timber blocks and packing have been introduced on the beams to level the joists. This space was possibly used as a cider cellar at some time, from the evidence of the barred window opening.

The lower part of the barn has three entrances from the yard. That to the left has a plain timber frame with a split door hung on strap hinges. The central opening has a plain frame, the split door leaves being displaced. There is a vertically-boarded door directly above it at first floor level. The lower end opening is full height, now without doors or shutters.

The ground floor is cobbled, laid to a fall with a well-defined cobbled gutter running parallel with front wall. The cobbles are also laid to define the central doorway as the principal entrance. There is evidence that the space was formerly divided into stalls, presumably for cattle. There is a concrete feed trough along the central part of the rear wall and remains of a timber manger above it at the north-west end. A further section of timber manger is displaced outside. The cob wall behind the trough has been substantially repaired or rebuilt with concrete blocks. The first floor is carried on four cross beams, which have timber posts supporting them at about mid span. The ends of these beams are built into the cob of the rear wall and supported on blockwork columns at the front, where the wall has been substantially rebuilt. The beams are pit sawn, about 26 x 26cm section, with timber plates spiked to their faces to carry the ends of the joists. The joists are of softwood, of 13 x 5cm section at about 40cm centres. A metal ladder to the right of the central doorway gives access to the first

floor, which is timber boarded, with an opening about 0.7m wide along the back wall, for dropping feed through to the mangers below. The first floor walls are of cob with blockwork repairs, the front wall having been largely rebuilt. Both gable ends are of cob, with concrete blockwork forming their apexes, indicating that the roof was originally half-hipped.

The roof is carried on five triangulated angle iron trusses, which define seven bays. There are three purlins on each slope and paired ridge purlins. The roof is clad with corrugated sheet metal, with three translucent panels evenly spaced towards the top on both slopes.

Along the external rear (south west) wall is a five bay lean-to roofed shed, with re-used timbers, about 20cm square, forming posts. These are set about 2.1m apart, and have 22 x 7.5cm circular-sawn timber rafters notched and bolted to their heads. The upper ends of the rafters are built into the barn wall. The lean-to roof is clad with Bridgwater clay tiles hung on nibs on battens.

Lean-to extension on road side of cob barn

3. Store/shed

To the west of the entrance to the yard is a two-storey brick building which is divided into two sections. Its yard (south east) elevation is predominantly in English bond, single brick (23cm) thick, with some variation in the coursing between the two doorways and at its north-east end. The two doorways which face into the yard have brick relieving arches and timber lintels. That to the left-hand opening appears to be a re-used timber. This opening has vertically-planked ledged and braced double doors, outward opening, hung on forged strap hinges. The right-hand opening has a single vertically-planked wide ledged and braced door, also outward opening. The feet of the plain timber door posts sit on cut stone blocks. There is an iron strap along part of the yard elevation above first floor level at south-west end and cross-tie rods from front to back and side to side. At first floor level are two shuttered openings to the yard elevation, that to the left with its head under the wall plate, that to the right with a brick relieving arch.

South-east elevation of brick store building, with linhay to right

The south-west gable end is largely obscured by ivy. The brickwork appears to be English bond. There are remains of iron water pipes which enter through the gable wall, which served the ground floor of the shed and ran through into the ground floor of the linhay, which was also latterly divided into stalls. There appears to have been a water tank located outside of the south-west gable, where there are remains of a concrete floor. The wall of the north-west elevation of both this building and the linhay (4) are also of English bond. A small rectangular opening has been punched through brickwork at back of shed, lighting the feed passage along the inside of the back wall.

The interior is divided into two spaces by a 23cm thick brick wall. The floor at the south-west end is of cobbles and concrete; that of north-east end is randomly cobbled, with a brick and concrete feed trough on the floor parallel with the rear wall. Behind this is a feed passage which also runs the length of the linhay. There is a plain timber-framed doorway in the brick wall between the two spaces. That at the south-west end is open to the roof. The gable wall is of single (23cm) brick up to eaves level, then half brick thick with brick pilasters, of similar construction to that of the mill. The pilasters support the mid-span and ridge purlin ends. There is a bricked-up opening in the gable end, with an arched head.

Internally the brick walls were formerly whitewashed. The left-hand end is open to the roof, with two cross tie rods running above head height from front to back, and a single one in the opposite direction. The roof is carried on a single king post truss. The foot of the king post is bolted through tie beam and has shoulders from which struts rise to the underside of the principals. The ends of the tie beam are built into the wall heads. There is a single purlin running over the back of the principals on both slopes, which supports common rafters and battens. The latter were originally for tiles or slates, but both roof slopes are now clad with corrugated (?asbestos) sheet. The right-hand end has a first floor, accessed by a timber steps through a trimmed opening in the south-east corner. The 14 x 2cm thick floorboards, now partly covered with straw and debris, are carried on 18 x 6cm softwood joists. The ends of

the joists bear on a timber plate built into the brick dividing wall to south west and into the brickwork to the north east. The roof to this section has a single purlin to each slope, supporting seven common rafters, and vertical ridge board. The upper part of the brick dividing wall between this building and the linhay is of similar construction to the south-west gable end.

4. Linhay

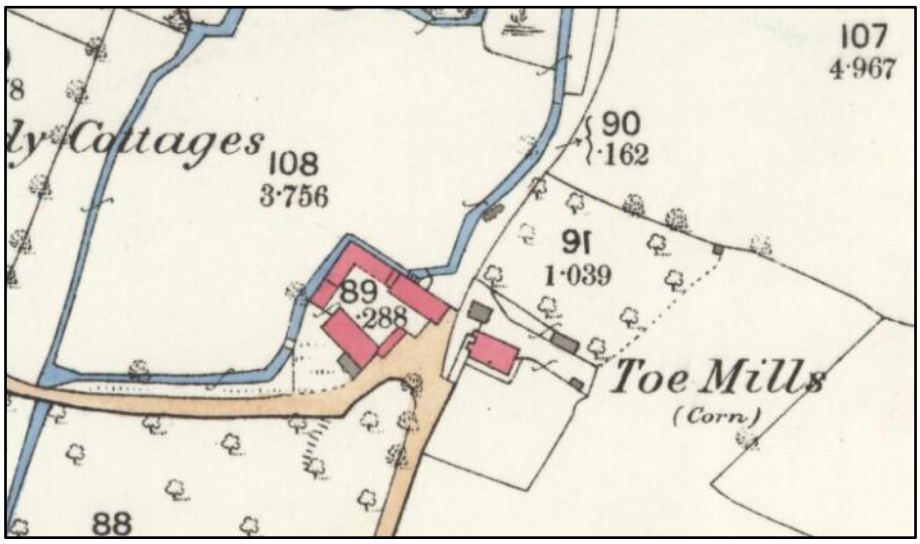
The linhay which forms the north-west corner of the group, is of traditional local form, with an open front facing the yard, as a shelter for cattle, with the loft or tallet above providing storage for fodder above. It has six bays facing the yard on the south-east side, and three wider bays along the north-east side. This building was not recorded as part of this survey.

The linhay range, looking north-west

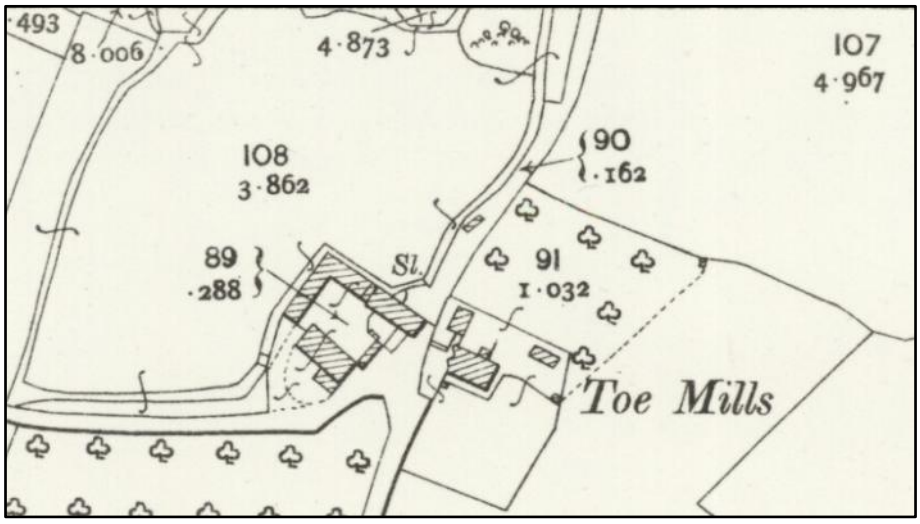
Dating and discussion

The earliest clear map evidence that shows the layout of the buildings is the Shobrooke tithe map of 1841. The mill building and the cob barn were then connected by a building running along the south-east side of the yard. By the time of the first edition of the 1:2500 Ordnance Survey map of 1888-9, the linhay and the brick building to the north-west of the entrance to the yard had been added and the building along the south-east side of the yard reduced in area. A small extension on the south-west (road) side of the barn is also shown. This plan shows the layout before the fire of 1898, but no significant change is recorded on the second edition of 1904-5. The present layout shows little change over the last century, although there are now no buildings or structures other than wall built into the slope of the ground on the south-east side.

Extract from Shobrooke tithe map, 1841 (DCC)



Ordnance Survey 1:2500, 1888 / 9 (NLS)



Ordnance Survey 1:2500, 1904 / 5 (NLS)

The stonework of the lower part of the mill walls appears to be of some antiquity, perhaps 18th century, while the upper brick walls and roof are considered to date from the rebuilding after the 1898 fire. Although the style of construction of the brickwork is similar to that of the brick store building by the entrance to the yard, which from map evidence dates from the second half of the 19th century, there are differences in the brick bonding and also the construction of the roof trusses. An interesting feature is the use of concrete roof tiles. These were developed in Germany in the mid 19th century and machinery for their manufacture came to England in the 1890s (Dobson 1959, 52). The non-interlocking tiles laid diamond-wise appear to be an early type, perhaps dating from the rebuild of the mill immediately after the fire in 1898, to provide a fireproof roofing material.

The cob barn may be of 17th or 18th century origin, although no features or details are apparent that could provide dating evidence. It has been substantially repaired with brickwork and concrete block, and re-roofed with lightweight angle iron trusses.

The mill is recorded historically as a grist (corn) and flour mill and in 1824 had two waterwheels driving three pairs of millstones and other machinery for making flour. A usual arrangement for two-wheeled mills in Devon was to have two overshot (or pitch-back) wheels in line or slightly overlapping each other in the same wheelpit, which were fed from a common launder. There is no visible evidence of a second wheelshaft opening in the pit wall at Shobrooke Mill, however, although this detail may have been lost during a rebuilding phase. The brick-lined circular opening for the last generation of waterwheel shaft can certainly not be considered as an original feature. Within the mill there is now no clear evidence of the layout of the corn milling machinery and three pairs of millstones, although there is adequate room to accommodate these within the footprint of the surviving building.

In the later 19th century waterpower was used at Shobrooke for driving milling machinery, including a threshing machine and an apple mill. In records of Devon watermills collected in the early 1970s by students in the Department of Economic History at the University of Exeter is the following note: 'Wheel restored but used for farm machinery rather than milling. 1876 steam thresher bought from Mr Code [or Cade?], Exeter for £75; could thresh 264 bushels of wheat in 20 minutes. Taken round to other farms & powered stones when necessary (3 prs).' (W E Minchinton papers). This suggests that auxiliary steam power, most likely a portable engine, was in use at the mill during the last quarter of the 19th century.

After the fire in the late 1890s, the mill appears to have been rebuilt and the waterwheel continued to be used to drive agricultural machinery. The waterwheel appears to pre-date the fire; its timber wheelshaft may well have been that fitted with the gudgeon recorded in the Bodley papers in 1867.

The layout of the machinery which survives, although it was badly damaged in an attempt to remove the ironwork for scrap in the 1960s, indicates that the waterwheel was last used to drive agricultural machinery. Belt drives could have been taken to work a number of barn machines; such items were essentially portable, rather than being fixed to the mill, although there is evidence inside the bricked-up ground floor window of a machine position. There is also the concrete mounting block, which could have been either for a machine to be driven from the waterwheel, or an ancillary engine to drive the machinery. The waterwheel also drove the apple crusher and a hoist for lifting sacks to the upper levels.

The former watermill, the linhay with its adjoining brick-built sheds and the cob barn form an important and interesting group of traditional Devon rural buildings, grouped around a small yard. They represent the two dominant forms of traditional agricultural husbandry found in Devon, corn and cattle, and there is also evidence of small-scale cider production. In agricultural terms, all of the buildings are now redundant and the remains of the working parts of the mill and cider house are considered to be too fragmentary for any economic or meaningful working restoration to take place.

Martin Watts
May 2018

Acknowledgements
I am grateful to the site owner and Jane Green RIBA for providing access and background information and to Sue Watts for help with the site survey.

References and sources

Bodman, M. 2016: *Watermills and other water-powered sites in Devon* (unpublished gazetteer)

Dobson, C. 1959: *The History of the Concrete Roof Tile* (Batsford)

Simmons, H E S: *Devonshire Watermills* (unpublished notes, Science Library, London)

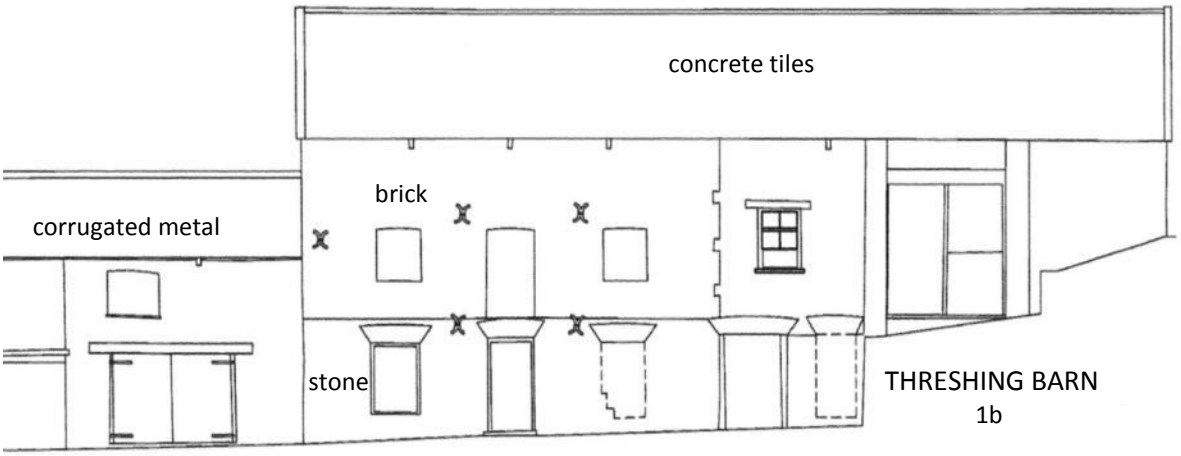
BGS: British Geological Survey: http://mapapps.bgs.ac.uk/geologyofbritain/home.html
http://www.bgs.ac.uk/Lexicon/lexicon.cfm?pub=CRBR, accessed 30.04.2018

DCC: Devon County Council: tithe maps and apportionments; Environment Viewer
https://new.devon.gov.uk/historicenvironment/tithe-map/
http://map.devon.gov.uk/dccviewer/

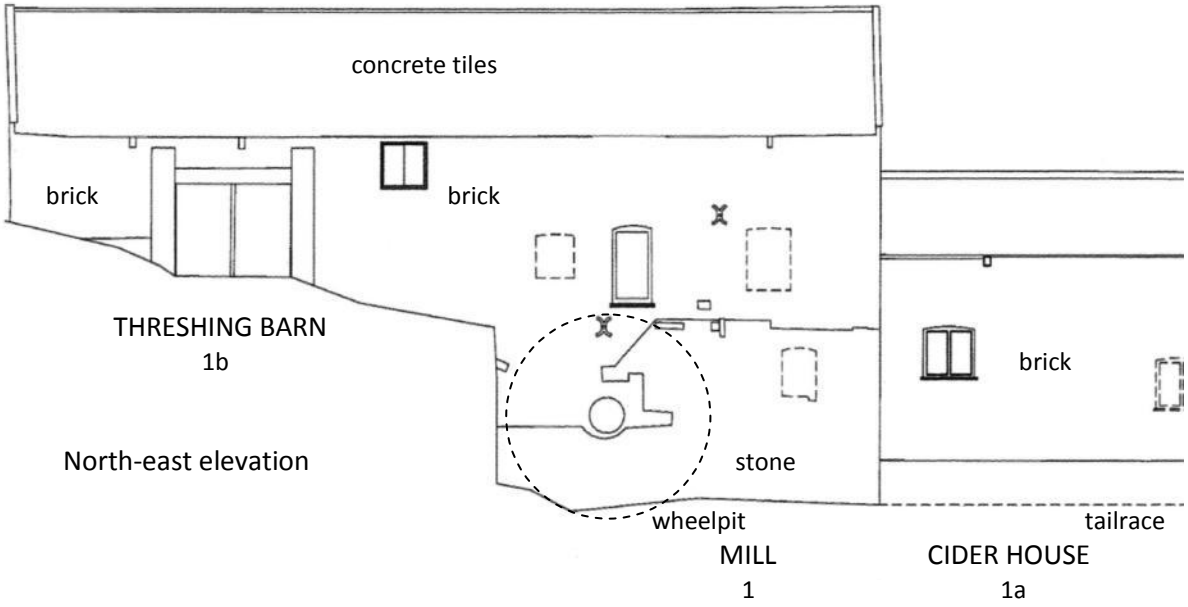
NLS: National Library of Scotland
http://maps.nls.uk/geo/find/

Photographs

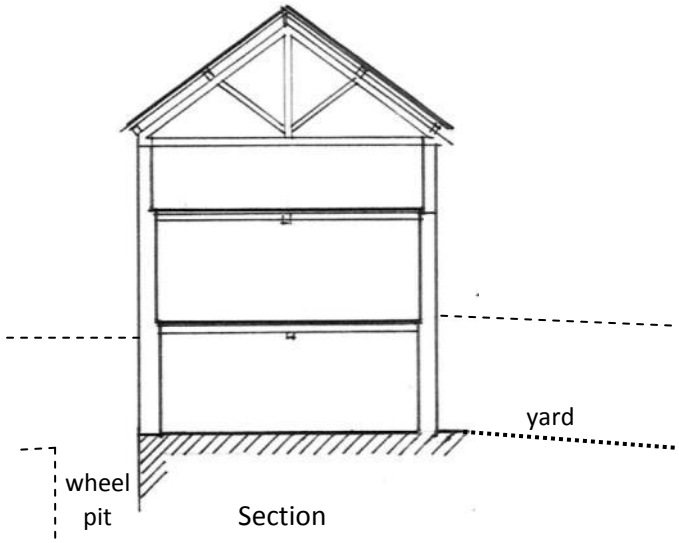
Most of the photographs in this report were taken as part of the site survey on 16 April 2018. These have been supplemented by others taken on 22 February, 11 August and 6 September 2017.



South-west elevation, to yard



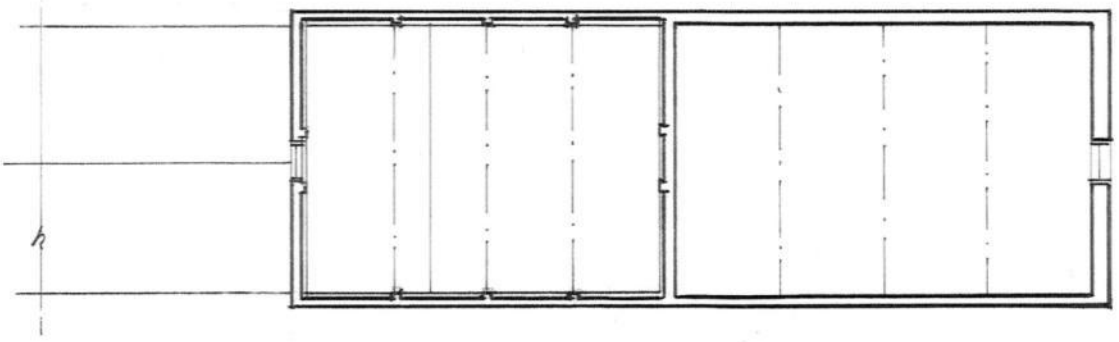
North-east elevation



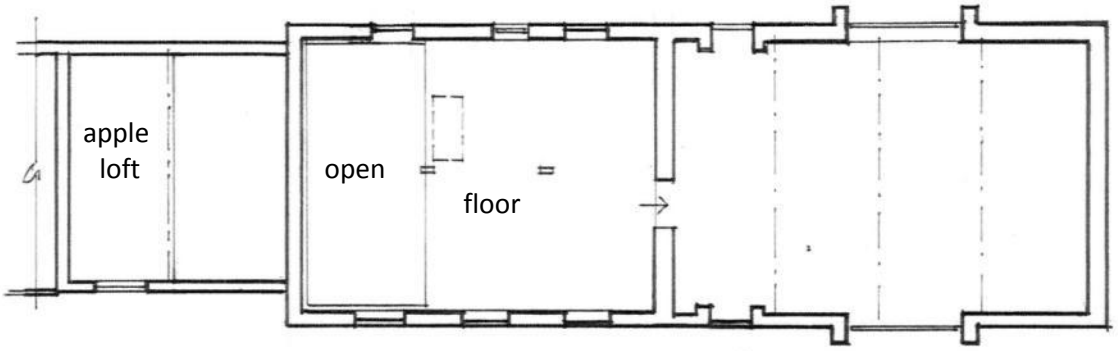
Section

SHOBROOKE MILL
(buildings 1, 1a and 1b)

5m

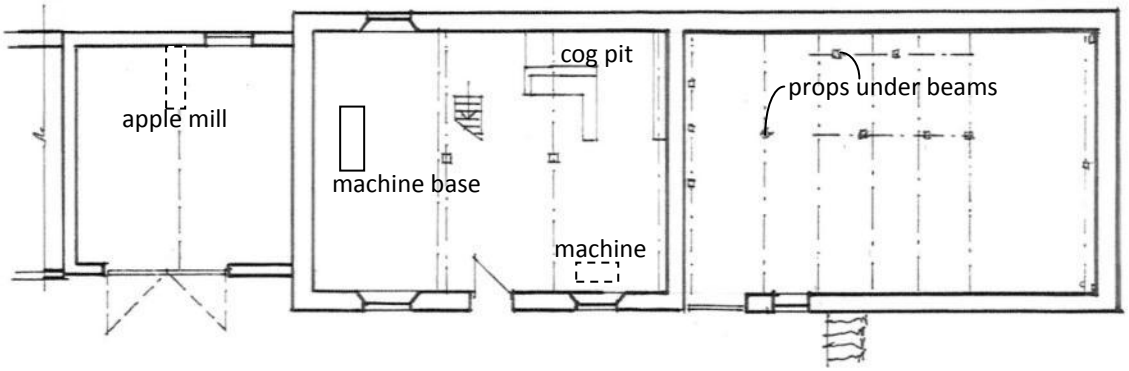


LOFT positions of roof trusses indicated



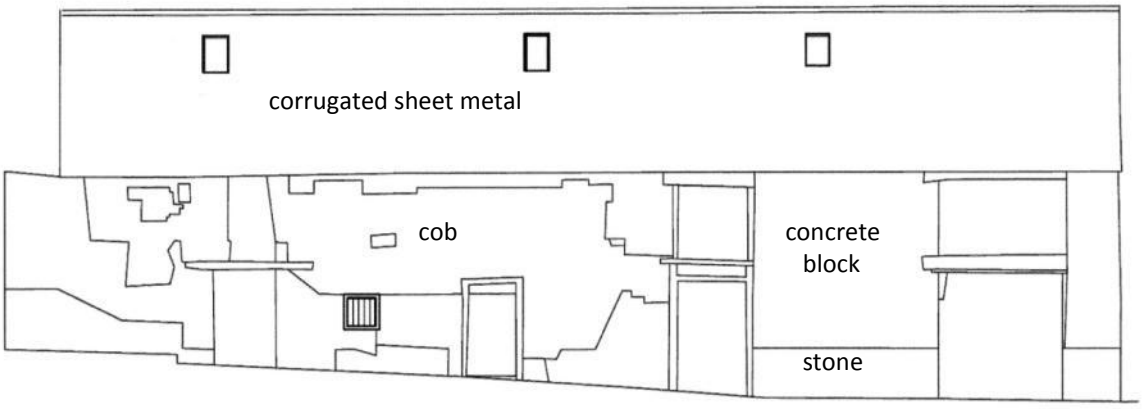
FIRST FLOOR

CIDER HOUSE 1a MILL 1 THRESHING BARN 1b

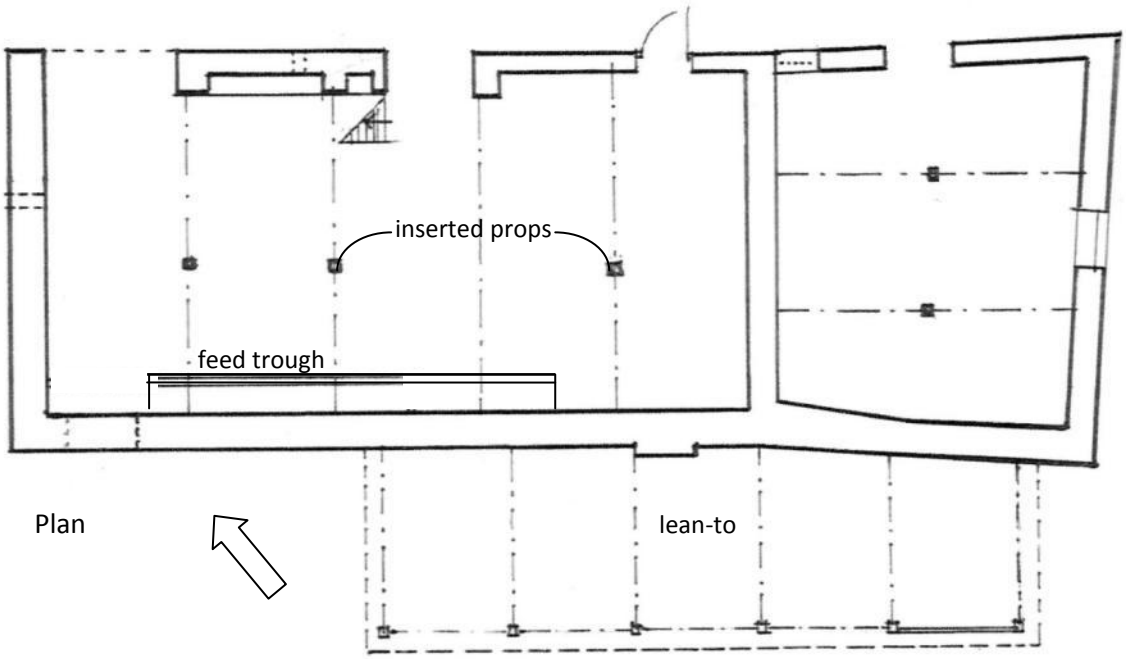


GROUND FLOOR

SHOBROOKE MILL (buildings 1, 1a and 1b) 5m



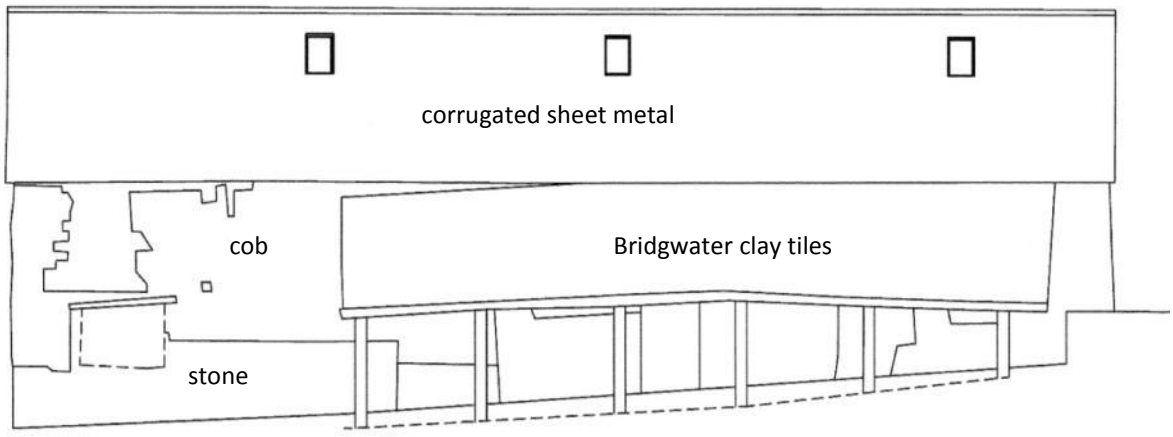
North-east elevation, to yard



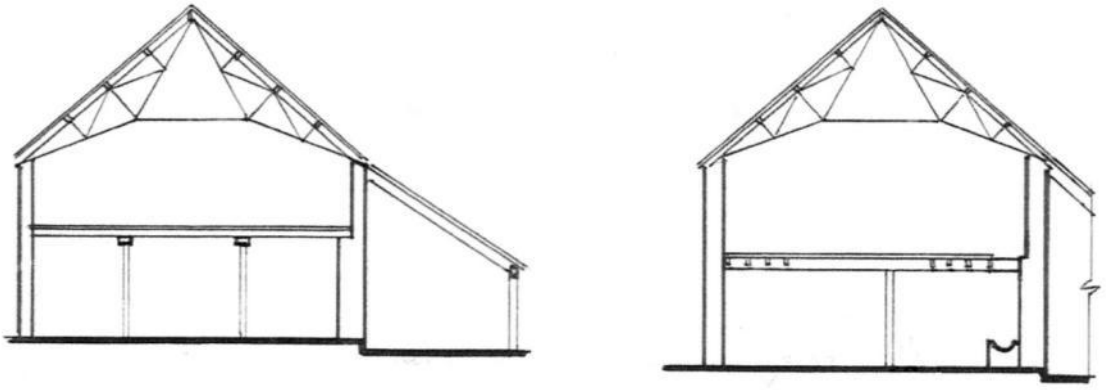
Plan

COB BARN (building 2)

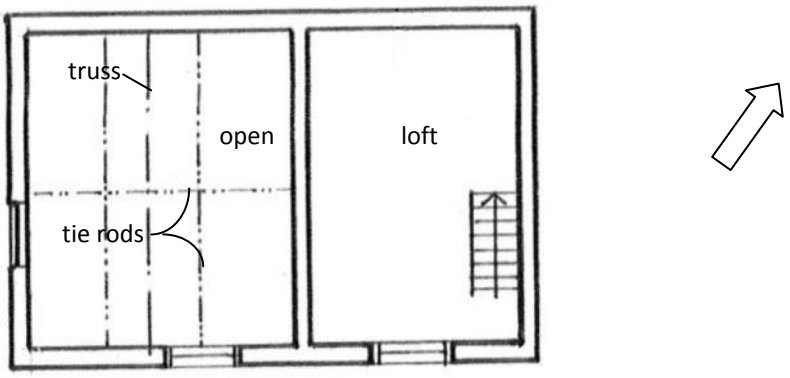
5m



South-west elevation

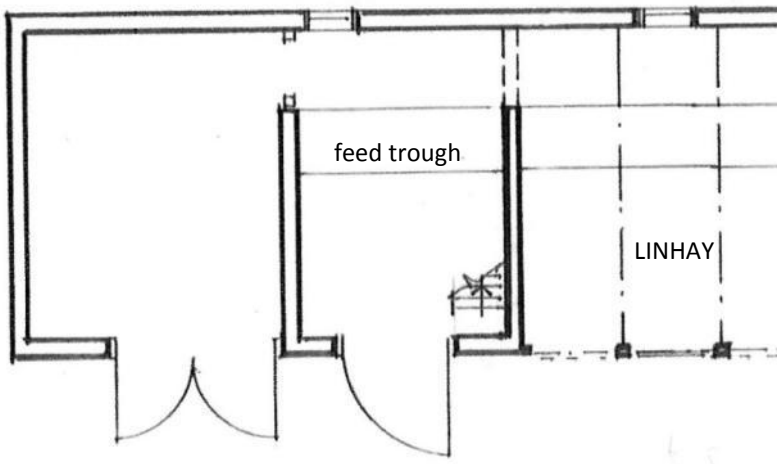


NE - SW sections through cob barn (building 2)



First floor

STORE/SHED (building 3)



Ground floor

5m

South-west front of mill, facing yard

Detail of ground floor door head, masonry and brickwork

North-east elevation of mill and cider house, looking across wheelpit

North-east elevation of cider house, with tailrace channel at foot of wall

Millstone threshold and paving inside mill ground floor door (0.5m scale)

Ground floor of mill, showing remains of machinery and steps to first floor

First floor of mill, rear (north-east) wall

Mill roof truss and end of first floor, looking up from north-west end of ground floor

Detail of truss foot in mill, showing carpenter's/assembly marks

Secondary drive shaft at first floor level in mill

Apple mill and drive in former cider house (1a)

Roof truss above apple loft in former cider house

Roof construction in threshing barn (1b)

First floor of threshing barn


Yard front of threshing barn


Undercroft of threshing barn, showing props inserted below main beams

Cob barn (2) from east

Upper end of cob barn, showing beam, prop and concrete block repairs

Cobbled floor and feed trough in cob barn, looking south-west

Detail of cobbled flooring in cob barn

Angle iron roof trusses and corrugated sheet metal cladding in cob barn

First floor of cob barn, showing cob gable end with blockwork apex

South-east elevation of brick shed/store (building 3) adjacent to yard entrance

Roof truss and tie rods in south-west end of building 3

Dividing wall between spaces in building 3, showing brick pilaster construction

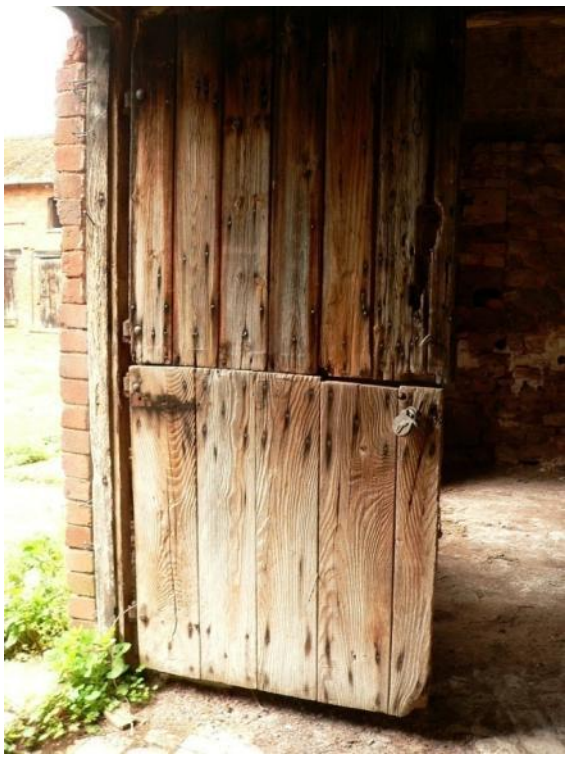
North-west elevation of building 3 (right) and linhay, building 4

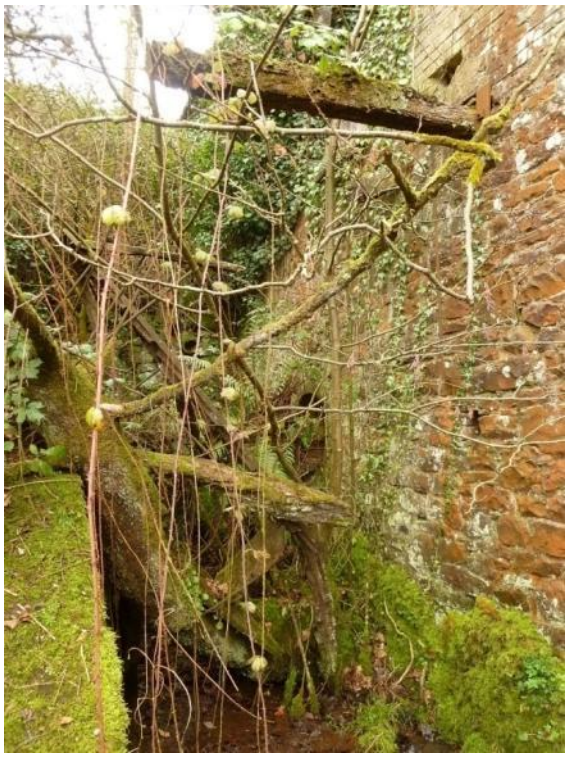
SHOBROOKE MILL


South-west front of mill, building 1


Detail of stonework, south-west elevation


Waterwheel before dismantling


Ground floor doorway into mill


Wheelpit and waterwheel, looking south-east


Half millstone reused as threshold

Pitwheel and inner bearing support

Concrete machine base

Remains of gearing

Graffiti on post at first floor level

Machine position, ground floor, south corner

Remains of sack traps, first floor

Position of former ladder to loft, NE corner

Secondary drive shaft, to cider house

Pulley and support at loft floor level

First floor doorway between mill and barn, 1b

Underside of concrete tiles, barn 1b

South-east gable end of threshing barn, 1b

Upper end of threshing barn, 1b

Doorway to undercroft with double doors to right, above, on threshing barn, 1b

Underside of apple loft, with mill

Remains of gearing to drive apple mill

Pivot point for press winch fixed under beam

Former doorway between cider house and mil

Position of former building along SE wall

Yard front of cob barn, building 2

South-east gable of cob barn

N-W gable of cob barn and yard entrance

Cobbled ground floor in cob barn

Cross wall, first floor of cob barn

< Road side of cob barn with lean-to

Lintel over doorway, building 3

Dividing wall and feed trough, building 3

First floor shutter, building 3

Internal tie rod plate, building 3

Opening in brickwork, rear of building 3

Roof truss, building 3

Cobbled ground floor, NE end of building 3

Upper wall construction, building 3