

**MANOR MILL,  
ROADWATER, SOMERSET**

**HISTORIC BUILDING RECORDING**

**September 2014**

**Martin Watts**

Project MMR245

# MANOR MILL, ROADWATER, OLD CLEEVE, SOMERSET

## HISTORIC BUILDING RECORDING

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# MANOR MILL, ROADWATER, OLD CLEEVE, SOMERSET

## HISTORIC BUILDING RECORDING FOR SHAUNA BRITTON

### Summary

*The site of Manor Mill, Roadwater, is thought to be of late medieval origin, the mill being built to grind grain for tenants in the south of the parish of Old Cleeve until the early 17th century. In the mid 19th century the site was developed for light industrial use, probably as a result of the local iron extraction industry and the building of a mineral railway down the valley, with corn milling and malting taking place alongside a workshop which was used for millwrighting and engineering. A sawmill was also set up outside the mill in the early 20th century. Although the waterwheel was removed some time ago, the primary gearing and two pairs of millstones remain in place.*

### Introduction

This report has been compiled at the request of Alina MacKinley, architect for the building owner. It follows an Historic Building Recording Proposal agreed with Shirley Blaylock, Conservation Officer, Exmoor National Park Authority, to carry out a rapid survey of the mill and the adjacent former workshop building, in order to understand more fully the evolution and phasing of the buildings and the working parts of Manor Mill, Roadwater, Old Cleeve, Somerset, TA23 0RE, prior to planning and listed building applications being submitted for conversion of the buildings to domestic use.

Manor Mill is listed Grade II (Appendix). The site is within Exmoor National Park and is included in the ENP Historic Environment Record under reference MSO10527 (Appendix).

Manor Mill was first visited by the writer on 26 November 2011, in association with Martin Bodman, for the purpose of making a brief evaluation of the mill. Site visits to carry out more detailed recording of the building and its working parts were made by Martin Watts on 24 July 2014 and Martin and Sue Watts on 7 August 2014. Background and other information has been compiled from a range of sources, which are acknowledged and referenced. The writer is grateful to Alina MacKinley (Alina Wisnicka Ltd) for providing copies of survey drawings of the mill and former workshop and also for copies of her Historical Appraisal and Design and Access Statement, which have been used in the preparation of this report.

A digital copy of this evaluation will be uploaded onto the OASIS (Online Access to the Index of archaeological investigationS) database under the identification number martinwa1-187343.

### Location

Manor Mill is located at Lower Roadwater in the parish of Old Cleeve in West Somerset (NGR ST 0343 3867). The mill stands to the south-east of the minor road that runs along the valley of the Washford River, through Lower Roadwater. The site is contained within a bend of the river, the mill and workshop being built on the floodplain, standing at about 85m above Ordnance Datum.

The underlying geology is sedimentary bedrock of the Devonian period, generally slate and sandstone with a band of limestone of the Ilfracombe Slates Formation running from the south to the north-west close to the site (<http://www.bgs.ac.uk/opengeoscience/> accessed 28.07.2014).

## **Historical background**

The parish of Old Cleeve extends from the Bristol Channel coast in the north to the Brendon Hills in the south, being some 9.5km in length with its narrowest point at Roadwater. The eastern parish boundary, with Nettlecombe, follows the Washford River for much of its course, including the bend in the river around the site of Manor Mill. The parish map in the Victoria County History (VCH) marks six principal watermill sites within the parish and summarizes their histories (Dunning (ed) 1985, 40; 48-9). Martin Bodman (2011) has counted 11 water-powered sites in the parish, for grinding corn, fulling cloth and other light industrial uses, and the presence of two corn mills fairly close together in Roadwater has resulted in their individual histories being somewhat difficult to unravel.

The earliest reference to mills in Old Cleeve comes from Domesday Book where two mills on an estate belonging to the King were valued at 54d (Thorn & Thorn 1980, 1.13). These are thought to have been located towards the northern end of the modern parish, near the site of Cleeve abbey which was established by Cistercian monks in the late 12th century. It is suggested that there was a mill at Roadwater by 1243, when Hugh the miller of the mill of Rode is recorded (Chadwyck Healey 1897, 306) and that Manor Mill is the successor of this, being the customary mill to which the tenants of Leighland (in the south of the parish) were obliged to take their grain to be milled until the early 17th century (Dunning (ed) 1985, 48). This customary obligation would appear to be qualified by the name Manor Mill (or Mills). The VCH further notes that the mill stream and mill head were diverted in the early 17th century and a second, new mill was built in about 1620 (ibid). This appears to have been the mill further up the valley which was known as Road Mill in the 18th century and latterly as Roadwater Mill. This mill is now a dwelling.

It appears that both Manor and Roadwater mills were held by the Cording family in the mid 19th century. Harry Cording was recorded as master miller at Manor Mill in the censuses of 1861, 1871 and 1881, but was running Vale Mill, higher upstream, by 1884 (Bodman 2011). 'Manor Mill (Engineering Works)' is marked on the first edition 1:2500 Ordnance Survey map of 1888 (Figure 4) and in Kelly's *Directory* for 1889 John Nethercott is listed as engineer and wagon builder at Roadwater. In the census return of 1891 Manor Mill was occupied by John Nethercott, aged 60, and his son, also John, aged 35, both of whom were listed as millwrights (Bodman 2011). A memorandum of 1896 carries the stamp of John Nethercott of Manor Mills, Roadwater, and describes him as millwright, engineer, brass founder and general smith (Figure 6). In 1901 John junior, then described as a mechanical engineer, had taken over the premises (ibid) and a listing of John Nethercott as engineer and wagon builder appears in Kelly's *Directory* for 1902. Corn milling appears to have continued on the site into the early 20th century, 'Manor Mill (Corn)' being marked on the second edition 1:2500 Ordnance Survey map of 1903. A photograph taken in about 1910 shows a sawmill set up outside (Jones & Hamilton 2010, 311 - see Figure 7). The VCH summary suggests that several of the corn mills in the parish went out of use about the time of the First World War (Dunning (ed) 1985). No millers are listed under Roadwater in Kelly's *Directory* for 1919.

The site of Manor Mill appears to have been affected by changes to the water supply in the early 17th century (see above) and in the 19th century by the construction of the West Somerset Mineral Railway. This was built in order to transport iron ore from the Brendon Hills to Watchet harbour and the section from Watchet to Roadwater and Combebow was opened in 1857. The railway continued in use after the mines closed in the early 1880s, finally closing in November 1898 (Atkinson (ed) 1997, 151-2). The railway track ran across the east of the site, the alignment of the embankment dictating the plan of some of the later buildings (Figures 4 & 5).

## **Description of the buildings**

### **Generally**

The mill forms part of a complex of buildings which formerly covered a larger area (Figures 4 & 5). The entrance to the site is between a house (formerly three small cottages) on the west side and the west gable end of a row of cottages which front the road to the north-west. The open area to the east of the mill was formerly enclosed and there is some evidence of earlier buildings within the stone walls that form the boundaries on the north-west and north-east sides of this area. There was also a building adjoining the rear of the mill (the south-east elevation), the surviving evidence for this being some former roof timbers projecting at eaves level from the pit wall and three sections of stone wall aligned south-west – north-east, running parallel with the mill wall. These diminish in height from south-west to north-east, the tallest being about 2.5m. To the south-east of this former wall the ground rises up the side of the railway embankment which cuts through the site.

### **The mill**

#### *Exterior*

Manor Mill is a compressed L-shape on plan, the working parts of the mill being within the rear section which is orientated approximately south-west – north-east, with an extension on the north-west side towards the road. The mill contains three full floors and the remains of a loft gallery under slated gable roofs. There are 19 courses of slates to the roof slopes, with inverted V-shaped clay ridge tiles. Generally, the walls are of random sandstone rubble set in lime mortar, with some areas built of water-rounded stones. The door and window openings have timber lintels and there are some brick dressings and arched window heads. Some of the brick window heads have shaped iron straps supporting the brickwork (see elevations and photographs). There is evidence of several different phases of building activity in the masonry of the walls (see drawings and discussion below).

#### *North-west elevation*

This is the principal elevation, seen on entry from the road. The extension at the north-west end of the mill has central doorways at ground, first floor and loft gallery levels, and there is a small slated gable extending from the roof ridge, which is all that remains of a lucam which housed the external sack hoist. The ground floor walls are of random rubble stone, with some water-rounded blocks, with more evenly coursed random rubble above. There is a clear change in the mortar above second floor level, indicating where the building has been raised by one storey. The stonework is similar to that below, but a large quoin stone built in to the north-west corner of the raised section suggests a different building phase. Below the doorway to the loft gallery is a small opening through the wall for a drive shaft to pass through. The ground floor entrance doorway has a half of a conglomerate millstone of about 1.07m diameter set in the ground as a threshold. The frame of the ground and first floor doors is formed by a single softwood timber on each side, rising from the ground to the head of the first floor door. The ground floor door is of

tongued, grooved and beaded boards, with a 4 wide by 2 deep fixed light in the top. The first floor door is a stable-type door; the lower leaf is made of butt-jointed beaded elm boards nailed to ledges and the upper leaf is of softwood boards. Both leaves are hung on forged hinges, the lower one visible on the upper leaf having a flame end. A false head has been inserted across the top of the first floor door. There are two projecting timbers at loft gallery floor level, which would have supported the floor of the lucam of which only the roof survives.

To the west of the extension is a metal-framed window with a concrete cill which has been inserted in a ground floor former doorway. Above this window is the scar of a lean-to roof, which is also visible on the short return of the south-west elevation. This was the roof that covered the sawmill (see Figure 7). Only the timber frame of the window survives at second floor level.

Adjoining the south-west end of the mill is the former kiln, the ground floor of which is now used as a wood store. The ground and first floor doorways have a continuous frame, similar to that of the mill doors, but made of re-used oak. Both doors are missing. The first floor door and window openings have brick heads. There are remains of timber frames in both the ground and first floor window openings, which have iron straps supporting the arched brick heads. The second floor window opening has a flatter brick head and retains a 3 deep by 3 wide timber-framed casement window with glazing bars.

#### *South-west elevation*

The return elevation of the north-west extension of the mill has a wall tie and the remains of a cement fillet where there was formerly the roof of a single-storey lean-to structure. There is a doorway into the mill at first floor level which has a pegged timber frame and a stable-type door of vertical softwood boards nailed to ledges. The upper leaf retains a flame-ended forged hinge.

The second floor window opening in the kiln extension has a brick head. The frame has gone and the remains of a horizontally-boarded shutter is lying inside the opening.

#### *South-east elevation*

This is the former pit wall of the mill, against which the waterwheel was positioned, and is partly obscured by ivy which covers the north-east corner. The former headrace and wheelpit have been back-filled. The stonework of this wall is generally weathered, with some areas in poor condition, particularly where water-rounded stones have been used. A concrete block wall abuts the wall towards its south-west end. There is a window opening with a timber frame and brick arched head at second floor level visible from within the workshop building. This lit the upper floor above the kiln, and has timber shutters on the inside. The base of this part of the wall is at present obscured. There is a straight joint from ground to first floor level towards the west end and also a horizontal break visible at second floor level, again confirming that the top storey is an addition. Towards the centre of this elevation at first floor level the wall has partially collapsed and has been patched with concrete blockwork. A brickwork pier which projects from the face of the wall above ground level indicates the upstream end of the waterwheel pit. There is a small cast-iron bearing still fixed to this pier which carries the outer end of the penstock control (see below). The shaft of the waterwheel entered the building through a rough arched opening in the stonework towards the north-east end. There is a former window opening at first floor level above the wheelshaft position.

### *North-east elevation*

This, the downstream gable end of the mill, is partly obscured by ivy. There are no openings apparent at ground floor level, other than a small rectangular recess towards the south-east end. There are vertical joints in the stonework beneath the first floor window, that on the right-hand side indicating that the north-west part of the mill has been added. There is a wall tie towards the north-east corner and the ends of timber beams of both the first and second floor project through to the outer face of the wall (see elevation drawing). The first floor window occupies what appears to be a former doorway. It has horizontal boarding below the cill and two casements, both with 4 deep by 2 wide glazed lights, in a timber frame. The upper part of the gable end is timber-framed and rendered externally. There is a door opening which retains its lining only, with a 3 deep by 3 wide timber-framed window above at loft gallery level. This window does not fit the opening fully. Although this wall defines the downstream gable of the mill, it would have been an internal dividing wall in the later 19th century, when the area to its north-east was enclosed and roofed over. Evidence of this phase appears to remain in the blocked doorway at ground level, the window in a former door opening at first floor level, and the stud and lath gable infill above eaves level.

### *Interior*

The rear (original) part of the mill is about 6.8m x 5.1m internally on plan, with the hurst [the timber structure that encloses the driving gears and carries the millstones] built along the full length of the south-east (pit) wall. The working parts are now mostly confined to the downstream (north-east) end of the hurst. The building has been extended at its south-west end by the addition of a three-storey extension, which contained a kiln (see below). The north-western arm is also an addition.

The ground floor is of bricks laid flat, running north-west – south-east, which falls slightly from upstream to downstream along the face of the low rubble stone wall along the face of the hurst, which defines the outer edge of the cog pit. The cog runs the full length of the mill and is now partly filled with debris. A water pipe enters the mill in the south-west corner of the cog pit. The ground floor walls are lime-washed. There is a window with a central mullion and vertical iron bars with timber shutters in the south-west corner, looking into the lower floor of the former kiln and the remains of a timber spout through the wall to the north of this window, with a vertical building break on its north side. The window to the front of the mill (north-west elevation) is a modern steel-framed casement in a former door opening, the wall having been filled with masonry up to cill level. The steps up to the first floor are missing, but were formerly positioned in the south-west corner, giving access up to the top of the hurst.

Both the first and second floors are timber boarded, with the principal beams running south-west – north-east (see plans). A flight of steps extends from the first floor to 0.6m above loft floor level, with a landing at that level, giving access to upper floor of the kiln. Towards the upstream end of the first floor are the sack traps, which are about 0.7m square, with two trap doors on metal hinges. An exterior photo of the mill of c.1910 which shows the sawmill appears to show steps from the first to second floor within the north-west extension (Figure 7).

The second floor in particular has areas of boarding missing and some decayed timbers and is not fully accessible. Some plaster and limewash survives on the walls at both levels. There was access to grain hoppers and bins at the south-east end of the second floor, these being marked with white-painted numbers 1 and 2, visible below first (stone) floor ceiling

level, and 5 at the upstream end, above the loft floor. The loft gallery is generally in poor structural condition and was not physically accessible. It formerly extended the length of the main part of the mill, with a central gallery running to the north-west, to serve the lucam.

The roof of the main part of the building is of three bays, with two pairs of rustic principals, lapped and notched at apexes, and a single row of short, single-bay purlins lapped over the backs of the principals. These support common rafters, battens and slates.

#### *The kiln*

The extension adjoining the south-west end of the mill, which is approximately 2.9m square internally on plan and the full height of the mill, housed a kiln, with a clay-tiled drying floor at first floor level. The drying floor and furnace structure have gone, although some broken tiles remain cemented into the wall and a complete tile, 0.3m square, and a number of fragments with both square and circular perforations survive on site. There is a low brick-arched entrance at the upstream end of the cog pit, which presumably gave access to the furnace, perhaps for raking out, and a brick-arched headed recess is just visible in the south-west wall, behind the wood stack. A hole in the external wall above the position of this recess gives access to a circular flue which runs up within the thickness of the wall (see photograph). There is the remains of a suspended timber floor at second floor level, which was lit by windows on the south-west and south-east sides. The roof over follows the ridge line and slope of the mill roof, the front slope being shorter because of the smaller size of the kiln extension. There are some small triangulated timber brackets between the wall head and the rafter feet on the south-east side of the roof above the kiln.

### **Description of the working parts**

#### *Water supply*

The waterwheel (which was apparently taken for scrap during World War II) was fed by a leat taken off the north end of a weir across the Washford River some 60m upstream from the site. The first and second edition 1:2500 Ordnance Survey maps (Figure 4) show the position of the weir (now gone) and also the line of the leat. The leat, headrace and wheelpit have all been backfilled. The position of the last working waterwheel can be determined from the shaft hole in the pit wall and the remains of a brick pier and bearing for the penstock control at the upstream end of the wheelpit. The position of this pier suggests a low-breast wheel of up to 5m in diameter. Within the mill, the penstock control spindle spans the cog pit and projects through the hurst bressummer. It has a small iron pinion and neat timber control arm on its inner end. The opening in the pit wall, through which the wheelshaft passed, is rather crudely formed and has probably been enlarged. The likelihood of there having been two waterwheels at one time is discussed below.

#### *Primary drive*

The pitwheel is a single cast-iron bevel gear with six T-section arms, mounted on the inner end of a circular section iron shaft of about 15cm diameter, the inner bearing being within the thickness of the pit wall. It has approximately 87 cogs of about 6.4cm (2½ inch) pitch. It meshes with the wallower, a cast-iron bevel gear with eight arms and 36 teeth, which is mounted on the timber upright shaft. The upright shaft is of oak, its lower section being octagonal, 0.3m across the flats. The footstep bearing of the upright shaft runs in a cast-iron bridging box mounted on a massive *in situ* cast concrete block.



Above the wallower is the spurwheel, a cast-iron gear with six inverted T-section arms which curve downwards from the centre so that the cog ring is below the level of the wallower, the dish of the gear being about 0.4m. This gear carries approximately 114 cogs of 5cm (2 inch) pitch, the working faces of which are very worn. Drives to two pairs of millstones were taken off the upstream and downstream sides of spurwheel, by cast-iron stone nuts mounted on circular section millstone spindles. Both stone nuts are single castings with 20 teeth, located on a square taper on the millstone spindle. Both stone nuts can be engaged and disengaged by jacking rings, by turning a pivoted handle on a thread below the bridge tree. Both spindle footstep bearings are carried in circular cast-iron bridging boxes bolted to the timber bridge trees, with set screws to align the bearing blocks.

### *Millstones*

At first floor level are two pairs of millstones *in situ* in circular slightly tapered timber tuns. The upstream pair of millstones are 1.22m in diameter. The bedstone is of conglomerate (probably Old Red Sandstone from the Wye Valley), with a slightly domed back. The runner has a large diameter eye (notably larger than usual), with its driving irons and nut-ended damsel in place, although it is largely obscured by the tun and covered in debris. The timber horse, which supported the hopper over the stones, remains in place on the tun. The tun of the downstream pair of millstones is covered in debris and not easily accessible. The diameter of these stones has been recorded as 1.14m (Alan Stoyel, pers comm). The plaster-backed underside of the bedstone is visible from below suggesting that this pair of stones are French burr. There is also a spare 1.22m diameter French burr runner (top) stone leaning against the pit wall between the upstream stones and stair position.

### *Hurst*

The hurst is the timber structure that carries the millstones and encloses the driving gears and spans the full length of the mill. Much alteration has taken place, which is particularly evident at the upstream end, where the original bressummer - the upper beam across the front of the hurst - is built into the wall. This beam, which is of oak, has an angled spout hole cut through it from a previous millstone position at the upstream end, and has been sawn through at an angle immediately downstream of the left post of a pair that supported a horizontal timber (brayer), which carried the bridge tree for the millstones that were once positioned here. The hurst structure has been improvised, with a secondary timber running on top of the original bressummer and the millstone floor level raised above that. The upper timber was cut by a circular saw.

There are six vertical posts (bridge posts) across the face of the hurst, the three at the downstream end being plain sawn oak and dating from the last mechanical phase. Those at the upstream end are older. That immediately on the upstream side of the spurwheel has been chopped to accommodate the rotation of the spurwheel. The feet of the posts bear on a cill beam, now decayed, which sits on a low rubble stone wall some 0.3m thick. The wall runs almost the full length of the mill, but has been broken through behind the foot of the elevator and stops 0.75m short of the upstream wall. The bridge posts at the downstream end are paired and support a fixed plain oak bridge tree, the outer end of which bear in a recess in the pit wall. The outer end of the upstream bridge tree is similarly recessed into the pit wall, which has also been recessed to clear the spurwheel's circle of rotation. There is a timber lintel over the recess, which also carries the ends of the beams supporting the millstones.

The millstones are tentered [the action of raising/lowering the upper millstone whilst it is working, in order to control the texture of the ground product] by handwheels on the outer ends of long spindles which are geared to iron bridges fixed below the timber bridge trees, so acting directly on the millstone spindle footstep bearings. The whole arrangement, including the re-use of iron pinions as handwheels, appears somewhat improvised.

The meal spouts have gone, but the former position of that to the upstream stones suggests it could have been extended to feed directly into the elevator which is positioned in front of the hurst. There is a twist peg, for adjusting the feed into the millstones remotely by a cord, in the face of the hurst behind the elevator. The elevator, which is no longer complete, has a timber boot and was driven at its head. It would have emptied into the large bin in the loft above the upstream millstone position. Elevators are not common in English watermills, other than those processing oats. At Manor Mill the elevator emptied into a large bin above the upstream millstones and it is possible that it was used to lift malted grain from the kiln to the bin, which was then fed into the upstream (conglomerate) millstones.

### *Secondary drives*

Mounted on the upright shaft above the millstones on the first floor is a cast-iron bevel crown wheel with six T-section arms and approximately 78 cogs of 5cm (2 inch) pitch. This drove a cast-iron bevel pinion with about 25 teeth on its south-east (pit wall) side. The pinion is mounted on a 6cm diameter horizontal shaft that runs back into the mill, over the top bearing of the upright shaft. The same shaft formerly extended through the wall to take a drive into the area to the south-east of the mill, but has been cut off close to the outside face of the pit wall. Within the mill the horizontal shaft carries two cast-iron belt wheels or pulleys with curved arms. That nearest the crown wheel is 0.48m in diameter with a 0.15m wide face, and the outer one, from which a belt drive was taken to the floor above, is 0.58m diameter with a 0.13m wide face. There is a coupling plate on the inner end of the shaft, which formerly extended further into mill. A bearing pedestal for this extension remains in place on one of the beams.

Access to the working parts in the loft was difficult because of the condition of the floor. There is a second layshaft, parallel with that on the floor below, which is 5cm in diameter and about 1.8m long, at 1.4m above the loft floor. This has a redundant cast-iron bevel pinion on its south-east end (see discussion) and carries five iron belt wheels or pulleys of varying diameter. The dimensions of these, as recorded by Alan Stoyel in 1987 are:

- 1) 0.46m diameter by 0.13m wide (belt drive to sack hoist)
- 2) 0.20m diameter by 0.07m wide
- 3) 0.40 diameter by 0.15m wide (drive from the layshaft on the floor below)
- 4) 0.22m diameter by 0.07m wide
- 5) 0.36m diameter by 0.10m wide

The redundant bevel gear on the south-east end of this shaft, with no evidence for a gear drive from the upright shaft (which stops at the floor below), suggests that this shaft is not in its original working position. It is likely that it was originally located on the floor below, driven off the crown wheel on the upright shaft, and was raised up a floor when the building was extended vertically.

The sack hoist drive wheel and chain drum are set above the former gallery floor level. The hoist drive wheel has a cast-iron centre with 6 arms, the working face and flanges

being built up in timber. The hoist was driven by a slack belt which was tensioned by lifting a timber jockey pulley mounted in a neat timber frame.

#### *Other artefacts*

There are a number of machines and artefacts in and around the mill and workshop. On the ground floor of the mill are an apple crusher and a cider press, which were brought from a farm on the Holnicote Estate and put into the mill in the 1970s or 80s (Wisnicka 2103, 12). In the cog pit is an iron layshaft with two iron pulleys mounted on it, presumably displaced from one or other of the floors above. A timber crane for raising the top millstones for dressing and maintenance was seen in the workshop in 2011.

### **The workshop**

#### *Generally*

To the south of the mill is a two-storey former workshop building, orientated broadly north-west – south-east, its south-west elevation fronting the river. Its walls are of rubble stone with brick dressings to door and window openings. The workshop is a somewhat improvised structure, the building bays being unequal in width, with a small triangular bay at the north-west end. It was basically an infill between an earlier building at the south-east end and the rear of the kiln attached to the mill.

#### *North-east elevation*

The wall is of rubble stone at the south-east end, with double brick headers to the arched opening. The first floor window above the arch has two casements, 4 panes high by 2 wide, with horizontal weatherboard infilling below the cill. A former door opening to north-west of the arched opening has a similar timber-framed window with horizontal weatherboarding on studwork to ground level. The full height opening towards the centre of this elevation, which is partly overgrown, has been closed with vertical corrugated iron sheeting and old doors to first floor level, and with vertical tongued, grooved and beaded boarding above to eaves level. At the north-west end of this elevation is an inserted gable in concrete blockwork, with a re-used door at ground floor level and a casement with a top opening light above. The gable above the first floor window has a partial cement render base coat and there is a row of joist sockets across the wall above the ground floor door head.

#### *North-west elevation*

This is of rubble stone, with a large central opening which extends from ground floor cill up to eaves level. The ground floor window is now very decayed and partly covered over; it was formerly a wide window with multiple vertical glazing bars, as survives at the higher level. There is horizontal and some vertical weatherboarding above the ground floor window head, then two rows of glazed opening over, both with 16 vertical timber glazing bars and greenhouse-type lapped glazing. The building is splayed across the north-east corner, with a rubble stone base and vertical corrugated metal sheeting above and a small triangular area of horizontal weatherboarding below the eaves.

#### *South-west elevation*

This faces the river, with the arched opening at its south-east end now infilled with concrete blockwork and a timber-framed three-light window. There are four regular bays with windows with brick-arched heads at ground and first floor levels, all of which are covered with vertical corrugated translucent plastic sheet. The masonry wall at the north-

west end of the building is curved, with a small square opening at about ground floor window head level, perhaps for a drive shaft to pass through.

#### *South-east elevation*

The wall is of coarsely mortared rubble stone, with three iron plates and tie rods passing through at about first floor level. The upper part of the gable is largely obscured by ivy. There is a central window at high level, with timber frame and four vertical timber glazing bars, for greenhouse-type lapped glazing. Although not visible now because of ivy, the number '86' is carved neatly in the centre of the arched timber head (see photograph).

#### *Interior*

The interior of the building is relatively cluttered and not all areas are readily accessible or visible. The ground floor is an uneven earth floor, with a cast concrete base partly visible towards the north-west end, presumably an engine or machine mounting block. None of the original windows or frames survive on the south-west side. The south-east end was an earlier building (see Figure 4) and a stone wall divides the end bay off from the rest of the workshop at ground floor level. This wall is plastered, with a window opening near its west end.

A set of steps (not original) give access to the first floor at the south-east end, which is about 0.75m lower than that at the north-west end of the building. Access was limited to the top of these steps. Most of first floor appears to have been re-laid, the floor joists being set on top of main cross beams. Some of the main cross beams have joist notches cut into them, but they may be re-used. The raised part of the first floor is of tongued and grooved boarding. The first floor walls are lime-washed.

The roof is a rather rustic structure. It has three bays at the lower (south-east) end and four uneven bays over the higher level, with a small triangular bay at the north-west end. These bays are defined by cross beams spanning between wall heads. Struts are taken from some of these cross beams up to the underside of the purlins, rather than there being trusses as such. There is a single row of purlins to both slopes; these are basically softwood poles, some with the bark still on them, and a vertical ridge board. The common rafters are also sparingly converted softwood timbers, which carry battens and slates. Externally, there are 18 courses of slate on each slope with clay ridge tiles with a roll moulding at the apex.

An iron layshaft runs at an angle in bearings bolted to the tops of two of the cross beams at the south-east end of the raised section. This carries a cast-iron pulley at its south end. The north-east end this shaft emerges from the head of the stone wall on the south-east side of the full height former opening, but it was not possible to see how - or from where - it was driven.

## Discussion

From map evidence (Figure 2) the plan form of Manor Mill with its adjoining kiln was established before the end of the 18th century. The tithe map of 1841 (Figure 3) appears to show that the north-western extension had been added by then, and the basic layout of the buildings, with the cottages to the west and north, is similar to that which survives. By the time of the 1:2500 Ordnance Survey map published in 1888 (Figure 4), there were large extensions on both the south-east and north-east sides of the mill. Only sections of the rear wall of the former now remain, although the area is overgrown and partly obscured by piles of building materials. The height of these extensions is not known, although the closed first floor doorway on the north-east side of the mill and the remains of roof timbers projecting from below the eaves on the south-east wall suggest they were two storey.

Both the 1798 map and the tithe map show the course of the leat and the headrace along the south-east side of the mill, with the tailrace running in a north-easterly direction to rejoin the river further downstream. The weir and leat are shown on the 1888 OS map, but the course of the tailrace is obscured by the railway embankment. The tailrace water was presumably culverted when the railway was built in the 1850s. The waterwheel would have been roofed over, within the extension on the south-east side, which was built between c.1841 and 1888. The first edition 1:2500 OS map also shows a small square building at the south end of the site, close to the foot of the embankment. Between 1888 and 1903 this building was incorporated in a larger structure, which survives as the two-storey workshop. The number '86' neatly cut in the window head on the south-east gable may commemorate an original building date (see photograph). The purpose of the arched openings on both sides of the end bay is unclear: they could have provided access for carts to the river but the levels and position of the building make it an improbable location for a waterwheel, which has been suggested.

Building breaks and structural changes indicate that the mill building has undergone several phases of enlargement including the addition of the kiln (Figure 10). The cartographic evidence cited above indicates that the mill was initially basically a rectangular building and the kiln was added to its south-west end before the end of the 18th century. During the 19th century an extension was added on the north-west side, resulting in the building's present compressed L-shaped plan. Subsequent to this extension the whole building was heightened to provide a loft with a gallery floor and external lucam facing the entrance from the road (north-west elevation). This may have taken place when the present milling machinery was installed in the second half of the 19th century. Kilns are not generally associated with corn mills in the south-west of England and it is considered that the kiln at Manor Mill was perhaps used for malting rather than grain drying.

Regarding the layout of the working parts of the mill, the length of the pit wall, with the full length cog pit and hurst frame, strongly suggests a two-wheeled arrangement. This was not uncommon in the late medieval/post-medieval periods as a way of introducing an additional pair of millstones and thus increasing capacity and output (Watts 2002, 120-6). The layout of two waterwheels in line, or staggered, in a wheelpit along the long wall of a mill is usually associated with overshot waterwheels, which could be fed from a common launder or trough, but the low-lying nature of the site at Manor Mill, relative to the river and the known position of the weir, would seem to indicate that there was not enough head for overshot wheels, at least latterly. From the configuration of the headrace, the evidence of the penstock control and the wear on the pitwheel cogs, the last working waterwheel at

Manor Mill was breastshot. To work two undershot or low breast wheels in the same wheelpit, the usual arrangement would be for the upper wheel to be against the pit wall and the lower wheel to the outside of the wheelpit, with a divided channel of water and two penstocks. Without ground clearance and some controlled excavation of the wheelpit area, to determine its width and shape, this aspect of the working arrangement at Manor Mill can only be conjectural at present.

Within the mill, the original hurst bressummer appears to have extended the full length of the building, although it was not a continuous piece of timber. Its upstream end is built into the wall, but there is a diagonal scarf joint just downstream of the penstock control position, and a second diagonal cut to the left of the post head. Between the upstream end and the penstock control is an inclined cut out for a meal spout. This is located centrally between the two upstream posts. These are former bridge posts, having mortises for a brayer [a horizontal timber on which the outer end of the bridge tree, which carries the foot bearing of the millstone drive] was located. The present bridge trees to both pairs of *in situ* millstones have their ends located in recesses in the pit wall. There is no such recess for the former upstream set of stones, but a stone pad against the pit wall is central to the millstone position and appears to have been for a timber rear post. Because this pad is central, it suggests that the upstream stones could not have been driven latterly by a waterwheel in this position, there being no room for a waterwheel shaft to enter the building. It is therefore possible that there was formerly a third pair of millstones at the south-west end of the hurst, driven by a layshaft drive off the upstream side of the existing pitwheel (see diagram).

From its general layout and measurement of the gear pitches, a probable date in the second half of the 19th century is likely for the installation of the present machinery. There is clear evidence of improvisation, however, to fit new gearing into an existing layout, which is seen in the heavily dished spurwheel, the tenting arrangements and the raising of the millstone level on top of the hurst. The recess in the pit wall and the chopping out of part of one bridge post to clear the spurwheel also confirm this. Derrick Warren, who made a rapid survey of Manor Mill in 1977, recorded a French millstone which had a balance box by Clarke & Dunham bearing the date 1859. This was presumably on the downstream runner stone, which is at present obscured, the 'spare' French burr runner stone leaning against the pit wall having no balance boxes. 1859 was the date of Clarke & Dunham's patent (No.1182), so it cannot be used for dating evidence other than to say that this particular millstone is no earlier than 1859. No inscriptions or dates were observed on any of the working parts or the hurst structure but, as mentioned above, a date in the 1860s or 1870s seems likely for the installation of the surviving machinery. It is possible that the Nethercotts, who ran a millwrighting and engineering business from the site from at least the late 1880s, were responsible for some of the improvisations that can be seen to have taken place. The large *in situ* concrete pad that supports the footstep bearing of the upright shaft can certainly be regarded as a fairly late intervention, perhaps even dating from the last working days of the mill in the early 20th century. From the early 20th century photograph showing the sawmill outside the mill building (Figure 7) it appears that the kiln was by then disused.

It is understood that the last waterwheel was removed for scrap during World War II and that the area immediately behind the mill (to the south-east) was still roofed over in the early 1990s, although it was by then in poor condition (local informant to Alan Stoyal, 1987). The date of removal of the extension from the north-east side of the mill is at present unknown.

## Conclusion

Manor Mill is considered to occupy the site of a water-powered corn mill that was established in the medieval period. The mill is thought to have been the customary mill for the south part of Old Cleeve, including Leighland, into the early 17th century, when some alteration to its water supply and the construction of a new mill a little higher upstream took place. The plan of the present building is similar to that recorded on a late 18th century map and had altered little by the early 1840s. It is possible that at that time the mill worked with two waterwheels. The construction of the mineral railway in the 1850s, which passed through the site, may have provided the stimulus for the mill to be remodelled, the surviving gearing appearing to date from the third quarter of the 19th century. An engineering and wagon-building business was established by the Nethercott family in the late 1880s, which perhaps resulted in the gradual demise of corn and malt milling on anything but a small scale, the mill finally stopping work in the early 20th century. The engineering works does not appear to have continued after World War I.

The present mill building shows evidence for several phases of alteration both to the building itself, including the addition of a kiln which is an unusual building for a mill in the south-west, and also to the milling machinery. In particular it appears that the mill was originally powered by two water wheels which were replaced by a single wheel in the second half of the 19th century.

Manor Mill retains much primary machinery which is typical in general layout, if not in detail, of the spurwheel under-driven gearing arrangement driving two or more pairs of millstones that was used extensively in English corn mills from the late 18th century. The mill also retains interesting historical evidence of earlier configurations of machinery within the remains of the hurst frame and other parts of the structure. There is also clear evidence of adaption and improvisation, presumably due to the millwrighting and engineering presence on the site in the late 19th century. The waterwheel has gone and its pit has been back-filled and there is no longer a live water supply that could readily serve this site. There are other mills in the area which can still illustrate the use of water-power, such as Pitt Mill, further south in Roadwater parish, now a paper manufactory, and the working corn mill on the National Trust's estate at Dunster. Both the two-wheeled mill at Dunster and Piles Mill, Allerford, also owned by the National Trust, are open to the public.

It is suggested that further recording work should be undertaken if the cog pit is cleared and also if any groundworks or excavation are necessary in area immediately behind the mill, within the length of the former wheelpit, as this may provide more evidence for the development and former working layout of the mill and its water supply.

Martin Watts

August 2014

Minor revision and addition: September 2014

## Acknowledgements

I am grateful to the site owner for access to the buildings and background information; Alina MacKinley (Wisnicka), for supplying copies of survey drawings and other background information prepared by her; Shirley Blaylock, Exmoor National Park, for copies of maps and other information; Martin Bodman and Alan Stoyel for useful discussion and notes from their visits to Manor Mill; Brian Murless, for copies of notes and photographs of Manor Mill taken by Derrick W. Warren in 1977, which are now held by the Somerset Industrial Archaeological Society; and to Sue Watts for her observations on site and in the preparation of this report.

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- Watts, M. 2002: *The Archaeology of Mills and Milling*
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## Disclaimer

The material contained in this report was designed as an integral part of a report to an individual client and was prepared solely for the benefit of that client. The material contained in this report does not necessarily stand on its own and is not intended to, nor should it be relied upon by any third party. To the fullest extent I will not be liable by reason of breach of contract, negligence or otherwise for any loss or damage (whether direct, indirect or consequential) occasioned to any person acting or omitting to act or refraining from acting in reliance upon the material contained in this report, or arising from or connected with any error or omission in the material contained within the report. Loss or damage as referred to above shall be deemed to include, but is not limited to, any loss of profits or anticipated profits, damage to reputation or goodwill, loss of business or anticipated business, damages cost expenses incurred or payable to any third party (in all cases whether direct indirect or consequential) or any other direct indirect or consequential loss or damage.



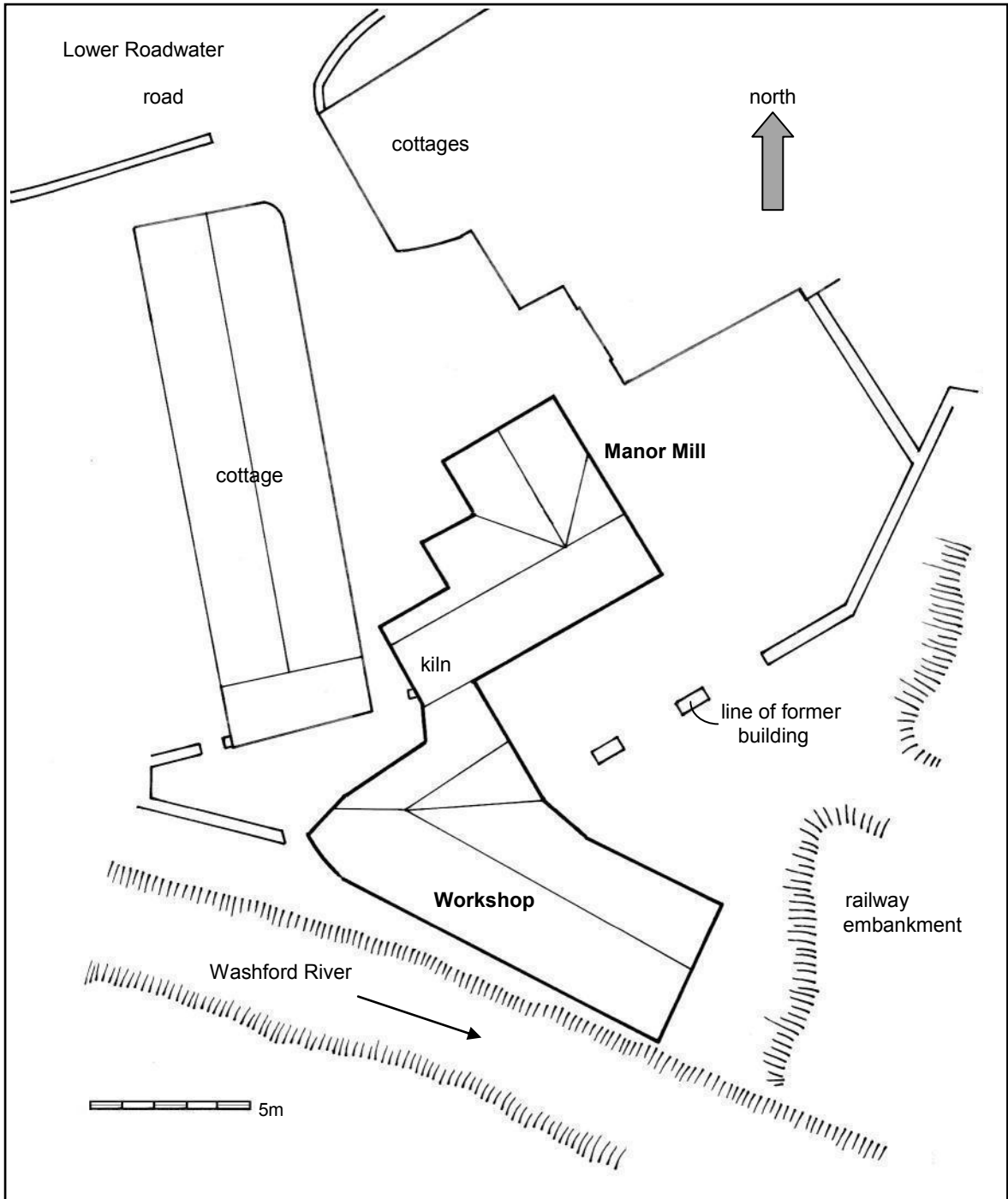


Figure 1: Manor Mill, Roadwater, Old Cleeve, Somerset. Site plan



Figure 2: Extract from a *Map of Nettlecombe and Old Cleave* by C. Chilcott, 1798 (photograph by Alina MacKinley. Somerset Heritage Centre)



Figure 3: Manor Mill, Roadwater. Extract from the Old Cleave tithe map, 1841 (Somerset Heritage Centre)

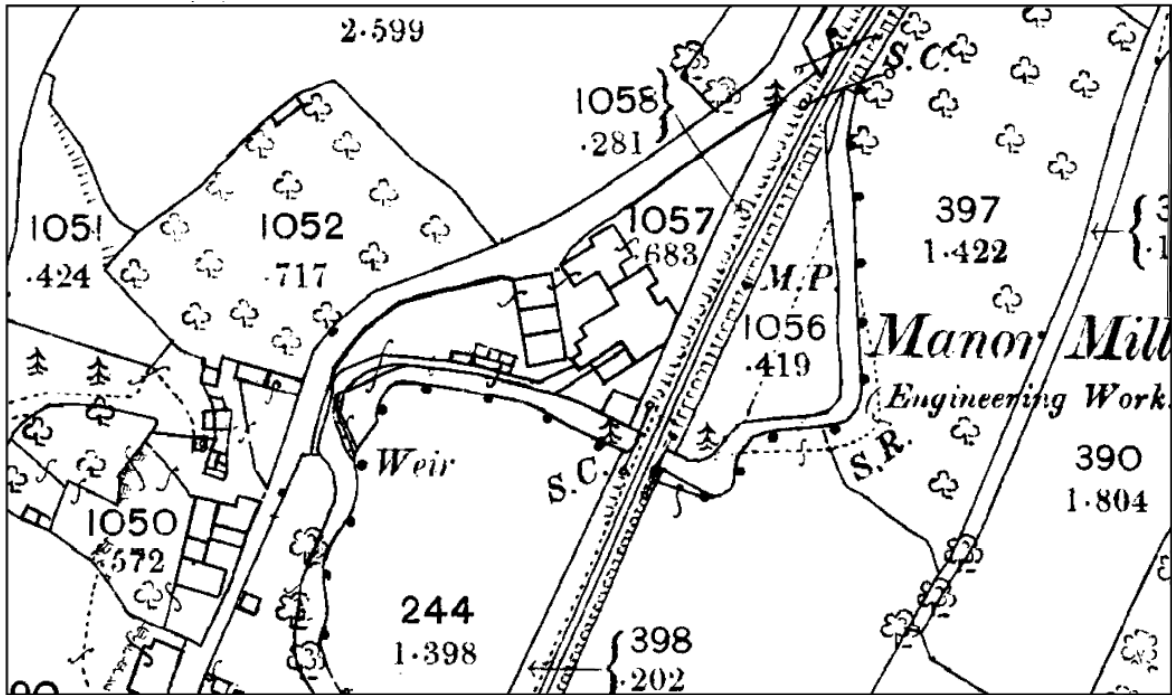


Figure 4: Ordnance Survey first edition 1:2500 map, 1888 (ENPA)



Figure 5: Extract from Ordnance Survey 6 inch Somerset sheet XLVII.NE, revised 1902, published 1904, showing the extent of the buildings and the weir and headrace course (National Library of Scotland: <http://maps.nls.uk/os/6inch-england-and-wales/counties.html>)

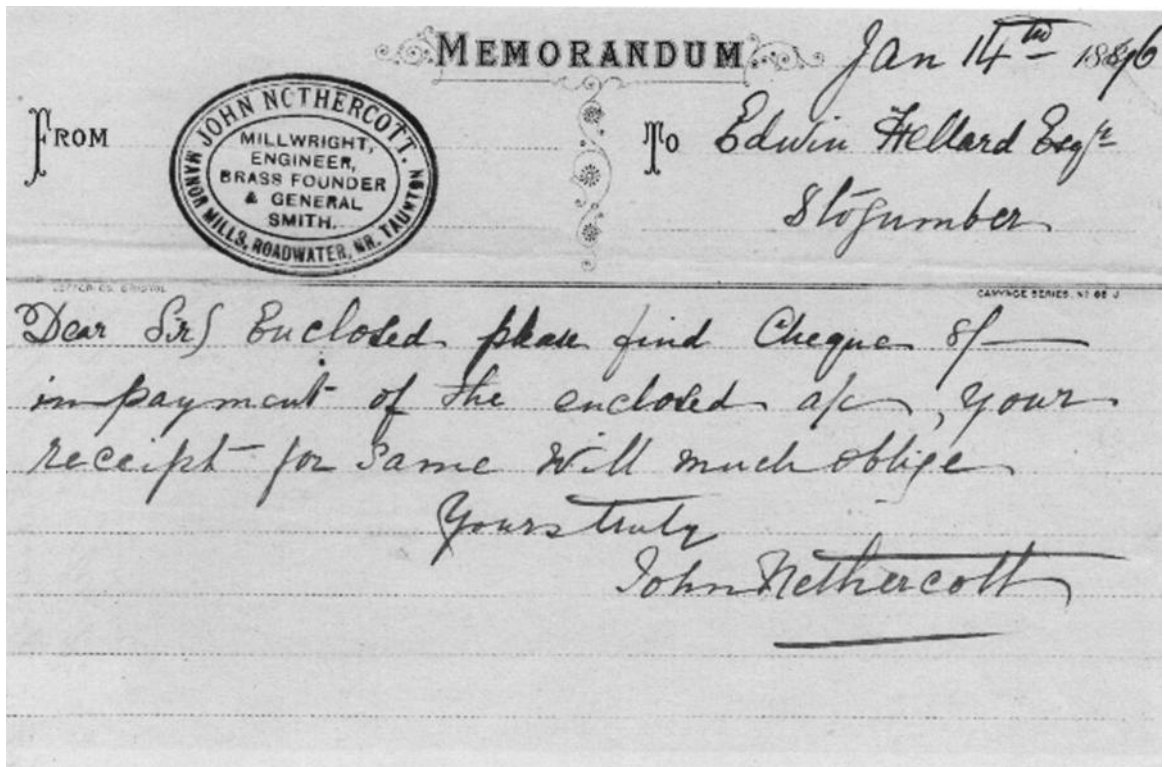


Figure 6: Memorandum of 1896, from John Nethercott of Manor Mills, Roadwater (from Jones & Hamilton 2010, 312, courtesy of Brian Murless)



Figure 7: The sawmill outside of Manor Mill, c.1910 (from Jones & Hamilton 2010, 311, courtesy of Brian Murless). This appears to be a horizontal reciprocating saw.



Figure 8: The remains of the lucam in 1977 (D.W. Warren)



Figure 9: The drive to the upstream millstones, 1977 (D.W. Warren)

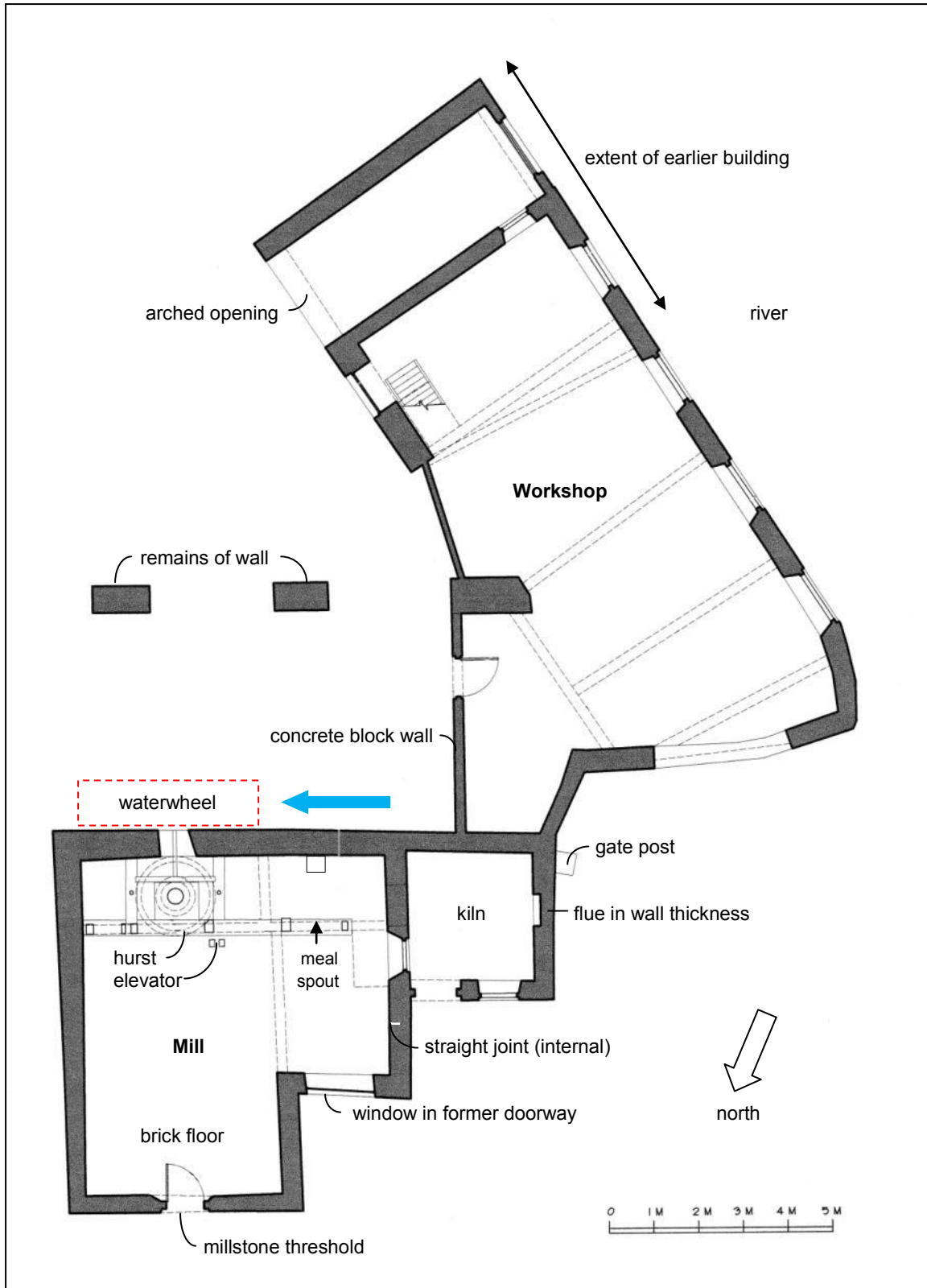


Figure 6: Manor Mill and Workshop. Ground floor plan

The blue arrow indicates the direction of the headrace that fed the waterwheel

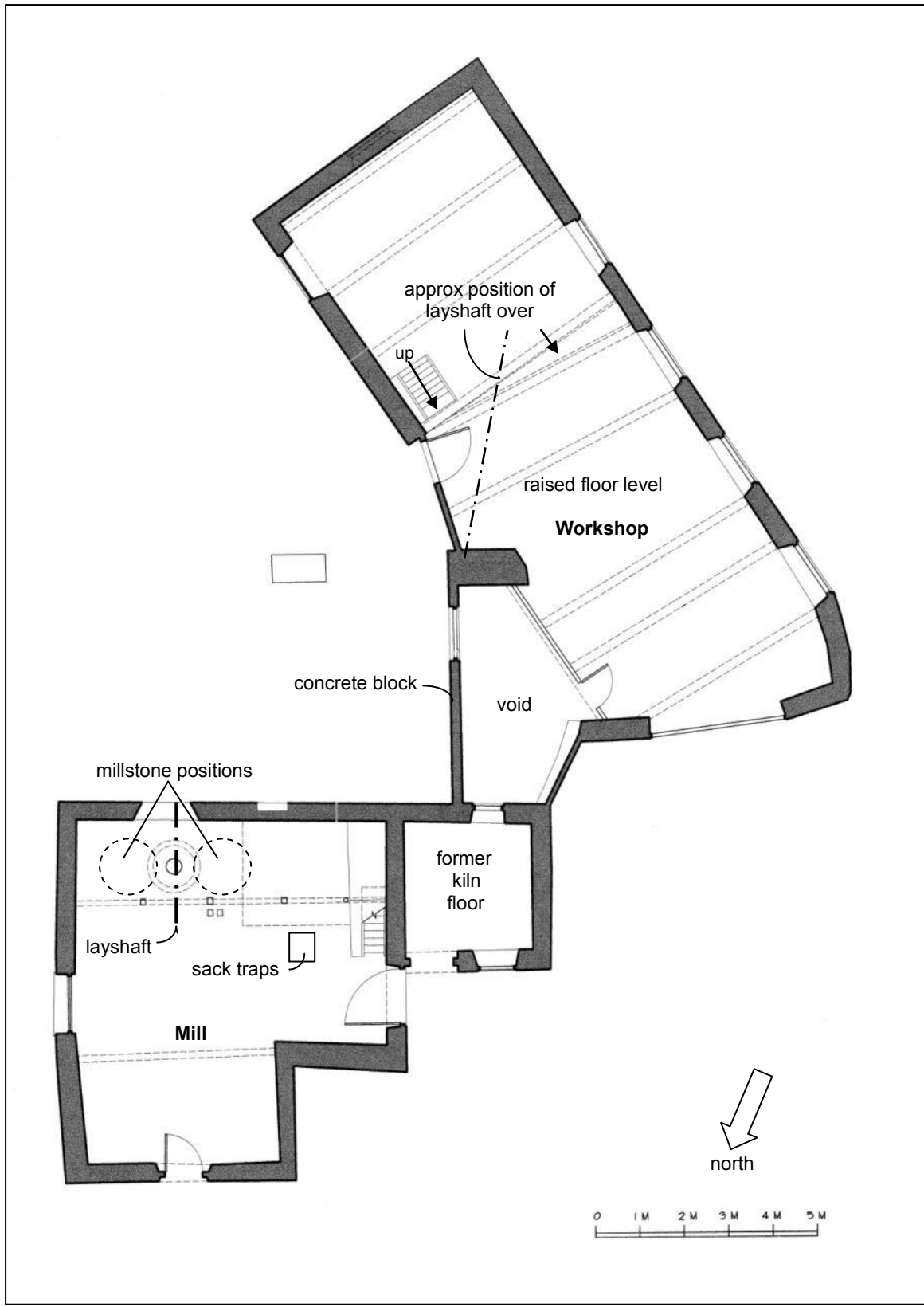


Figure 7: Manor Mill and Workshop. First floor plan

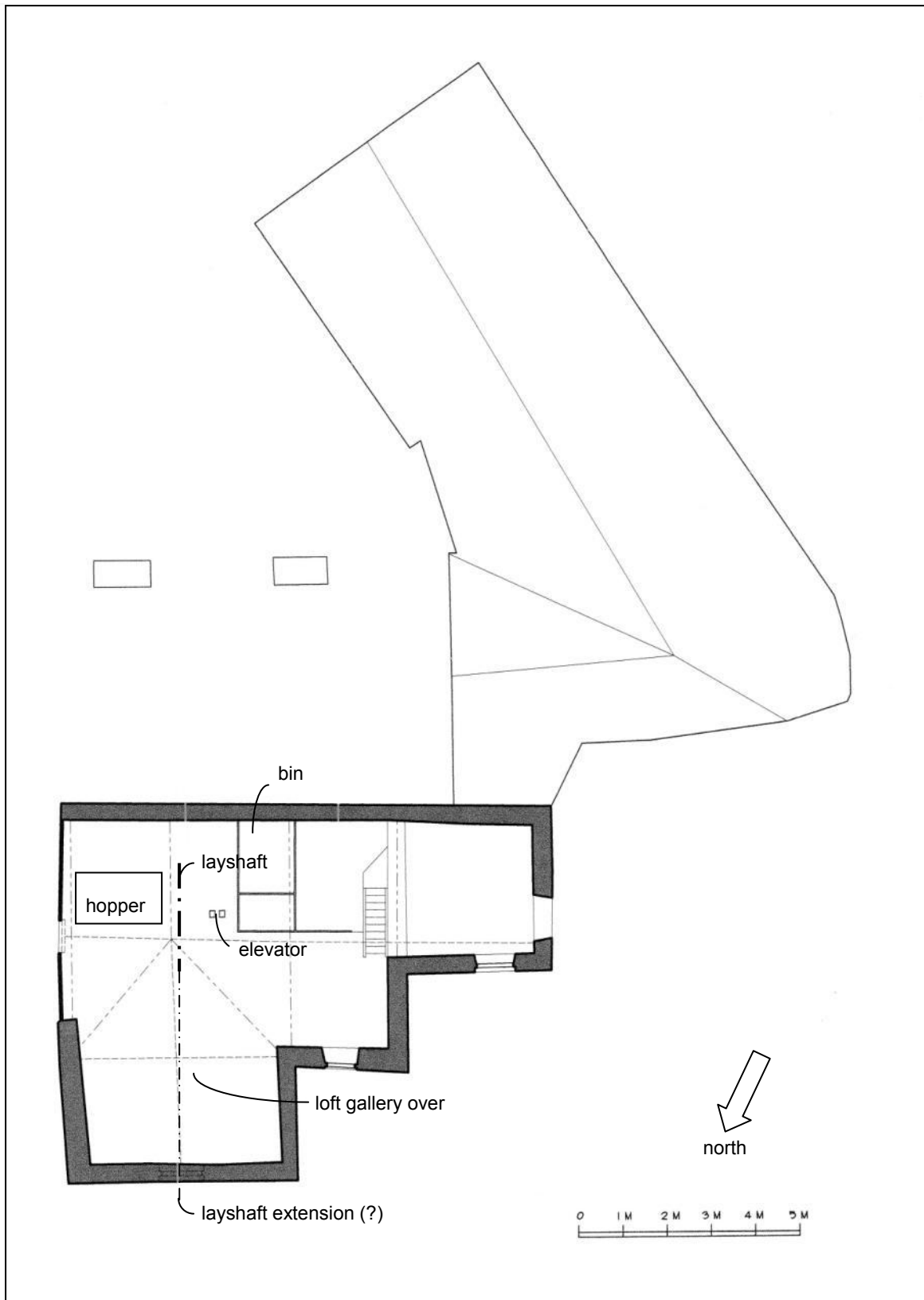
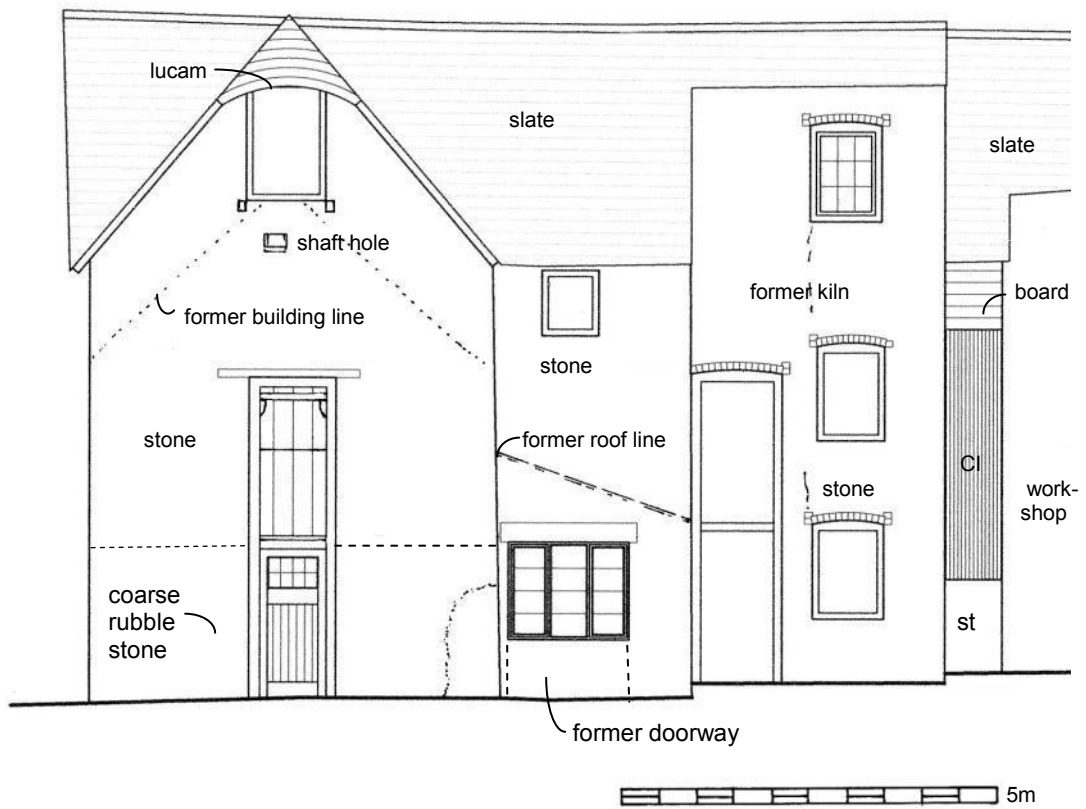


Figure 8: Manor Mill. Second floor plan. Roof structure indicated by broken lines



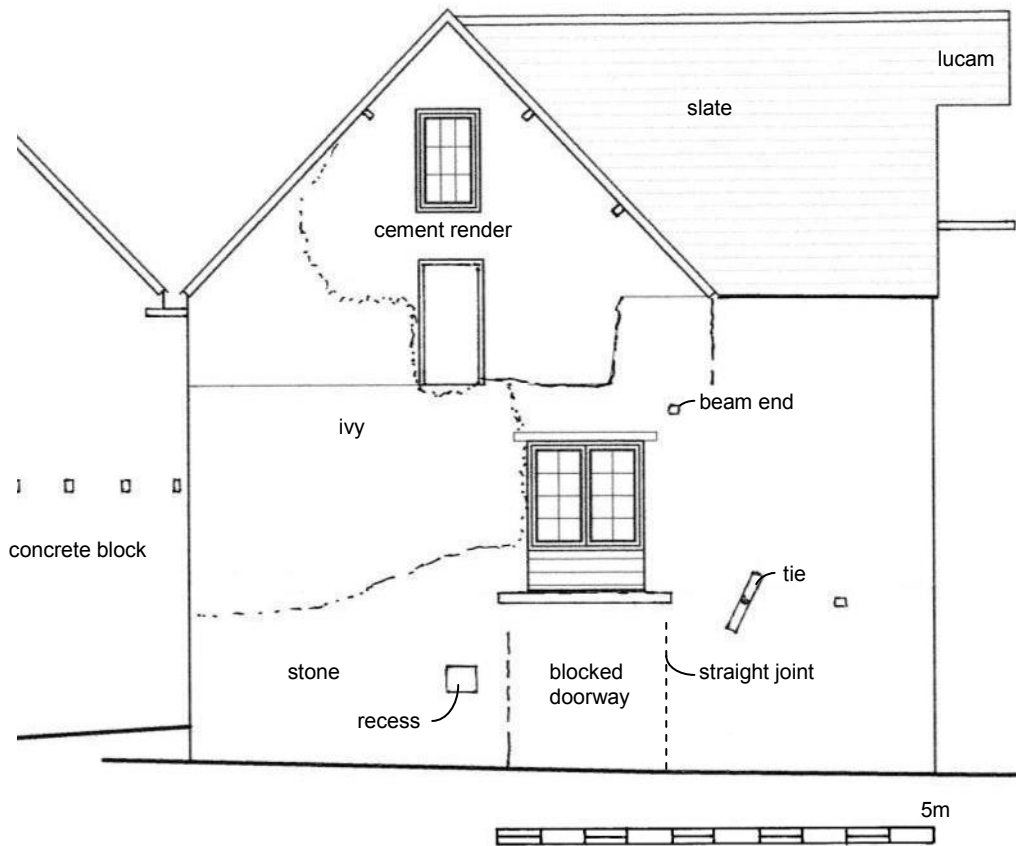


Manor Mill, Roadwater: from the north-west



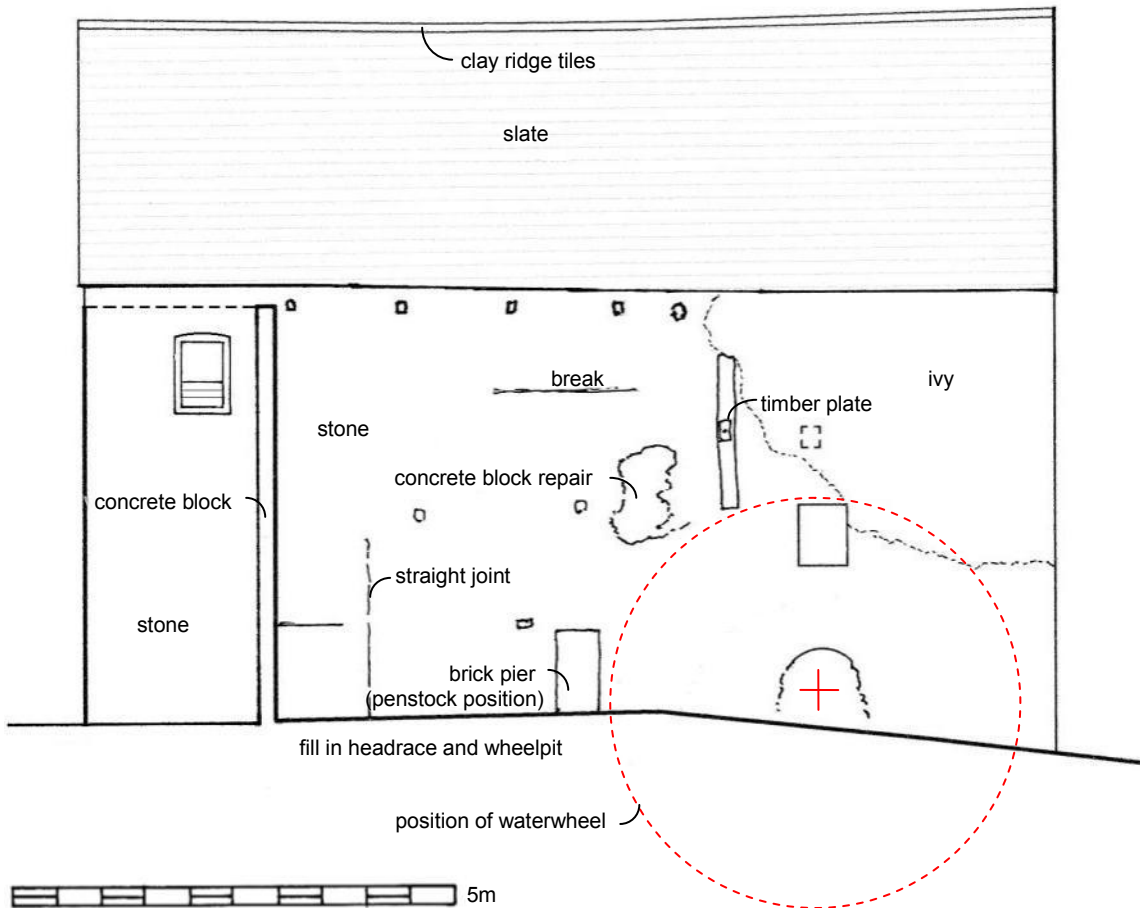


North-east elevation



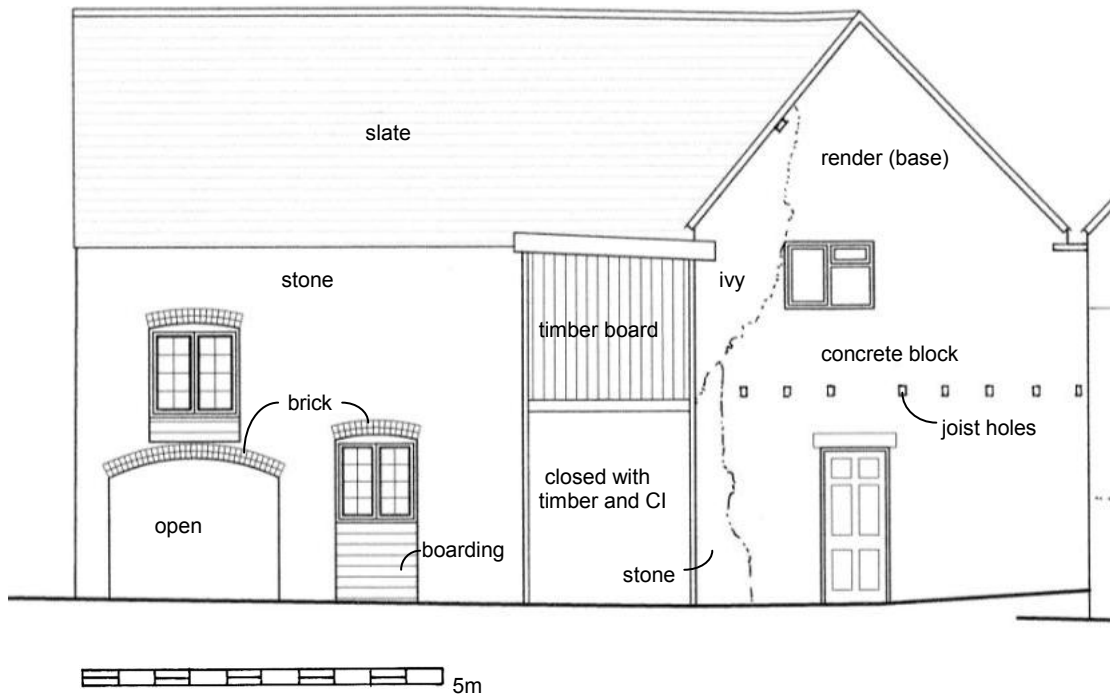


South-east elevation (pit wall)



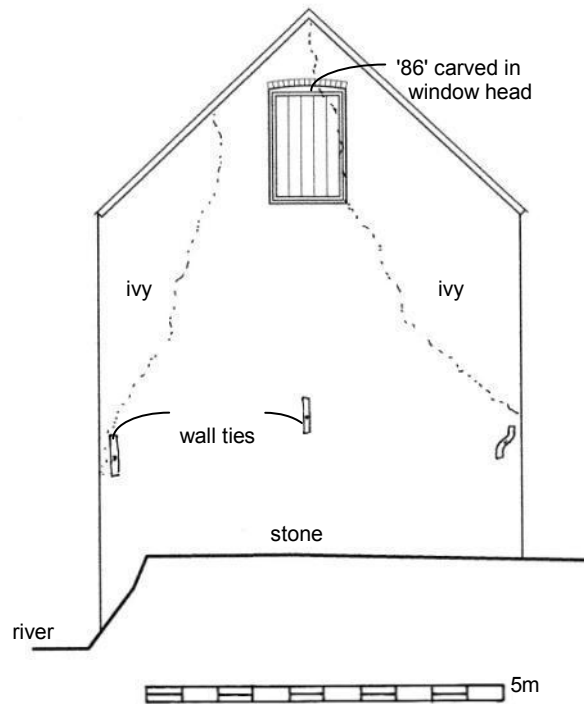


North-east elevation of workshop



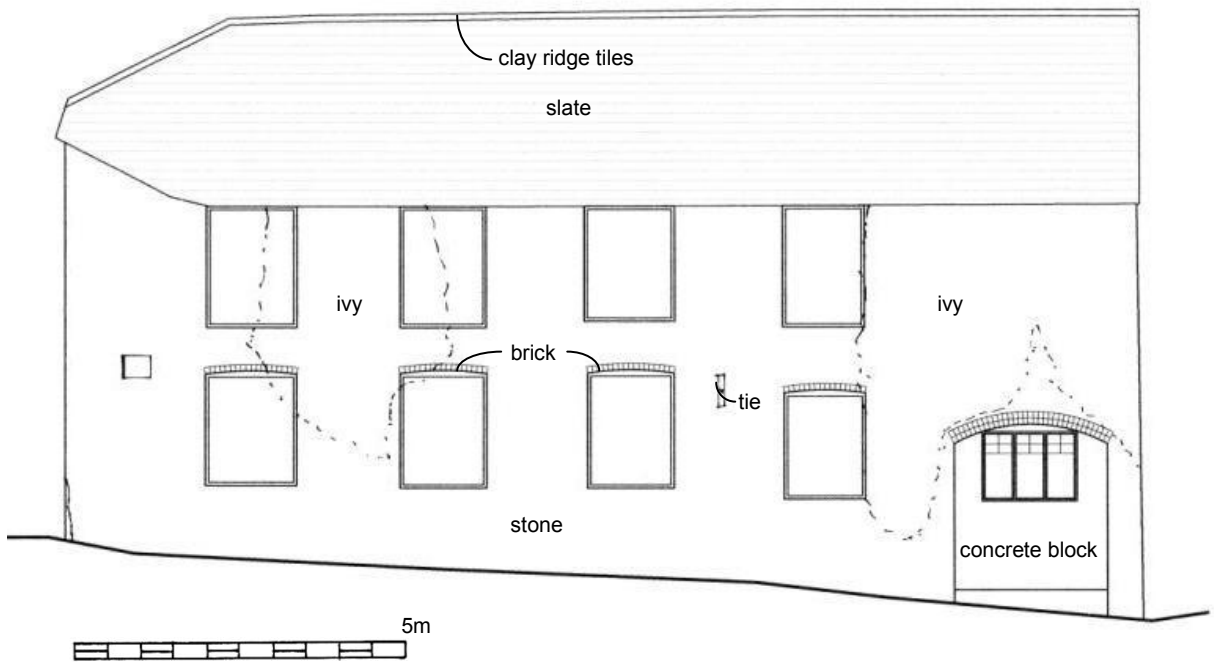


South-east gable end of workshop, from east



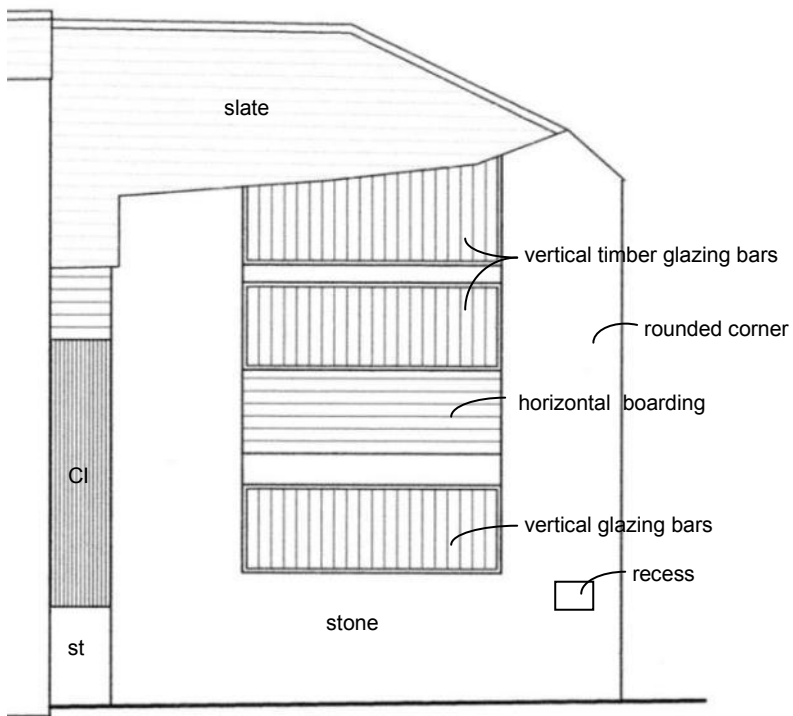


South-west elevation of workshop, from the south



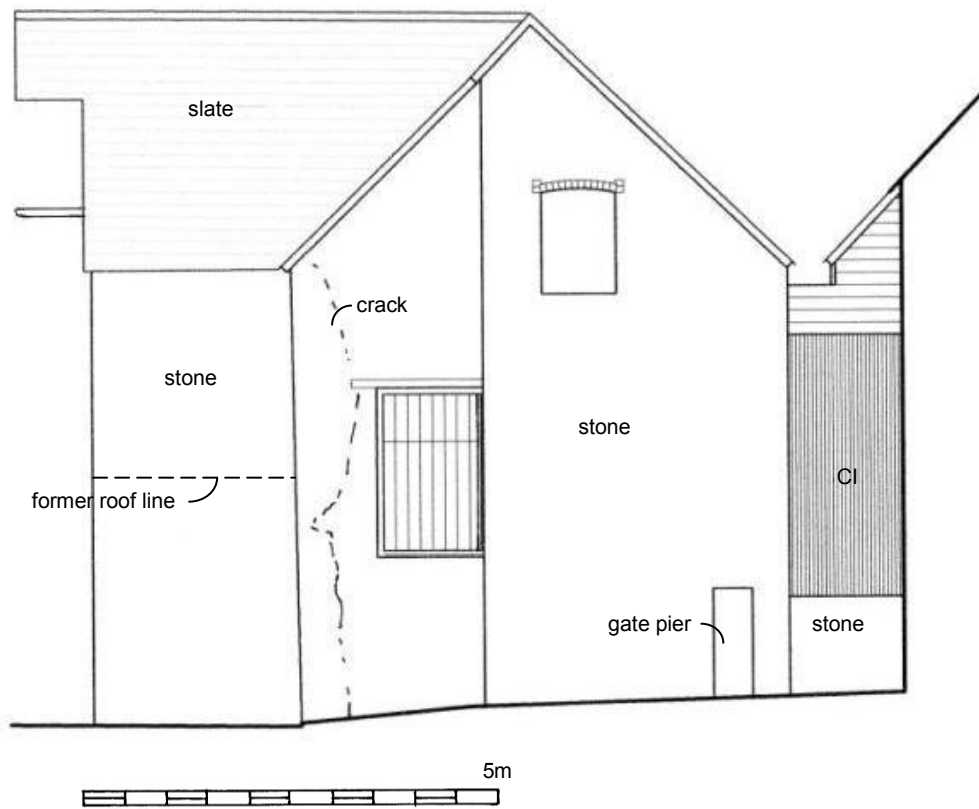


North-west end of workshop, from west

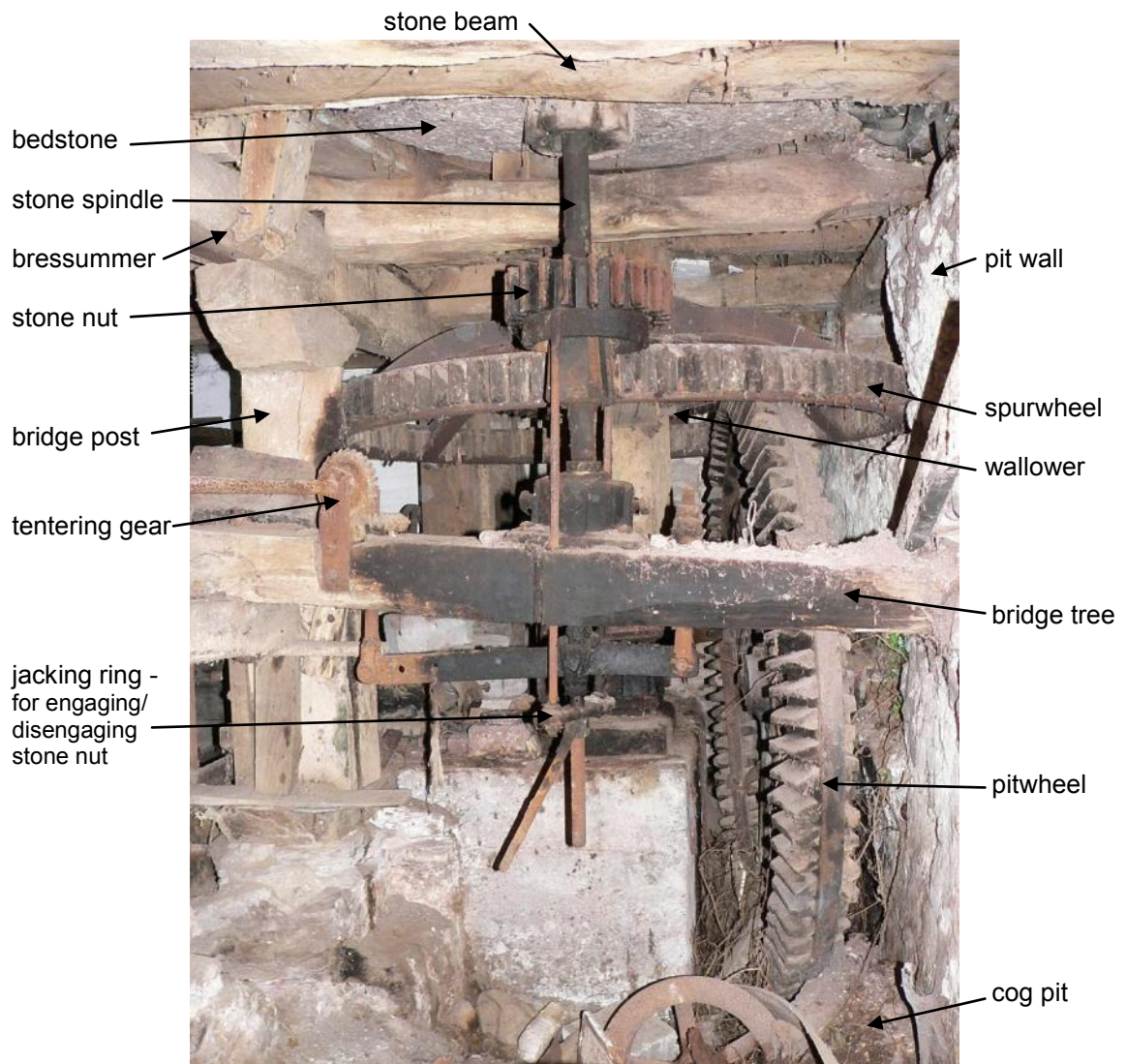




North-west end of workshop and part south-west elevation







Primary drive and drive to the millstones, from upstream  
 Naming of parts

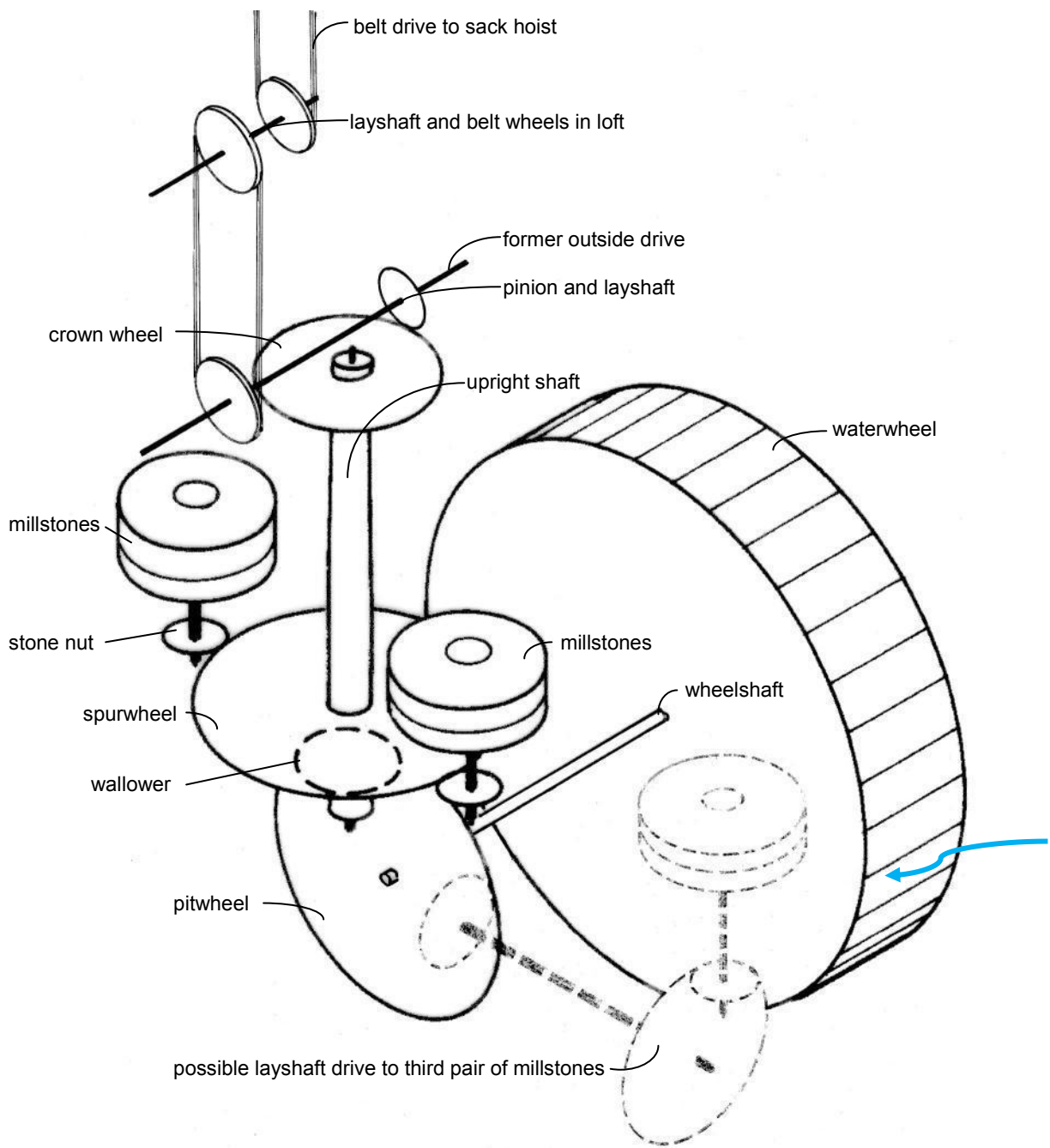


Figure 9: Manor Mill. Diagram of layout of machinery (not to scale)

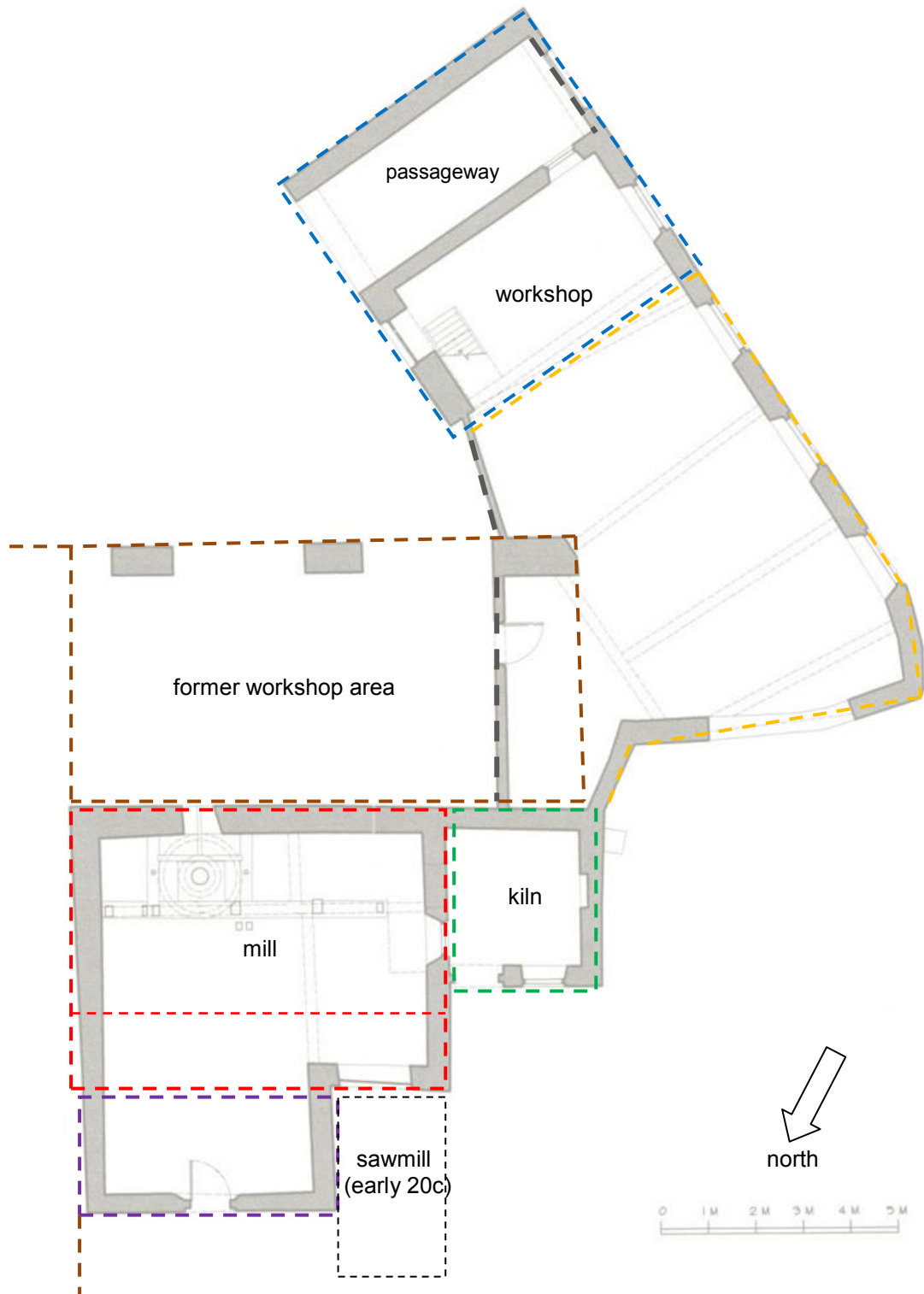


Figure 10: simplified phasing of buildings

- |                                      |  |
|--------------------------------------|--|
| <b>Phase 1</b> - original mill       | < 18c (thin line indicates possible earlier, smaller plan) |
| <b>Phase 2</b> - kiln                | < late18c  |
| <b>Phase 3</b> - extension           | early 19c  |
| <b>Phase 4</b> - workshop            | post 1840  |
| <b>Phase 5</b> - workshop extensions | 1840 - 1888 (?1886)  |
| <b>Phase 6</b> - workshop infill     | late 19c   |
| <b>Phase 7</b> - 20c infill          | late 20c   |



Mill ground floor: hurst and primary drive, looking east



Hurst, bridging and tentering gear to upstream millstones



Upstream end of hurst bressummer, with penstock control (left) and former meal spout



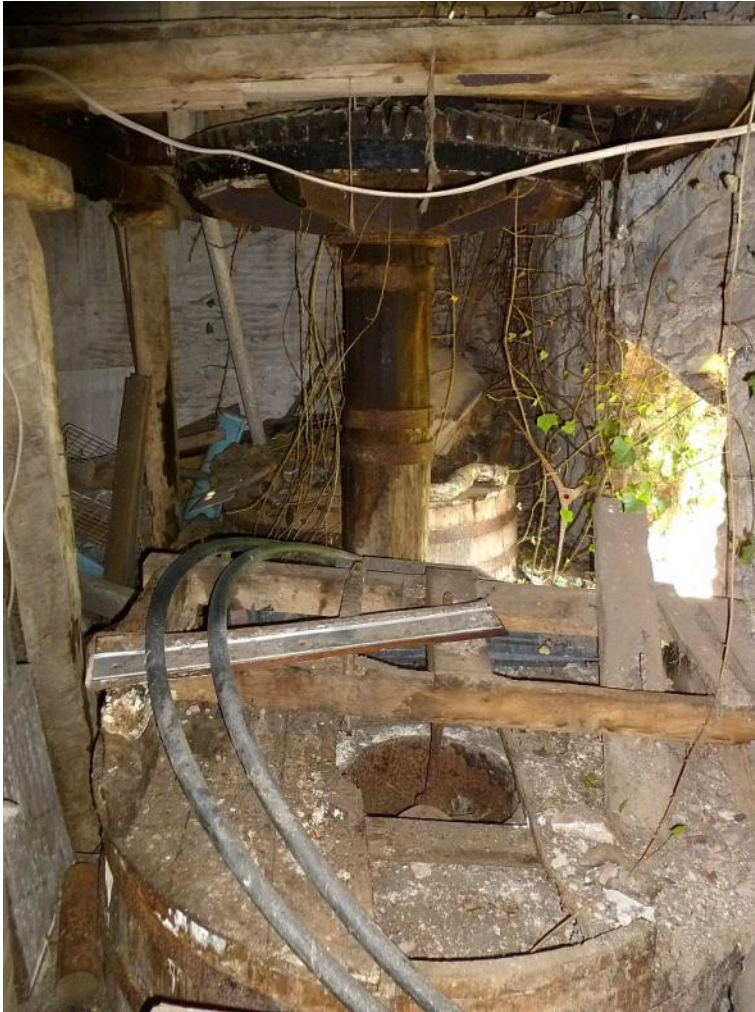
Primary gearing, showing dished arms of spurwheel



Underside of upstream bedstone, with stone nut on spindle



Upstream end of cog pit, with arch to lower level of former kiln



Stone floor, looking north-east, upstream millstones in tun in foreground with upright shaft and crown wheel behind



French burr runner stone leaning against pit wall, first floor



South-west corner of first floor, with steps up to second floor



Crown wheel at top of upright shaft, with pinion on the far side, on layshaft extending through the pit wall and back into the mill



Secondary layshaft and jockey wheel in loft



Sack hoist drive wheel and chain drum, with elevator to right



Loft gallery, looking to north-east, with stud and lath gable infill





Loft floor of mill, looking north-east



Mill roof, looking south-west to roof over kiln extension



Remains of top floor of kiln extension, looking south-west



Doors to kiln and first floor of mill



Detail of brick arched window head with iron strap lintel, northwest elevation of kiln



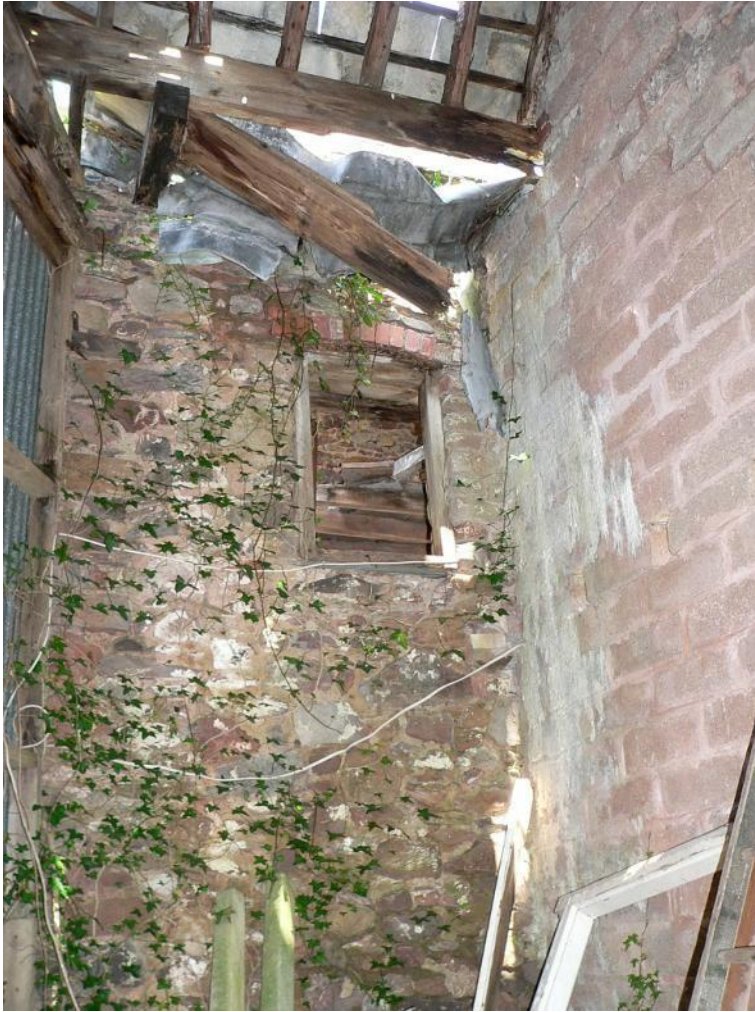
Remains of kiln floor tiles built into wall



Arched opening to cog pit with fragments of kiln floor tile on left



Kiln flue within thickness of wall, looking upwards



Second floor window to rear of kiln, from inside workshop, with modern concrete block wall to right



Roof and remains of upper floor over kiln, showing vertical struts under rafters



Site of former building to rear of mill, pit wall to right



Workshop building from the railway embankment to the south-east



Site of former building adjoining rear and north-east end of mill



Pit wall of mill, looking north-east (downstream)



Brick pier at upstream end of former waterwheel pit



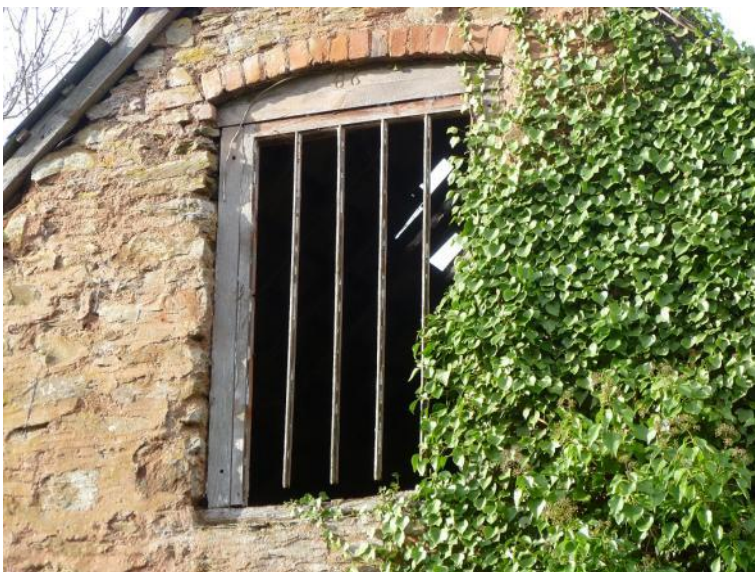
Displaced grindstone



Workshop from north-west, with Washford River to right



North-west gable windows to upper level of workshop



Window in south-east gable of workshop, with '86' carved in head



Workshop, ground floor, looking north-west



Workshop, first floor, looking north-west



Roof of workshop, with skewed layshaft on principal beams



## **APPENDIX: Exmoor's Past - the online Historic Environment Record**

MSO10527 - Manor Mills, Roadwater

ENPHER Number: MSO10527

Name: Manor Mills, Roadwater

Type of Record: Building

Grid Reference: ST 0343 3867

Parish: OLD CLEEVE, WEST SOMERSET, SOMERSET

### Summary

An 18th Century corn mill. Historic mapping suggests this building was originally much larger and extended northeastwards.

### Monument Types

CORN MILL (AD 18th Century to Modern - 1700 AD to 2050 AD)

### Designated Status

Listed Building (II) 1057517: MANOR MILLS

### Description

Corn mill, now disused. C18, undergoing renovation at time of survey (December 1983). Red sandstone random rubble, brick dressings, rendered in parts, slate roofs, gabled facade with catslide roofed projection right, hipped on return. Plan: long rear wing fronted to left with 2 and a half storey gabled bay, small addition set in angle. 2 storeys, 3 bays; hoist opening gable end with covered hood and bargeboards carried on diagonal supports, loft opening with lobed top and linked plank door below, recessed bays to right, 2 unglazed openings, a 9 pane window 2 segmental headed openings blocked, undergoing restoration. Long 4 bay return, segmental headed openings, waterwheel at rear. Interior not accessible at time of survey. Roadwater was noted in C18 and C19 for the large number of mills set beside the Washford River, many of which were fulling mills. [1]

English Heritage Listed Building Number: 264867. First Listed on 21/12/1984. [2]

Stone, Random rubble walls. Gabled roof [3]

The mill is shown on historic mapping as being a much larger building, extending northeastwards and possibly abutting / joining on to the building which now runs parallel to the main road to the north. [4,5]

### Sources and Further Reading

- [1] SSO673 - Index: 21/12/1984. Thirty-first List of Buildings of Special Architectural or Historic Interest. District of West Somerset (Somerset).
- [2] SSO2013 - Unassigned: Webster CJ, Historic Environment Record. 2005. Staff Comments, Somerset County Council.
- [3] SSO1 - Paper Records: Somerset County Council. Various. Somerset HER.
- [4] SEM6703 - Map: Ordnance Survey. 1868-1901. County Series, First Edition 25 Inch Map. 1:2500.
- [5] SSO1562 - Map: Ordnance Survey. 1904. 6" sheet 47NE.

### Other References

Exmoor National Park HER Number (now deleted): MSO12163

National Park: Exmoor National Park

Somerset SMR PRN: 30808

Somerset SMR PRN: 35111

Date Last Edited: Feb 27 2013 3:29PM