M7/7

COGGLESFORD MILL, EASTGATE, SLEAFORD

PHOTOGRAPHIC BUILDING SURVEY

(LEVEL 3)

Site Code: CMES 07
LCCM acc. no.: 2007.141
Planning refs.: N/57/0233/07 and LB/2126
NGR: TF 0745 4612
PCA job no.: 386

Report prepared for Economic, Community and Planning Services, North Kesteven District Council

by

S. A. Savage

July 2007

Pre-Construct Archaeology (Lincoln)
47, Manor Road
Saxilby
Lincoln
LN1 2HX
Tel. 01522 703 800
Fax 01522 703 656
e-mail info@pre-construct.co.uk

Cogglesford Mill, Eastgate, Sleaford

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Introduction

Pre-Construct Archaeology (Lincoln) was commissioned by Economic, Community and Planning Services, North Kesteven District Council (NKDC) to undertake a Level 3 photographic survey of the floor of Cogglesford Mill, Eastgate, Sleaford ahead of a change of use to the building which would necessitate the installation of a new floor.

Planning Background

The proposals for change of use include the installation of a new floor, which will be suspended above the existing mill floor, thus ensuring the preservation in situ of original fabric of the building. In cases where historic fabric is to be concealed for the long-term, planning guidance advises a programme of work to record and make available evidence of the building's history, development and use, contained within the fabric to be concealed.

The NKDC Heritage Officer has recommended a survey to Level 3 (English Heritage, 2006) to record the information contained in the floor of Cogglesford Mill, relating this to the wider development and history of the whole building.

Methodology

The photographic survey was undertaken by S A Savage, on Tuesday 3rd July 2007.

The survey was undertaken to Level 3 (English Heritage 2006). In summary, a level 3 survey is an analytical record, comprising an introductory description followed by an account of the building's origin, development and use, including the evidence on which the analysis has been based; including drawn and photographic records as required. The information in a level 3 analytical record is chiefly obtained from examination of the building under record, supplemented by readily accessible documentary sources.

Photography was undertaken in 10.4-megapixel digital format and 35mm monochrome (using Ilford FP4 plus ISO125 film stock) for archival purposes. It included general shots of the site and detailed photography of room arrangement along with a detailed record of the floor in Rooms 1 and 2 (which will be obscured).

Weather conditions were generally overcast with occasional torrential showers, which necessitated the use of flash in nearly all interior situations. An electricity duct in the northeast corner of Room 2 leaked a steady stream of water onto the northern part of the floor, and water also penetrated the west door in Room 1. It was decided not to use scale bars in shots of the floor, as it was felt that these would distract from the detail of what was a very dark subject.

The photographs were further supplemented by Room-based Record Sheets and Brickwork Recording Sheets.

Constraints

The mill, together with its mill race and bridge is a Grade II Listed Building. It is also located within the Sleaford Conservation Area.

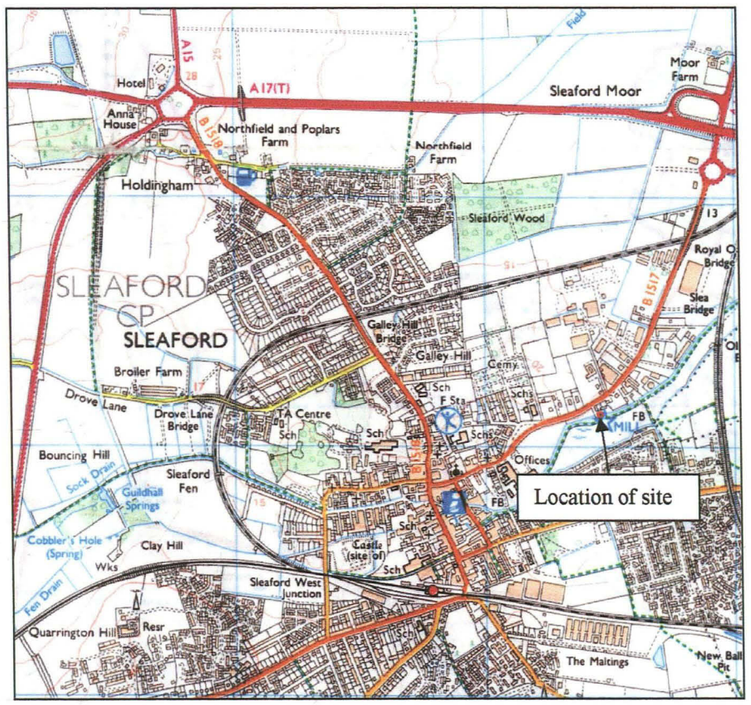

Fig. 1: Site location. The site is highlighted in red. Scale 1:25000.
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Historical Background

Cogglesford Mill takes its name from a nearby ford on the old course of the River Slea: the point at which a Roman road later known as King Street crossed the river on its way to the regional capital at Lincoln.

The mill itself stands on the New Slea, which branches off the Old Slea a little way upstream from the mill: watermills have been used in England since the 7th century AD, and it has been suggested that the New Slea was always an artificially excavated channel, cut in the Anglo-Saxon period to drive the mills of the Manor of Sleaford (NKDC, n.d.).

The Domesday Survey of AD 1086 records eight mills in the Manor of Sleaford, which had been granted to the Bishop of Lincoln after the Norman Conquest: the mills were a profitable enterprise, jointly rendering £10 annually in rents (Foster and Longley, 1924). During the medieval period, the mill now called Cogglesford Mill was known as 'the sheriff's mill', possibly referring to the estate official called a *shire reeve*, at whose mill the tenants of an estate were required to pay to have a proportion of their grain ground, as a form of taxation.

During the 15th century, the Bishop of Lincoln ceased to administer the Manor of Sleaford directly, and leased the various properties to local men: it was eventually sold in 1547. The current name was coming into use at this time: a court case in the mid-16th century referred to the mill both as the Sheriff's Mill and as Cogglesford Mill.

At least part of the medieval mill was of stone, although much of the structure was probably timber. This mill and the associated Mill House were demolished during the early 18th century, and replaced by brick buildings, both one storey high with lofts, and a thatched stable. The north wall of the new mill was built of salvaged stone from the previous one (some stones display scratched tally marks in positions that are not now accessible), and some of the large timbers have also been re-used. It was initially equipped with two water-wheels, one behind the other, to increase its working capacity, as the technology to operate two sets of grinding stones from the same wheel had yet to be invented.

According to a survey made in 1783, the storage capacity of the mill had been increased by the recent addition of a granary. Although the mill still had two wheels, it now had four pairs of grinding stones, indicating that modern gearing mechanisms had been introduced.

At the end of the 18th century, the New Slea was improved and canalised, becoming the Slea Navigation: cargo ships could now pass up the navigation as far as Sleaford. The miller at the time, William Almond, was a shareholder in the scheme, which would improve his business firstly by guaranteeing a steady, continuous flow of water, and secondly by allowing river traffic to come to his door. The mill prospered, allowing a series of structural improvements in the early 19th century. A new top floor (garner floor) was added to the front range, to store grain before milling; the thatched stable roof was replaced by pantiles; the Mill House was extended, and the mill pond improved. The mill machinery was also upgraded, replacing the two 18th century water-wheels with a single wheel.

Trade along the Slea Navigation fell away in the second half of the 19th century, due to competition from the railways. Maintenance declined, making transport even less competitive, and reducing the water supply to the mills. The practices of milling by wind or water power were also dying out as steam engines came into general industrial use: a steam-powered flour mill, served by its own railway siding, was built in Sleaford in 1858. At some point during this period, Cogglesford Mill acquired its own steam engine, which was housed in the rear range of the ground floor: however, this introduction failed to halt the mill's financial decline.

Commercial milling came to an end at Cogglesford Mill in 1883, when the mill was taken over by the local Board of Health, so that its mill-race could be used to power a sewage pump. The detachable portions of the mill's fittings and machinery were offered for sale by auction in 1885, but many lots went unsold. In the event, the mill was never used to house the sewage pump: the mill-race was diverted to a purpose-built pump-house. During these works, the water-wheel was bricked up, but the mill was otherwise left intact.

The Mill House continued to be occupied throughout the late 19th and 20th centuries. In 1966, many properties belonging to the Manor of Sleaford were detached and sold, including the Mill House and the shell of the mill, which became the premises of a scrap-metal business. The mill was designated a Grade II Listed Building in 1973, but was already derelict. The house and mill were sold again in 1988, and the mill was conveyed to North Kesteven District Council two years later, enabling restoration work to start. Although the building and the external structures were in poor condition, the water-wheel and much of the internal machinery were still in situ, and the mill was restored to working order in 1992 (NKDC, n.d.).

Asphalt and tar were in common use both for damp-proofing and paving by the 1930s. They were laid hot, when as damp-proofing in thin layers, in paving often in two thicknesses of c. 1 ½" and ½" on base layers of concrete or well compacted hard core. Both natural asphalt and artificial (mixtures of aggregate and tar, pitch or creosote) were used. (Newbold, H. B., c1930)

Results

Plans showing the internal arrangement of the building (with the rooms numbered as in this report) and the location and direction of the photographs appear at the close of the report.

Cogglesford Mill stands on the north bank of the River Slea, 0.7km east of the centre of Sleaford.

The mill is a 'L'-shaped structure constructed in a mixture of limestone rubble and brick with a ridged pantile roof. It consists of a main building of 2 ½ storeys, aligned N-S, with an extension of 2 storeys on its SE side. The north and east walls on the ground floor of the main building, along with the north wall of the extension are limestone rubble with large quoins. The rest of the ground floor (and all of the extension) is constructed in 2" – 2 ¼" brick, while the upper part of the main building is in 2 ¾" brick. A chimney, also in 2 ¾" brick is present on the west side. All of the windows are modern casements, and most of the doors are modern, apart from the door in the west wall, which appears to be of some antiquity.

A modern single-storey toilet/amenity block has been added to the northeast, of re-used 3" brick in 3-course English Garden Wall bond with a pitched pantile roof.

Plate 1: general view of the mill, looking southeast.

Plate 2: general view of the mill, looking northeast.

Plate 3: general view of the mill, looking northwest.

Plate 4: general view of the mill, looking southwest.

Ground Floor

The ground floor comprises two larger rooms, connected on the north side. This floor was mainly occupied with the transportation of raw materials to the rest of the mill, along with the bagging and transport of the product. A timber partition at the south side separated this activity from the vertical cogged wheel, gears and drive shaft housed in Room 3, adjacent to the waterwheel.

Plate 5: general view of Room 1, looking southeast. The timber partition from Room 3 with the flour chutes is visible on the facing wall.

Plate 6: general view of Room 2, looking northwest.

Plate 7: general view of Room 3, looking west from Room 2. The base of the main drive shaft and the main gear from the waterwheel are visible in the middle of this room.

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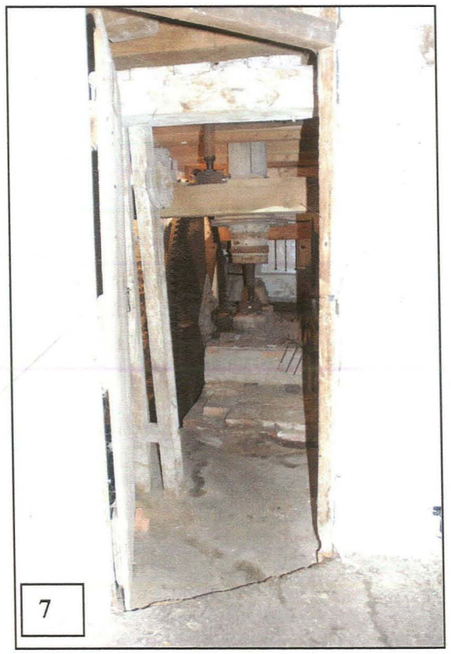

First Floor

It is on this floor that the milling process took place. Two pairs of millstones are now present here, connected to the main power shaft by a large horizontal driving wheel. Trapdoors in the floor and ceiling allowed the passage of sacks of grain to the bins on the floor above. Here, the millstones (set in pairs within wooden boxes) ground the grain into flour, which was directed through wooden chutes to the floor below.

Plate 8: general view of the first floor (Room 4) of the mill, looking southeast. The main drive shaft, gearing and a pair of millstones are in the background, the trapdoor and grain hoist are in the foreground.

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Plate 9: general view of the first floor (Room 4), looking west.

Plate 10: general view of the first floor (Room 4) of the mill, looking northeast. The wheel pit is in the foreground.

Plate 11: The waterwheel, seen from Room 4, looking west.

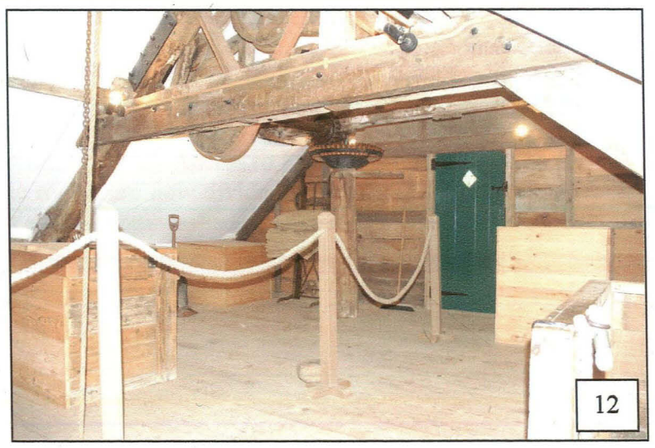


Plate 12: general view of the second floor (Room 5) of the mill, looking southeast.

Plate 13: detail view of the main driveshaft and grain hoist machinery.

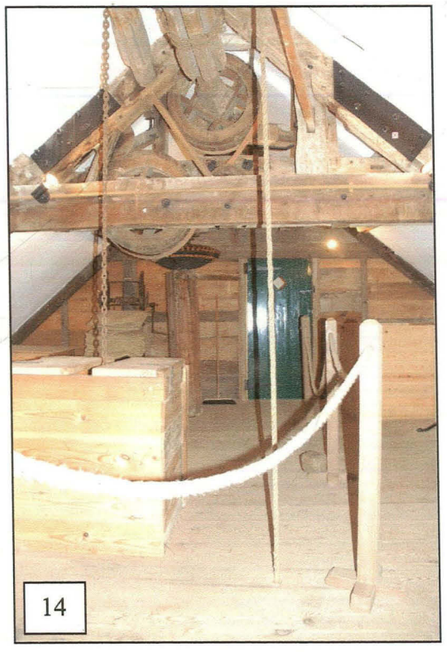


Plate 14: The grain hoist and trapdoor on the second floor, looking south.

Second floor (garner floor)

On this floor the grain was placed into bins that distributed it through wooden chutes down to the millstones on the floor below. The main power shaft has been extended to this level and powered a hoist that lifted the sacks of grain to this floor. An electric motor (used to assist the waterwheel) is housed behind a timber partition at the southern end of this floor.

The floorboards and much of the partitions on this floor have been recently renewed, while the roof trusses have been refurbished and reinforced with steel plates. The plaster and lath ceiling is also a modern reconstruction.

Room 1

This is the larger of the two rooms of the ground floor. The main entrance to the mill is in the west wall, flanked by two small casement windows. A door (now unused) that would have given access into the yard is present in the east wall. Access to Room 2 is open, to the south of this door – the rooms are now divided by a pair of modern glazed doors. The walls are all whitewashed. The southern wall of this room is the heavy timber partition that separates this room from Room 3.

Plate 15: general view of Room 1, looking southeast. The timber partition from Room 3 with the flour chutes is visible on the facing wall.

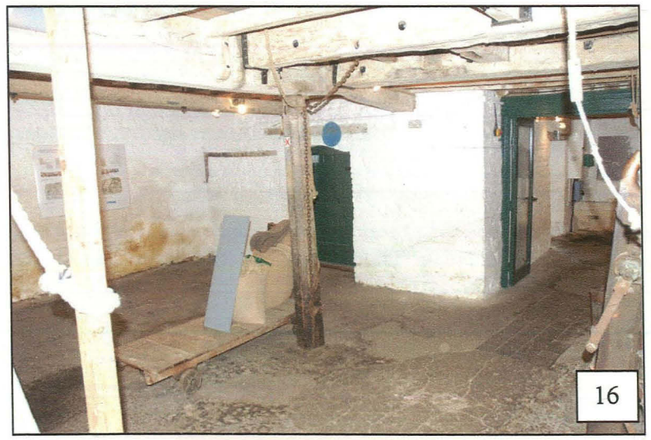


Plate 16: general view of Room 1, looking northwest.

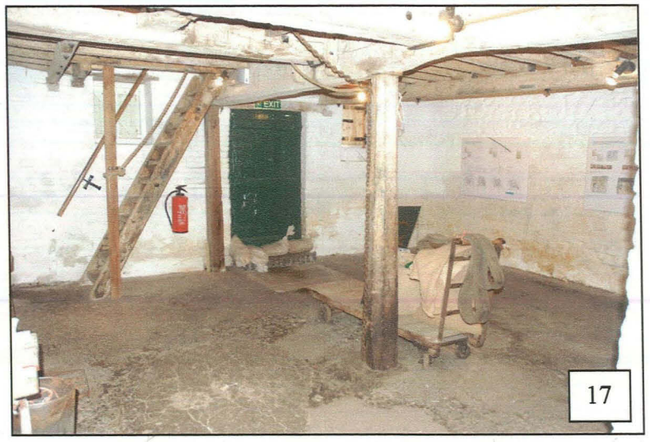


Plate 17: general view of Room 1, looking northeast.

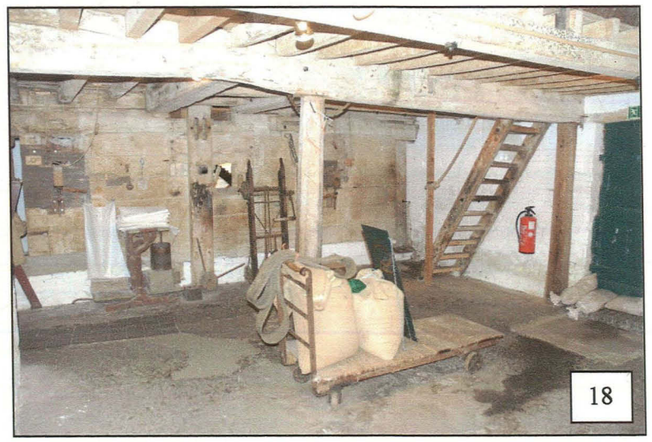


Plate 18: general view of Room 1, looking southwest.

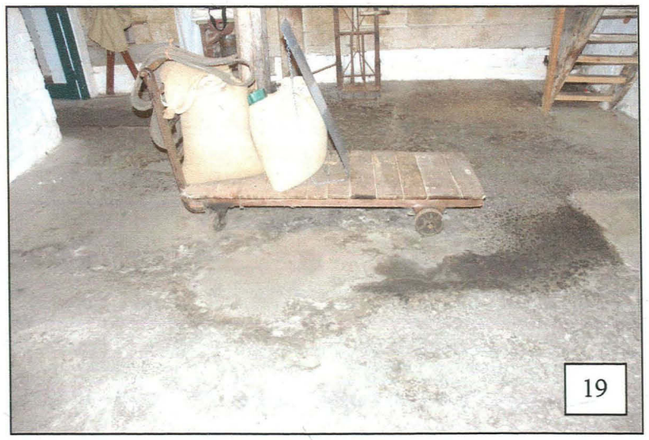


Plate 19: general view of the floor in Room 1, looking south. A patch of modern tarmac is in the foreground.

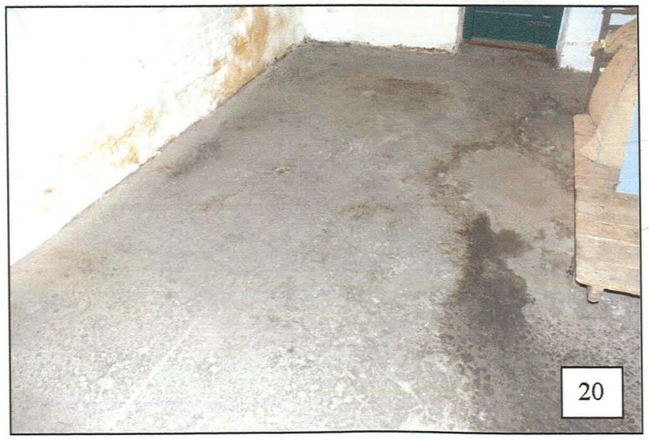
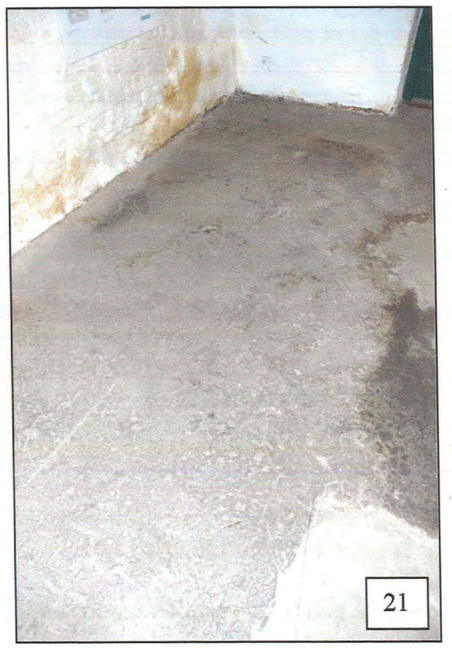
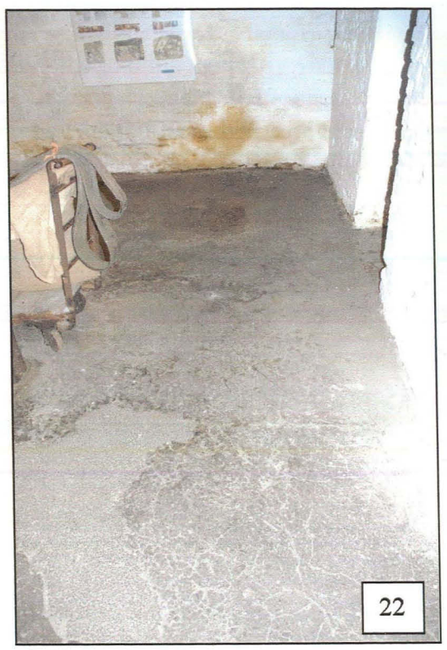
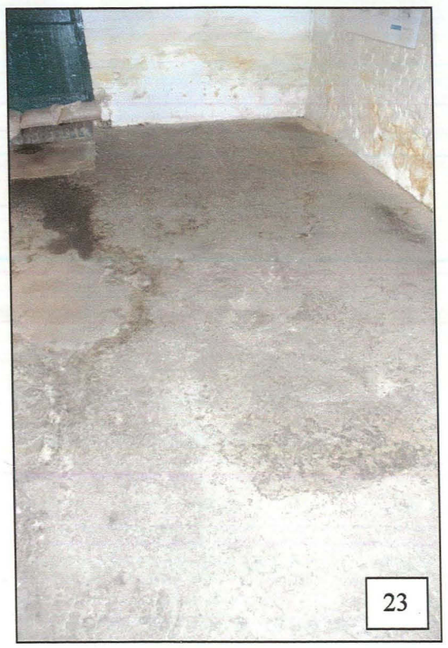


Plate 20: The floor on the north side of Room 1, looking northeast. The jointing between the strips of tarmac is visible in the lower left of the picture.







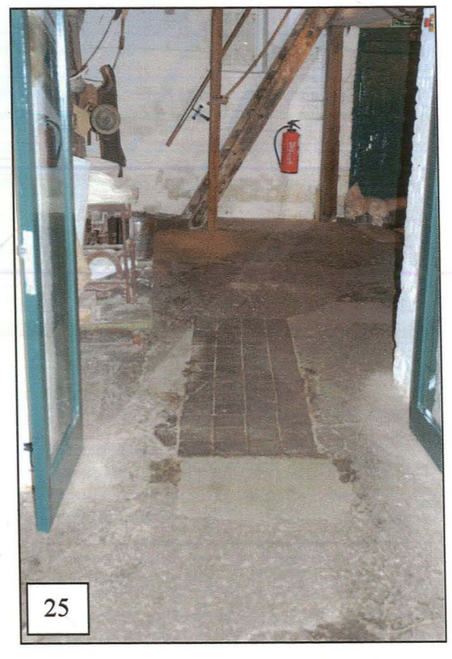


Plate 21: The floor on the north side of Room 1, looking northeast.

Plate 22: The floor on the east side of Room 1, looking north. Another patch of modern tarmac is in the lower left of the picture.

Plate 23: The floor on the north side of Room 1, looking northwest. This is the best preserved area of the original tarmac floor.

Plate 24: Area of quarry tiles between Rooms 1 and 2, looking west.

Plate 25: Area of quarry tiles between Rooms 1 and 2, looking west. A rectangular patch of modern tarmac is in front of the tiles.

Plate 26: Detail of the base of the octagonal supporting post in Room 1, with timber pad, looking north.

Plate 27: The patch of concrete in Room 1 below the grain hoist trapdoor, at the west side of the quarry tile area, looking east.

The majority of the floor area in Room 1 is of asphalt or tarmacadam. It was originally laid in east-west strips 4 ft in width – the jointing is clearly visible in the northern (less worn) area of the floor. The asphalt is heavily worn and has been frequently repaired, in a mixture of concrete and more modern asphalt.

The room is dominated by an octagonal timber post, which has been wedged below the main east-west beam of the first floor. This post rests on a timber pad c. 12" square.

Immediately below the first floor trapdoor (through which the sacks of grain are lifted to the bins on the second floor) is a large patch of concrete. This does not appear modern, and has been worn smooth. Leading away from this in the direction of Room 2 is an area of quarry tiles, four tiles (or 2ft) in width and 14 tiles (or 7ft) in length.

The main door has a step of modern 2 ½" blue engineering bricks, in front of which is a rectangular patch of modern concrete.

In the eastern doorway, a double row of 6" quarry tiles is present.

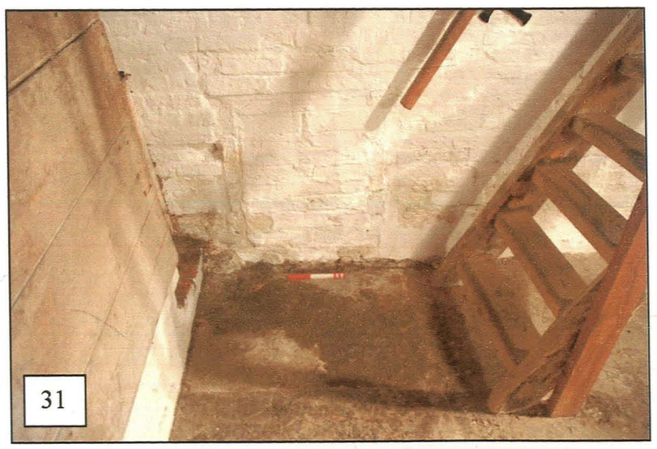
In the southwest corner of the room a fireplace has been bricked up, but the hearthstone is still present in the floor, now missing its southwest corner.

Plate 28: The concreted area inside the west door of Room 1, with the recent engineering brick step, looking west.

Plate 29: Double row of quarry tiles inside the east door of Room 1, looking east.

Plate 30: The hearth stone at the foot of the steps to the first floor.

Plate 31: Same shot as plate 30, but without flash to show the bricked-up fireplace in the wall here.



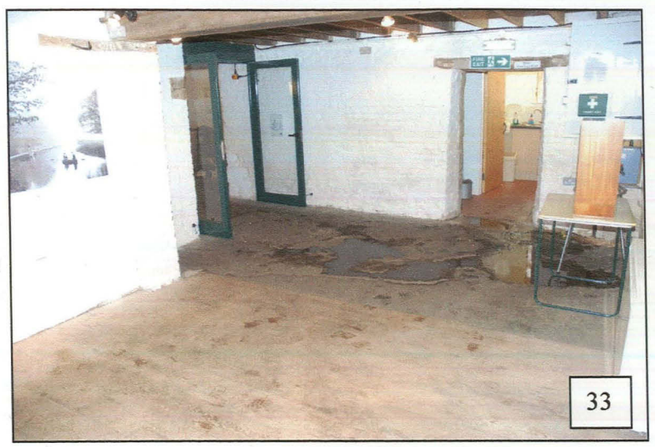


Plate 32: general view of Room 2, looking south.

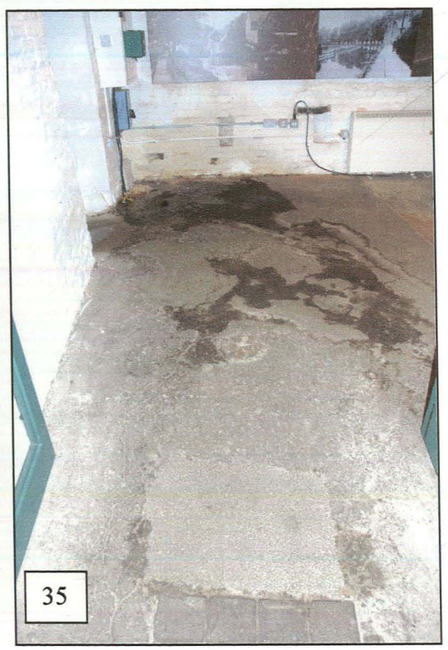
Plate 33: general view of Room 2, looking northwest.

Plate 34: The northern part of the floor in Room 2, looking northeast from the doorway of Room 3.

Plate 35: The northern part of the floor in Room 2, looking east from Room 1.

Room 2

This is the smaller of the two rooms on the ground floor and occupies the southeastern extension. The southern part of this room would have been occupied by the secondary waterwheel and its associated drive shaft. It has a modern casement window in the south wall, which occupies the former position of the access door to the secondary waterwheel This room is open to Room 1, but separate access was afforded to the yard through a door in the north wall. This doorway is now open to a toilet/amenity block that has been recently added on this side.



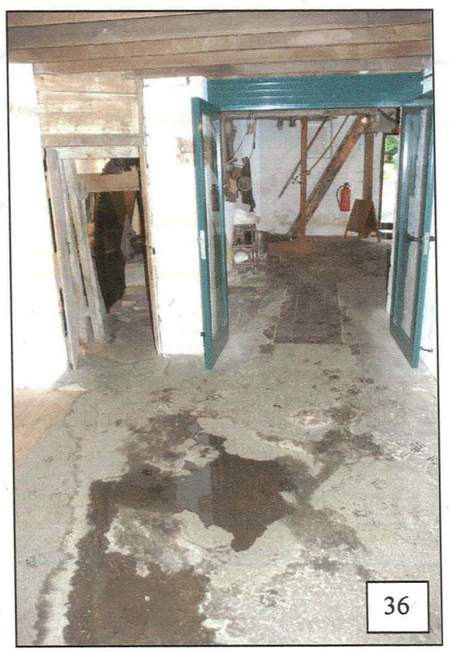


Plate 36: general view of Room 2, looking west into Rooms 1 and 3.

Plate 37: The tarmac floor on the north side of Room 2, looking north.

Plate 38: general view of Room 2, looking east from Room 1.

The southern two thirds of this room is floored in wood: 8 ¼" tongued and grooved floorboards laid east-west. This is a modern replacement of an earlier floor, the original having been constructed over the disused secondary wheel pit.

To the north of the timber floor, the floor in Room 2 is again of asphalt (or tarmacadam). A clear joint between this floor and that of Room 1 is visible adjacent to the modern glazed doors which separate these rooms. This floor is again heavily worn and has been repaired. The southern edge of the earliest asphalt appears to have been laid on a diagonal line between the door into Room 3 and the northeast corner of the room. A patch of more recent asphalt follows a divergent diagonal to the south of this strip, while modern asphalt has been used to fill in the space between this and the timber floor.

The thickness of the flooring in Room 1 could not be ascertained; however the thickness of the floor in Room 2 was exposed in two locations. The floor of Room 3 is 3-4" lower than that in Room 2, and a row of seven 2 ¾" bricks forms the edge of the step. These bricks, all 4 ½" in width are only exposed at the edge of the floor here, but are laid perpendicular to the angle of the doorway. The floor in this doorway is exposed in section and appears to be of two layers, a lower layer ¾" thick with a ½" layer over it. In the northeast corner of Room 2 the floor has broken out, and a modern electricity duct inserted. It was not possible to discern if the floor was of more than one layer here, but it had a thickness of 1 ½".

In two places the asphalt floor has worn through and in these locations a small area of underlying stone has been exposed; a further stone protrudes through the floor and is probably a padstone for a supporting post (no longer evident). The stones are discoloured and heavily fragmented making identification impossible.

Plate 39: The western part of the tarmac floor in Room 2. The scale is in front of the padstone.

Plate 40: detail of padstone in the floor (see plate 39).

Plate 41: The modern timber floor over the secondary wheelpit in the southern part of Room 2, looking south.

Plate 42: View of the tarmac floor in Room 2 from Room 3. The two slots for drivebelts can be seen in the wall opposite.

Discussion and Conclusions

It is generally considered that this floor is attributable to the period directly before the mill passed into the hands of NKDC, when the site was occupied by a scrap merchant.

Although widely thought to be modern, the first asphalt was used in road construction in Paris in 1824. Most of the UK road network was tarmac by the turn of the twentieth century. The tar used in tarmac was either naturally occurring bitumen or (more likely) a by-product from the production of coal gas, and later petroleum fractionation. Asphalt was also considered to be a very good damp-proofing material.

The jointing in the original asphalt surface indicates that the floor was laid in 4ft wide east-west strips. The pattern of wear and repairs suggests that the floor is contemporary with the use of the building for milling rather than storage. The heaviest wear is present in the area below the grain hoist, and in the area between Rooms 1 and 2. Here, the floor has been repaired both with modern asphalt and concrete and appears to have been supplemented by quarry tiles in areas where asphalt would have been or proved to be insufficiently hard-wearing. Interestingly, the width of the patch of tiles between Rooms 1 and 2 is only 2-3" wider than the axle widths of the sack carrier and trolley on display in this room. This appears more consistent with the building's use as a mill (transportation of sacks of grain to the grain hoist and sacks of flour from the flour chutes).

The edges of the original asphalt surface in Room 2, which run diagonally to the building lines, are parallel to the angle of the rectangular holes in the east wall for power transfer belts (either from or to a steam engine which may have been located in Room 2 or in an outbuilding to the east). This suggests that the floor was laid while the steam engine was in situ and working, as it is unlikely that a contemporary floor would have continued into this area: the belts were at a low level and probably had a guard structure. Any steam engine was long gone from the building by the time it was used as storage.

If, however, it was the intention to produce a level surface (for which asphalt is ideal) it may be that protruding repairs or hard-wearing areas of the earlier floor surface (the concrete below the grain hoist and quarry tiled area) were left showing in the present surface and giving a false impression of antiquity to the asphalt. It may also be that the edge of the asphalt in Room 2 merely follows the line of the earlier floor.

The nature of the floor below the asphalt also remains enigmatic. Although a row of 2 ¾" bricks is seen below the asphalt in the doorway of Room 3, this may only represent a threshold. Elsewhere, heavily fractured stone can be seen where the asphalt has worn through. Only partial or complete removal of the asphalt surface would fully answer these questions.

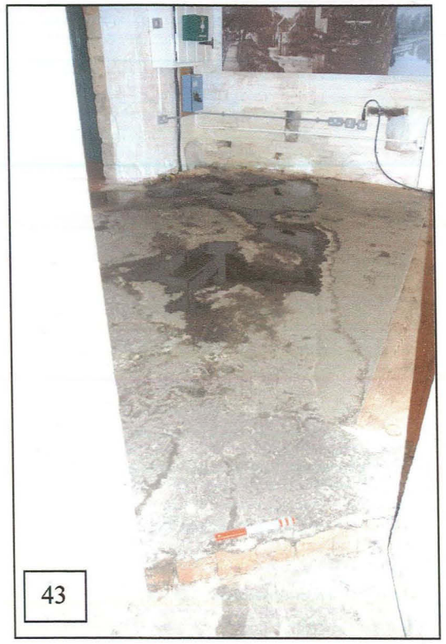


Plate 43: Modern concrete patch in the north doorway of Room 2, with the modern tiled floor of the toilet/amenity building beyond, looking north.

Plate 44: The edge of the tarmac exposed in the doorway of Room 3.

Plate 45: same shot as 44, but taken without flash to emphasise the exposed bricks below the tarmac floor.

Archive

A copy of this report will be placed with the Lincolnshire Historic Environment Record, a publicly accessible resource, and will form a long-term record of this part of the building's history. The archive will be placed with the Lincoln City and County Museums Service at The Collection, Lincoln.

The archive will comprise the following:

2no Monochrome films, totalling 42 exposures
1 file of digital images, totalling 45 images
with accompanying index sheets and plans
showing the position and direction of photos

1no General Account Sheets
2no Brickwork Recording Forms
5no Room-Based Recording Forms
This Report

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Cogglesford Mill, Sleaford, Lincolnshire - Pre-Construct Archaeology (Lincoln)

OASIS ID - preconst3-28129

Versions

View	Version	Completed by	Email	Date
View 1	1	S A Savage	ssavage@pre-construct.co.uk	2 July 2007
View 2	2	S A Savage	ssavage @pre-construct.co.uk	11 July 2007
View 3	3	S A Savage	ssavage@pre-construct.co.uk	11 July 2007

Completed sections in current version

Details	Location	Creators	Archive	Publications
Yes	Yes	Yes	Yes	1/1

Validated sections in current version

Details	Location	Creators	Archive	Publications
No	No	No	No	0/1

File submission and form progress

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GROUND FLOOR

KEY

- Original Asphalt
- Worn areas of Original Asphalt
- Asphalt repair
- Modern Asphalt repair
- Timber
- (A) Hearth and (B) Padstone
- Stone showing through
- Concrete
- Quarry Tiles

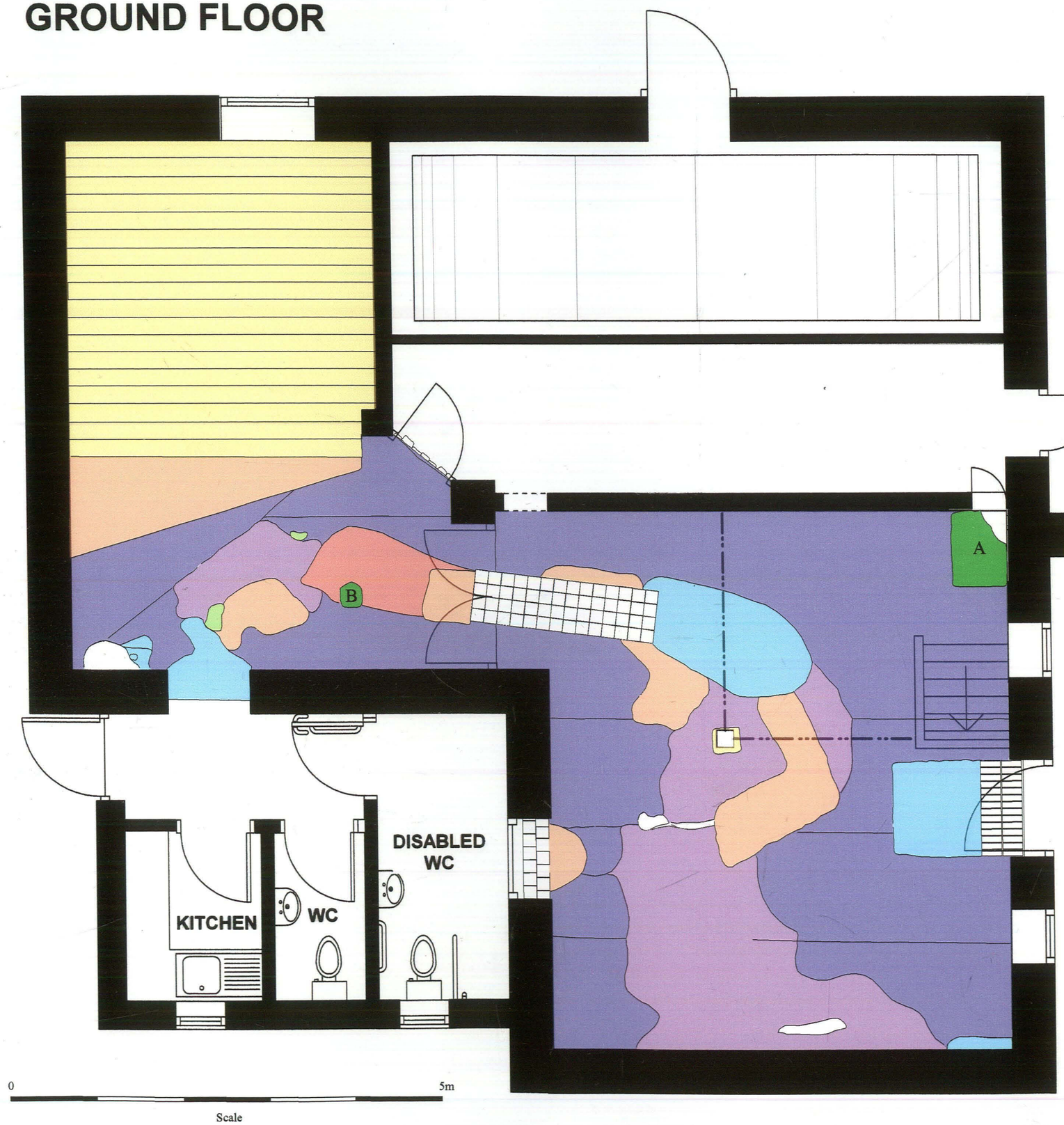


Fig. 2: Plan showing the floor surface of the ground floor of Cogglesford Mill. Scale 1:50

GROUND FLOOR

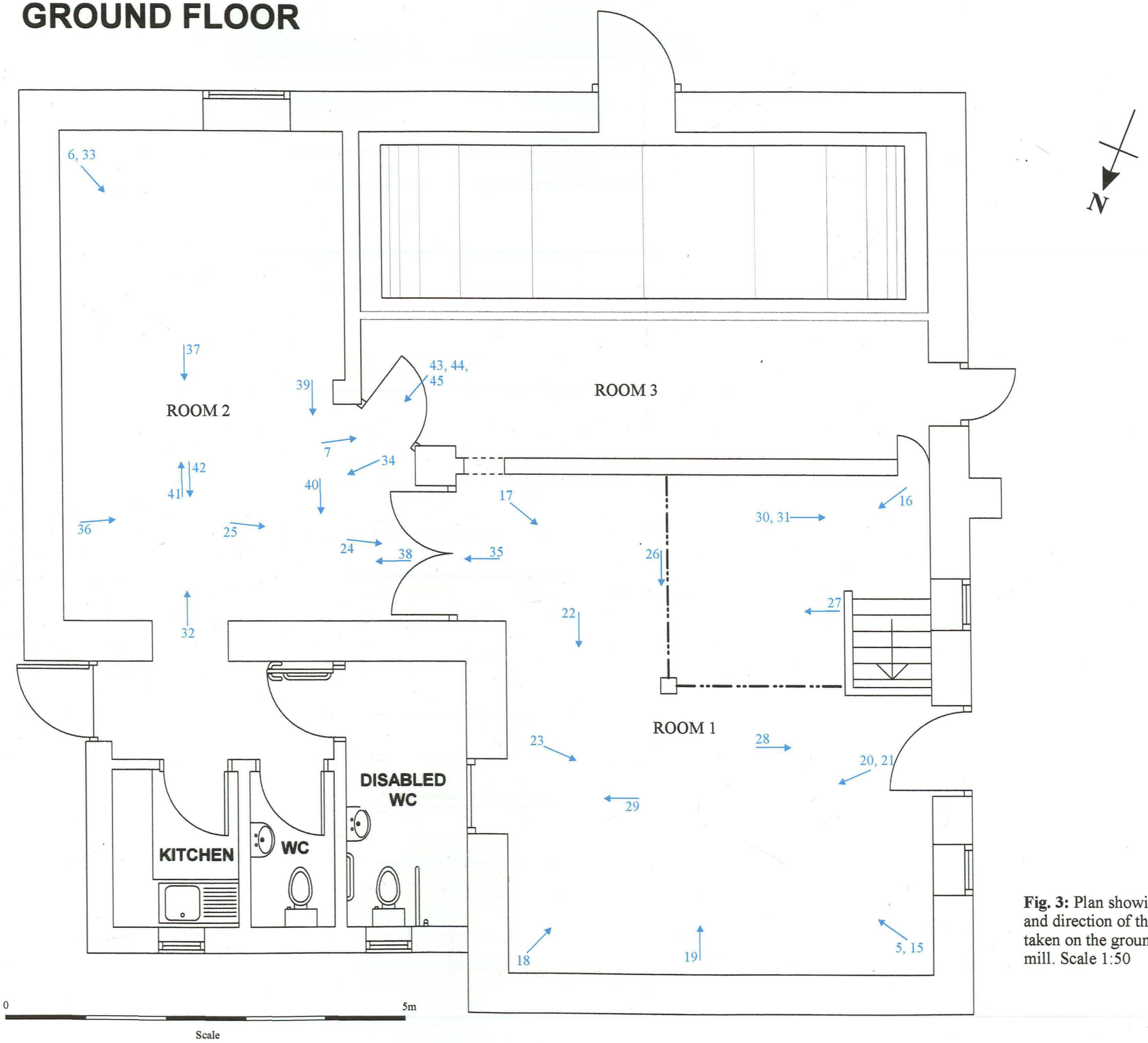
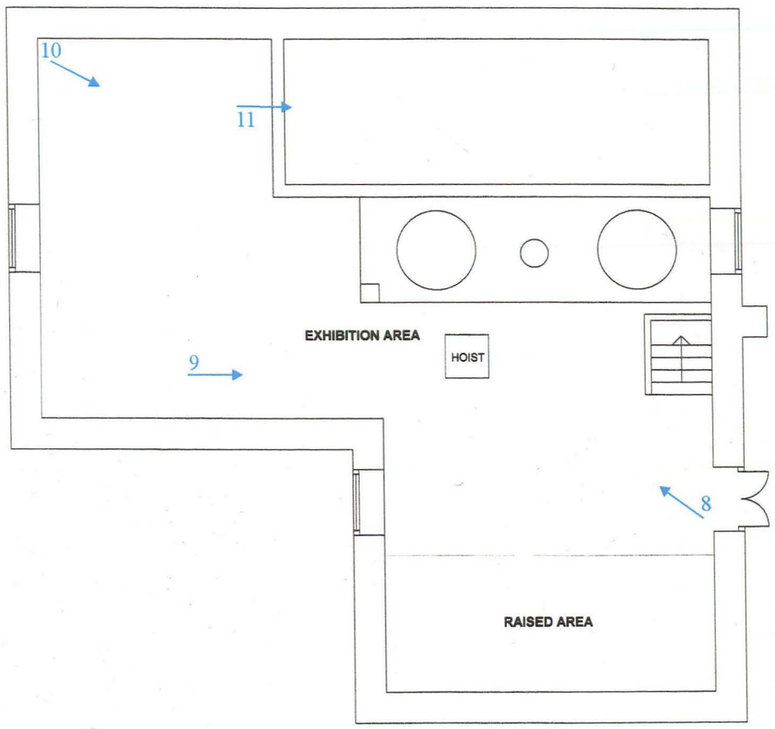


Fig. 3: Plan showing the position and direction of the photographs taken on the ground floor of the mill. Scale 1:50

FIRST FLOOR



SECOND FLOOR

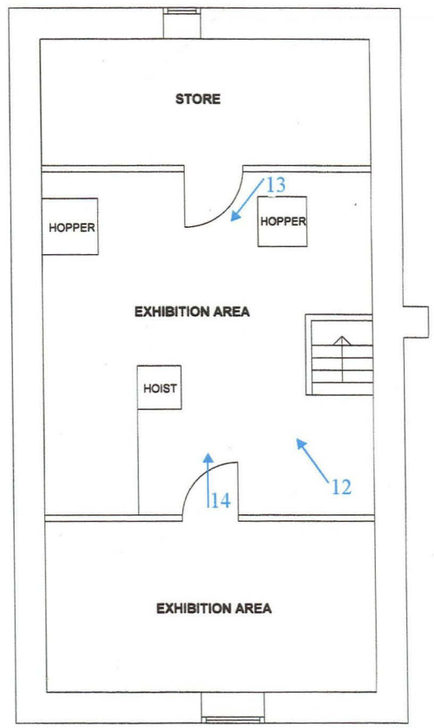


Fig. 4: Plan showing the position and direction of the photographs taken on the first and second floors of the mill. Scale 1:100