

one ten archaeology

Lewiston Mill

Toadsmoor Road, Brimscombe, Stroud, Gloucestershire

Historic buildings recording

NGR: SP 87547 02246

Site code: LMB15

OASIS ID: 110archa1-233379

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December 2015

one ten archaeology

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SUMMARY

Historic building recording was carried out in November 2015 at Lewiston Mill in advance of redevelopment for residential use.

Unlike many of the mills in the vicinity of Briscombe Port, Lewiston has survived as a place of industrial activities into the 21st century, and as a result of the numerous re-orderings and modernisations it is possible to trace the evolution of industrial architecture in modern times and understand through it aspects of the society that created it.

Many old stone mills survive upstream and provide a good impression of the appearance of the lost mill at Lewiston, shown on the 1842 Tythe map, remains of which were recorded during the survey.

The stone mill probably continued in use after the development of the land to the east in 1856 with the construction of a new brick-built, steam-powered textile-mill (woollen) comprising two tall ranges.

This was followed by a significant expansion in 1864; a four-storey extension with connecting stair-tower/water-tower, a large single-storey office near the front gate, a large open shed (covered-yard), and a power-house on the site of the stone mill. The more utilitarian nature of the 1856 segmental-headed openings contrast with the more sophisticated polychrome round-heads within panels on all the 1864 buildings and the ornamented iron-framed shed roof.

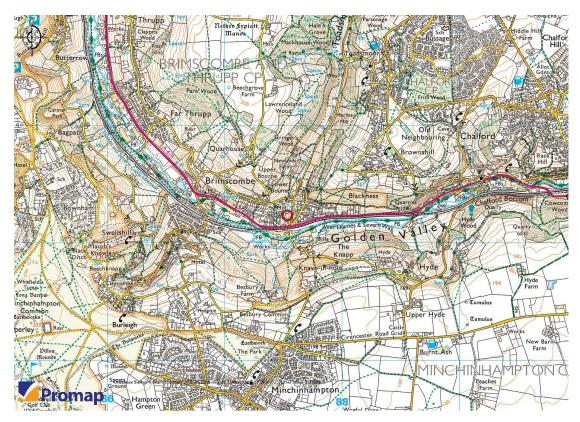


Fig. 1; site location

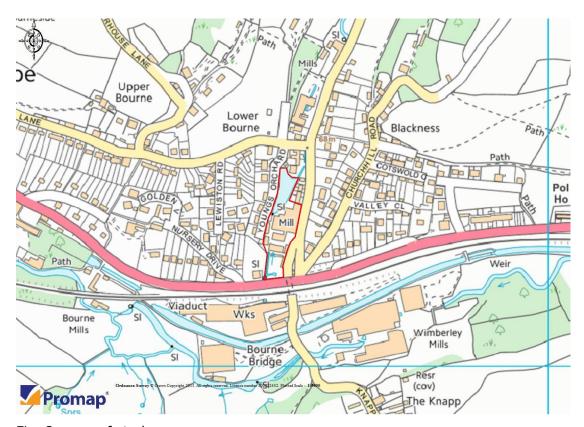


Fig. 2; area of study

INTRODUCTION (Figs 1 & 2)

Location and scope of project

This document sets out the results of historic building recording at Lewiston Mill, Toadsmoor Lane, Brimscombe, Gloucestershire, at the request of Colburn Homes Ltd. Planning permission has been granted by Stroud District Council (planning ref: S.15/1385/FUL) for part demolition and part conversion of the existing buildings to create a mixed development of commercial and residential development including 20 apartments and 10 town houses (alternative scheme to permission S.11/0051/FUL). The permission was conditional on a programme of approved archaeological work in accordance with a brief (Parry, 2015) issued by the Archaeology Service, Gloucestershire County Council. The brief required the implementation of a programme of historic building recording prior to the conversion of the existing buildings as outlined in this document.

The application was supported by a Heritage Impact Assessment which briefly examined the history and development of Lewiston Mill. It was clear from this document that the site incorporates a number of buildings dating from 1856 onwards, and that Lewiston Mill represents a complex of some significance for our understanding of the industrial development of the locality.

It was noted that the proposed development involves removal of some of the later buildings forming the mill complex, as well as alterations to the historic fabric and fittings of the 19th century mill buildings. In view of the significance of these structures it was recommended that provision should be made for recording of the historic structural remains which will be adversely affected by this scheme.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Lewiston mill is situated beside the lower end of Toadsmoor Brook was the newest in a string of mills along the Valley, mostly for corn but also those linked to the textile industry. The topographical constraints of the landscape has heavily influenced the location and design of the mill sites and their topography

Lewiston mill (Historic Environment Record reference number 13997) and the mill pond (HER 15333) is situated in the parish of Brimscombe & Thrupp. An assessment of the mill including a brief history was outlined in the design access and planning statement (Frecknall and Scott, 2010).

Lewiston Mill (brick-built) was constructed by Grist and Co in 1856 and extended

in 1864. The brothers Lawrence and Richard Lewis Grist continued the business of the firm after the death of Richard Grist (circa 1892), until 1939 or later. From 1969 a subsidary of Bensons International carrying out a plastic-coating process occupied.

BUILDING DESCRIPTIONS (Figs. 3-7)

Introduction

Lewiston Mill is the penultimate, at the bottom end of the valley, of a number of mills most of which are stone built for corn. The water of the brook has been intensively managed and each mill has its own pond.

The buildings are located between Toadsmoor Road and the brook to the west which joins the Thames Severn Canal a little way to the south, Brimscombe Port is less than half a mile to the west.

The buildings in the southern part of the complex constitute the visible remains of the 19th century brick buildings, in various forms (and functions), and the tallest, a four storey water-tower, and the three-storey block attached to it are still prominent features in the landscape.

The northern part of the site is mostly two-storeyed with mid-20th century flat roofs with long pitched skylights. The two largest flat-roofs, north and south, extending back from the road are part of a mid-20th century reordering of the existing 19th century buildings which consisted of a wide southern range and a narrow north range with a yard between. These were reduced to the first floor and massive steel-beams and concrete floor provided large level areas to construct the new efficient work-shops, and the south wall was rebuilt in concrete and glass creating a contemporary elevation to the front yard. The north wall however was retained for two storeys with its row of blocked first-floor windows which can be seen from the north yard (tarmac). In the late 20th century this yard was covered with a vast concrete-framed shed with lean-tos. The shed incorporates a pre-existing, now ruinous, brick building with an inspection-pit for vehicle maintenance.

BUILDING 1

Located along the road-side in the south-east corner of the site, this building is next to a pedestrian gate and the main gate into the front yard. This spacious single storey four bay structure has round-headed windows, within panels, have iron frames. It is divided by a central cross-wall with a chimney providing fire-places in each part. The door in the north wall gives access to a vestibule, in the corner of the north part, which in addition

to the door to the rest of the building is provided with a hatch to the L shaped outeroffice. A passage leads to the inner-office and service room.

BUILDING 2

Along the south side of the site to the west of the office is a large seven bay shed with tripartite ends it was originally open on the north with large square piers, and on the west with round-headed arches in panels. A mezzanine floor was inserted in the western bay when the openings were partly blocked and glazed in the upper parts. The north side was also partly blocked, glazed in the upper parts but also provided with three large doors on rollers, hung on heavy rails.

The design of the ornamented iron roof-trusses is a complete departure from earlier (and contemporary) timber-framed models. Not only does the ornament seem anathema to this utilitarian building but the profile, four-centred or 'Tudor' style and reminiscent of Paddington Station, is not compatible with the existing roof with its continuous louvre. It may be reused.

BUILDING 3

The three-storey block stand in the middle of the southern part of the site, it is six bays long and all the elevations are treated with regular ranks of round-headed windows with iron frames, the building was originally four storeys with attics and the pilasters probably met cornices to form panels as on the office building. The tripartite end walls clearly indicate a three-aisle system of floor-framing, but this has been replaced with the existing two-aisle concrete framing and floors. Infilled slots in the floors and a segmental cut into the original fabric indicate the position of the contemporary engine and its belts to the upper floors.

BUILDING 4

Near the north-east corner of the large shed is two-bay one and a half storey building with a rear out-shot. Its south-east corner, only several feet away from the shed designed as 'cut off' to allow easier access. The end of the south out-shot has a large blocked round-headed arch-way with masonry imposts, the north end appears later with its straight-joint and timber lintel for a wide opening subsequently infilled. The upper floor was originally accessed by an external stair at the north end. When an engine was installed at the south end; the floor over was raised, a dog-legged concrete-block crosswall inserted and a new internal stair built.

BUILDING 5

This four-bay open shed constructed in the early part of the 20th century incorporates at the back a stone wall at the north end, probably part of the stone mill shown on the 1842 Tythe map, and the southern part and end wall of brick. This end wall is shown isolated on the 1st and 2nd Editions OS but may be the remains of the detached building shown on the Tythe map. The shallow pitched roof has King-post trusses supported at the front by iron columns with capitals, and are attached by straps and bolts through the top-plate. This arrangement seems clumsy and the posts may have come from the multi-storeyed building (3) when the concrete floors were inserted. At this time a simple shelter for motorised vehicles may have been needed.

BUILDING 6

This square building at the north-west corner of the site has the sluice from the mill-pond only feet away from its north-east corner and is clearly built upon the north end of the lost stone mill. It is ruinous and overgrown and survives to the second-floor masonry window-cills, the windows, three each side, are round-headed and several iron frames survive. The ground floor has a round-headed doorway in the middle of the east wall and it retains its original iron frame, with pintles, like those in the multi-storeyed building. The first-floor is accessed via a flight of stone steps on the south side, the doorway at the top appears to have a 'Tudor' (four-centred) head and the iron frame and both iron door-leaves are rusted solid in-situ. Rows of (10) vertical sockets for stout joists are visible in the north and south walls.

BUILDING 7

Originally separated from the arcaded building (9) by a yard this parallel range is as wide as the three-storeyed building (3) and indicates a similar flooring design of three aisles, like the north range it has ten bays but they are narrower (90%) the north windows are like those in those in the opposite building but larger and two remain framed and glazed, the others blocked. On the south side a window survives preserved as a result of the later gateway and stair-block (water-tower) constructed at this point, significantly this also applies to the storeys above with the segmental headed openings, converted to doors when the stair was built, and confirming the height of the early brick mill.

The western two bays are divided off but in the cross-wall a wide blocked opening at the north end formerly allowed access here, to the south of this doorway masonry features appear to be associated with machinery. On the south side of these end bays are the blocked remains of windows with cills at different heights and both have lost their heads and fabric above. A north projection shown on early maps and the existing transverse flat roof suggests a continuity of form and a lower original (transverse) roof. The west wall is visible from within the transverse shed (8) to the west which utilises this pre-existing wall; constructed of coursed limestone blocks, and what looks le a broad 'pilaster' at the north end. There are no openings on the north side, the room is sealed.

BUILDING 8

This large shed is located across the west end of Building 7, projecting beyond the north and south walls, and was originally six bays long. The northernmost shallow-pitched truss was removed and replaced, with a new one, further north when the north wall was removed and the building was joined with structures to the north.

The west wall incorporates the blocked remains of an original segmental-headed doorway at the south end together with later inserted features themselves subsequently blocked.

The south wall retains three segmental-headed windows, with iron-frames, in the upper part but the wall below has been opened up for a very large door hung by rollers on a stout rail, to the east of this is an original reveal with quarter-round bricks suggesting an open south end.

The east wall is built of coursed limestone blocks and common to the sealed room at the west end of Building 7, the broad 'pilaster' at the north end may be associated with a chimney.

BUILDING 9

This building extend for ten bays from the road and defines the north limit of the 19th century mill, the back wall is cut into the sloping ground and the natural valley profile is illustrated by the stone footings stepping down from east to west. The first floor windows have segmental-heads and masonry cills. All that survives of the front wall is an open segmental-headed arcade, stumps of formerly inserted steel-beams above the piers at the east end are consistant with the glazing over of the yard here by 1922 (OS 1:2500). The western bay is walled off and is mostly occupied by a large ?boiler accessible via a narrow passage (behind the blocked arcade-arch) and a small inspection/maintenance

hatch. The only first floor to survive on the south side like those on the north is in this end bay, blocked.

BUILDING 10

This building continues westward from the arcaded building (9) to the sluice and there is a small blocked segmental-headed window in the end wall and a blocked (inserted) circular opening next to it. The storeys are shorter than those to the east and there are steps down from the first floor of the larger building. This part of the mill has undergone much re-ordering in the early 20th century when new steel roof-frames joined this part of the mill with the transverse-shed (8) to the south after its north wall and northernmost roof-truss were removed. The area is now a number of small offices. associated with the garage business in the shed, and the windows in the north wall are wide with lintels.

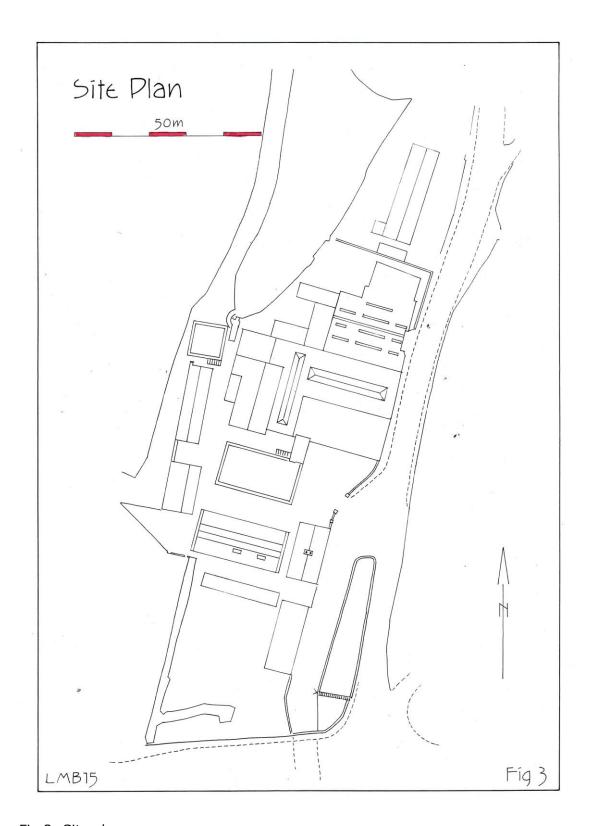


Fig 3; Site plan



Fig. 4; ground floor plan, yellow is for masonry, red is 1856 fabric and green 1864 fabric

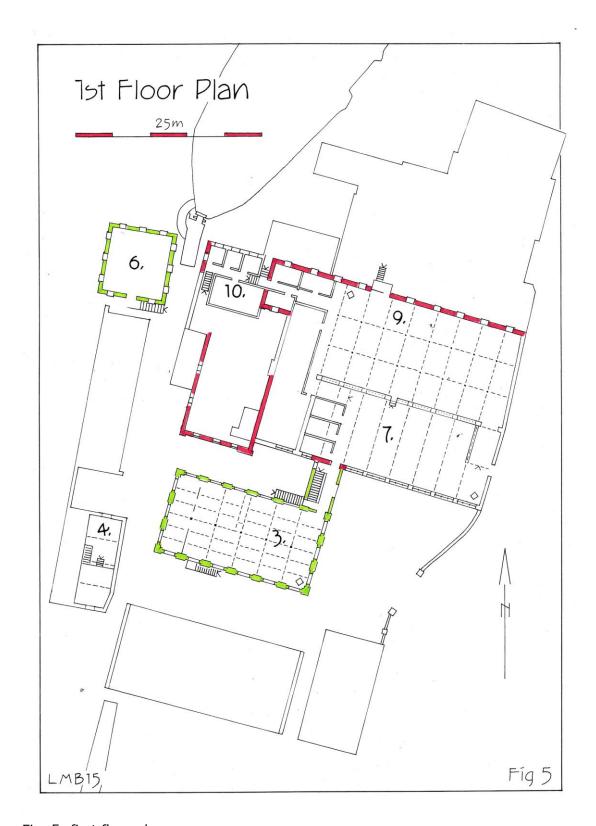


Fig. 5; first floor plan

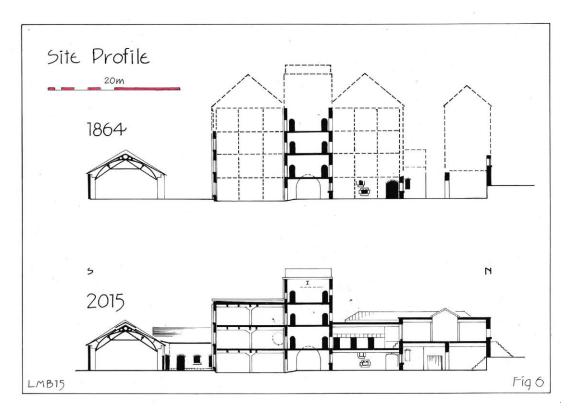


Fig. 6; Site profile

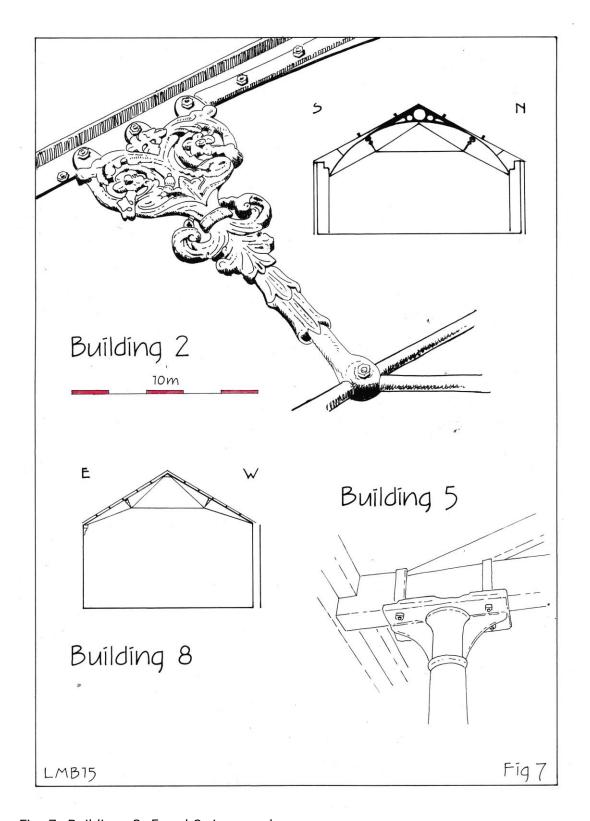


Fig. 7; Buildings 2, 5 and 8; iron-work

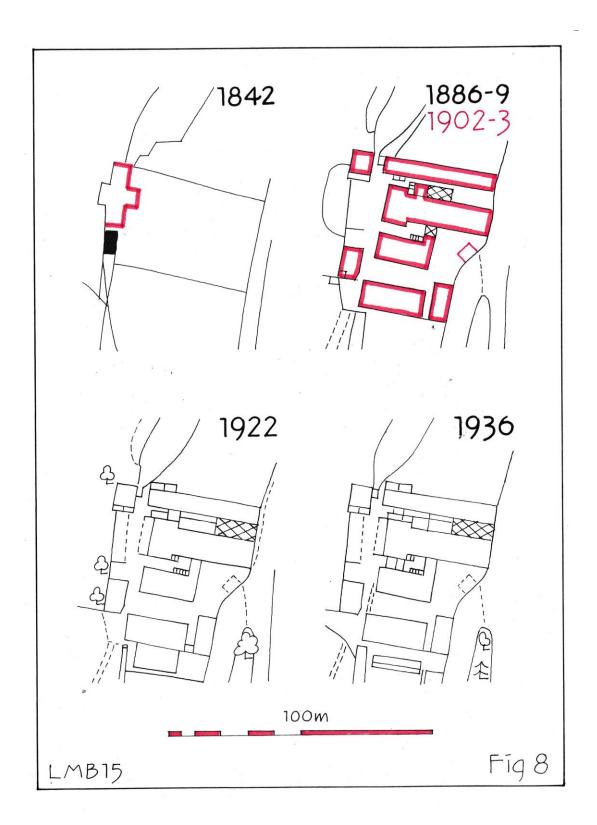


Fig 8; Topographical development

DISCUSSION (8 & 9)

PHASE 1; the earlier 'lost' stone mill

The Tithe map of 1842 shows that an earlier stone mill existed within the study site before the construction of the brick steam-powered mill in 1856. This earlier mill is depicted as a smaller cruciform building (outlined in red) situated off the southern end of the pond (north-east of the existing mill and buildings). A stone wall (with straight joint) which represents the sole remains of this building, currently forms the rear wall of an open shed. A wall at the southern end of this shed is in brick and its position corresponds with a small structure (shaded black) attached to the south side of the mill on the 1842 map. The working sluice gate remains in situ at the north end of the site and the mill leat which today runs under parts of the site as a culvert located beneath the existing yard was probably originally covered by the earlier mill building which also housed the wheel.

PHASE 2; Lewiston Mill in 1856

During the 1850s the demand for British textiles was strong and this was radically improved with the introduction of steam power which allowed goods to be produced so efficiently and cheaply that they could often undersell comparable, locally manufactured goods in almost any other market. The new form of power also meant that mills, such as Lewiston, could now be sited away from the ponds that formally acted as a constraint and the size of engines meant that these factories could be built on an industrial scale. It is clear that most clothiers initially used steam to supplement waterpower rather than to supplant it. This may have also been the case at Lewiston, the watermill was still operating in 1842 and probably 14 years later when the steam powered mill was built. The new mill also represented a movement or extension of the mill complex towards the road suggesting that the earlier building was still functioning in 1856. By 1886-9 (OS First Edition) the old mill had been completely replaced.

Lewiston Mill began in 1856 as a new factory complex comprising two brick built ranges. One of these was four-storeys as evidenced by doorways on all levels in the stair tower. The north range has two surviving storeys although it is probable that this was also built to the same height as the main mill range to the south. Although the functions of these buildings is unclear, the probable location of the engine at the west end of the southern range suggests this is the main area of production whilst arcading along the front of the northern range indicates storage at ground level with further production

above. Large yard areas lay to the north and south of these buildings, the lower one was eventually mostly taken over by the mill extension in 1864. A former chimney, possible evidence for which in the east wall of the existing garage would have been sited in a small building next to the engine connecting the two ranges and providing the power.

The machinery generally used for driving mills and factories was a stationary steam engine (rotative) that transmitted power to line shafts on each floor of the mill. Surplus power capacity encouraged the construction of more sophisticated power looms working in weaving sheds. The engine was usually attached to the inside of the building where there is masonry, a stone wall at the west end of the 1856 mill and masonry features in the cross-wall, to the east, suggests that the sealed room between housed the engine.

Lewiston was one of the later mills built during the height of steam power and it seems likely that it employed the Corliss steam engine. If it was not being used in 1856, then this must surely have been the engine of choice during construction of the second mill in 1864. The Corliss engine was patented in 1849 offering the best thermal efficiency of any type of stationary steam engine until the refinement of the uniflow steam engine and steam turbine in the 20th century.

The decision to build a new industrial size mill at Lewiston during this period was no doubt also prompted in part by the construction of the railway between the existing canal and the southern end of the site. This will have enabled the mill to utilise the new integrated, well-engineered railway system that provided fast and inexpensive movement of textiles to its domestic and foreign markets.

Lewiston was a woolen mill, built to manufacture shoddy, flock and mill puff. Shoddy is a process of recycling inferior woollen yarn made by shredding scraps of woollen rags into fibres, grinding them and then mixing them with small amounts of new wool. The object was to manufacture a cheap cloth which could be made into products and clothes. A by-product of the shoddy process was Flock and when this was subjected to an even finer shredding process it produced a short variety of flock called mill puff which was used for stuffing pillows and bolsters and mattresses. Common uses of the cloth made from shoddy was for army uniforms and blankets. Lewiston by specialised in these products was benefited from the growing demand for this type of fabric, the periods of expansion and modernisation appear to coincide with mid-19th century armed conflict; Crimean and American Civil Wars, and in the early 20th century with the Great War.



Fig 9;

Restored view 1864

PHASE 3; mill extension in 1864

The success of Lewiston Mill was reflected in 1864 with further investment by the owners and the addition of a second four-storey mill range in the yard to the south. Also included was a large open shed to the south (covered-yard), office to the south-east and a new building (power-house) on the site of the north end of the lost mill, this survives to three storeys. All of these buildings were characterised by rounded-headed windows and doorways in contrast to the segmented-heads of the 1856 buildings. Both mill ranges (1856 & 1864) were served by the addition of a fire-proof stair tower. This was tested in 1866 when a large fire broke out in part of the mill that lead to considerable damage.

PHASE 4; Post fire re-build in 1866

In an age of steam, fires were not uncommon in mills throughout the country and were a constant danger due to the highly flammable materials which were stored in them. In August 1866 (height of the summer) the mill complex suffered a major fire causing extensive damage. Evidence of this is still visible as charred timbers of the original flooring in the upper part of the stair tower. Given that the majority of the damage was to the 1856 mill range where only two of the original floors survive, it seems likely that the fire started here and spread to the 1864 buildings where only the upper floor was damaged.

PHASE 5; Addition of outbuildings

In 1871 the mill complex was further extended by the addition of outbuildings, this probably included the stable and an angled wall at the south end indicates that this post-dates the large shed.

PHASE 6; Concrete floors

The 1864 mill range underwent considerable re-ordering during the early 20th century with the insertion of reinforced concrete pillars and beams which enabled wider spans and reduced the number of aisles on each floor from three to two. This increased factory floor space improving productivity (The first multi-storey reinforced concrete building, Weaver's Mill, was erected in Swansea in 1898). New machinery replaced older engines as evidenced by belt slots constructed in all the floors. The iron columns currently in the

open shed to the west were probably reused from the mill range when the new concrete floors were inserted.

PHASE 7;

In the 1950s steel beams, concrete floors and flat roofs were constructed, in only two spans, over the ground-floor remains of the 1856 mill.

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OS 1922-3

OS 1936

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Tithe map 1842. GDRT1/28, Map 2, Stroud, Glos. Record Office.



Plate 1; Building 1 from east.



Plate 2; Building 1 from north-west



Plate 2; Building 1 interior from north



Plate 3; Building 2 from north-east



Plate 4; Building 2 interior from east



Plate 5; Building 2 interior from south-east



Plate 6; Building 2 roof detail



Plate 7; View of mill buildings from south-east



Fig. 8; Building 3 from south-west



Plate 9; Building 3 from north-west



Plate 10; Building 3 first-floor interior showing inserted concrete floor and cut-back fabric to accommodate belt-wheel.



Plate 11; Building 3 stair-tower from west



Plate 12; Top of building 3 and stair-tower from north-east



Plate 13; Top of stair-tower (building 3) from south



Plate 14; Stair-tower fourth-storey interior showing partly blocked doorway to building 7



Plate 15; Stair-tower; remains of hoist mechanism and fire-damaged floor

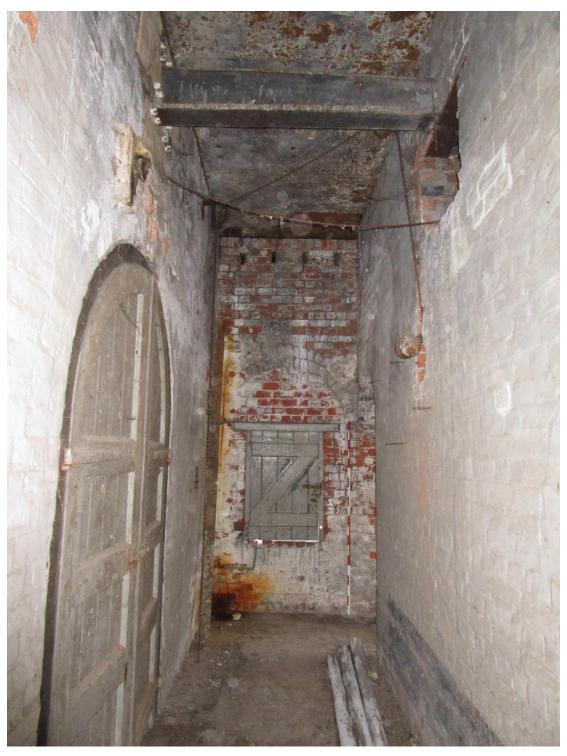


Plate 16; Stair-tower; fourth storey interior from north



Plate 17; Stair-tower; underside of fire-damage floor



Plate 18; Stair-tower; third storey stair from south



Plate 19; Stair-tower $\mathbf{1}^{\text{st}}$ floor passage from south showing original building 3 iron door-frame



Plate 20; Building 3 iron door-leaves



Plate 21; Building 4 (?stable) from north-east



Plate 22; Building 4 (?stable)from east showing modified door and window



Plate 23; Building 4 (?stable) from south showing blocked arch (?cart-shed)



Plate 24; Building 4 ?former hayloft from raised south end



Plate 25; Building 5 re-used column detail from north



Plate 26; Building 6 from north-east

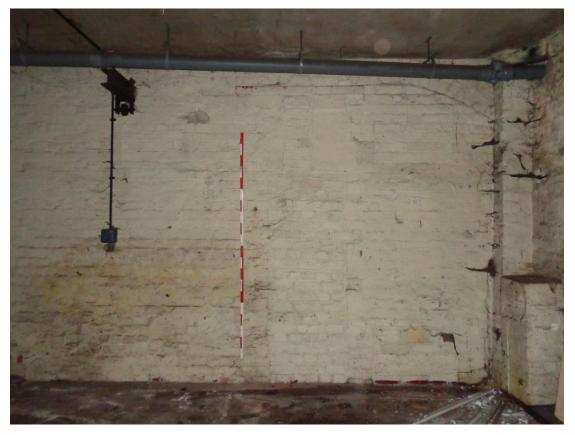


Plate 27; Building 7 cross-wall from east showing blocked doorway



Plate 28; Building 7 cross-wall from east showing blocked masonry features



Plate 29; Building 7 north wall interior adjacent to cross-wall

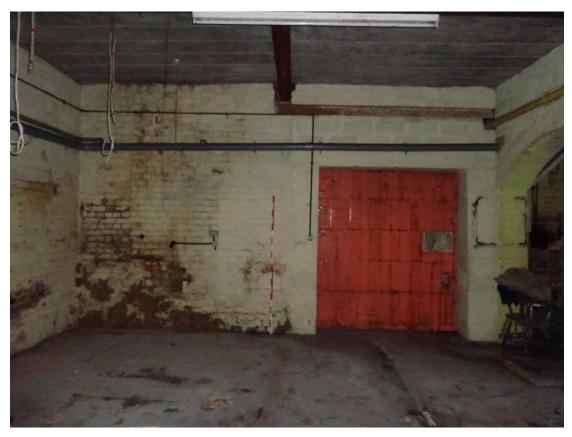


Plate 30; West end of former yard showing blocked opening (?for machine-belt) at north end of building 8



Plate 31; Building 7 west end from south showing blocked door, left, and window



Plate 32; First floor interior of buildings 7 and 9 from south-east



Plate 33; Building 8, and 7, from south-east



Plate 34; Building 8, and 10 beyond, from south-west showing blocked and inserted features, and remains of lost lean-to



Plate 35; Building 8 from west, the round holes are inserted



Plate 36; Building 8 interior from north-west showing west (masonry) end of building 7



Plate 37; Building 9 arcade from south with remains of inserted glazed yard-roof



Plate 38; Building 9 interior and building 7 beyond from north-west

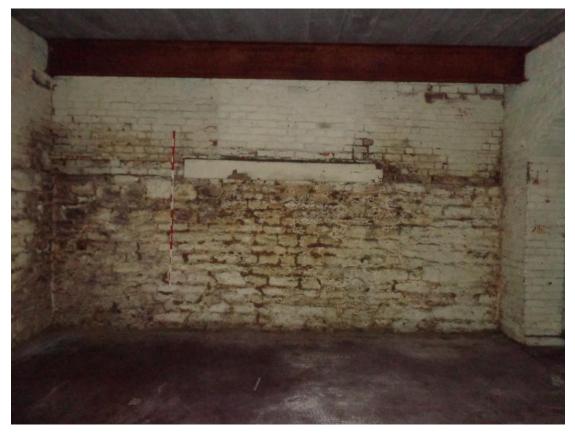


Plate 39; Building 9 interior showing masonry footings and blocked east door



Plate 40; Building 9 interior east end of north wall



Plate 41; Building 9 1^{st} floor interior from south-east



Plate 42; Building 9 interior north wall detail



Plate 43; Building 9 from north showing blocked 1^{st} floor windows



Plate 44; Building 9 north wall detail from covered-yard



Plate 45; Building 9 west end from south-east showing window above arcade



Plate 46; Buildings 7 and 9 from north-east, road-frontage



Plate 47; Building 10 from south-west showing blocked window

APPENDIX 1; METHODOLOGY

Aims and objectives

The objective of the historic building recording was to obtain a detailed analysis and description of the history, character, and date, techniques of construction, phasing and significance of the structures. Primary and secondary sources relating to the buildings were consulted and relevant information included in this report.

Documentary search, fieldwork & recording

The Gloucestershire Historic Environment Record (HER) was consulted with a search carried out over a 500m radius centred on the site. Significant aspects of the data within the HER that is relevant to the site, including an analysis of historical mapping was used in this report. The information provided by the HER was complimented by a visit to the Gloucester Record Office, to explore the archived documentary evidence.

The site survey comprised systematic external and internal perambulation of the buildings, observing, discussing and noting features including structural, functional and chronological aspects, which was accompanied by the creation of a photographic record. Measured drawings provided by the agent were checked during the survey and annotated accordingly.

APPENDIX 2; OASIS

Lewiston Mill, Toadsmoor Road, Brimscombe; historic building Project name

recording

the project

Short description of Historic building recording was carried out at Lewiston Mill in connection with residential development of the site. An earlier stone water mill existed on the site before the new steam powered woolen mill factory was built in 1856 and extended in 1864. A fire destroyed parts of the mill in 1866. Modifications were carried out

to the mill until a change of use in the 1950s.

Project dates Start: 10-11-2015 End: 11-11-2015

Previous/future

work

No / No

Any associated project reference

codes

LMB15 - Sitecode

Any associated project reference

codes

110archa1-233379 - OASIS form ID

Type of project **Building Recording**

Site status None

Current Land use Industry and Commerce 1 - Industrial

Monument type SN Post Medieval

Significant Finds **NONE None**

Methods & techniques "Survey/Recording Of Fabric/Structure"

Planning condition Prompt

Country England

GLOUCESTERSHIRE STROUD MINCHINHAMPTON Lewiston Mill Site location

Postcode GL5 2TB

Study area 0 Square metres

SP 87547 02246 51.711645222308 -0.732723764921 51 42 41 N Site coordinates

000 43 57 W Point

Name of Organisation one ten archaeology

Project brief originator

Local Authority Archaeologist and/or Planning Authority/advisory

body

Project design originator

one ten archaeology

Project

sean cook

director/manager

Project supervisor

jill atherton

Type of

sponsor/funding

body

Developer

Physical Archive

Exists?

No

Digital Archive

Exists?

No

Paper Archive

Exists?

No

Publication type Grey literature (unpublished document/manuscript)

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