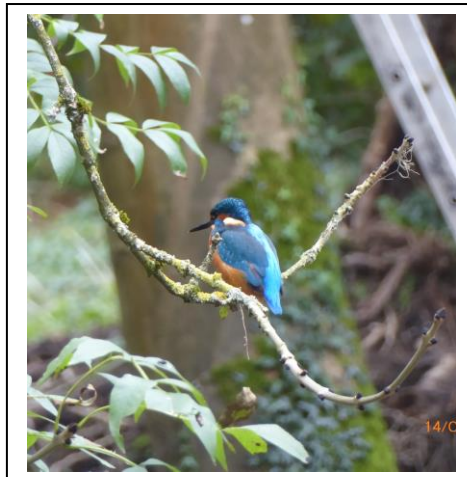


**REPORT OF AN
ARCHAEOLOGICAL INVESTIGATION
AT THE SITE OF OVERTON SILK
MILL, HAMPSHIRE**

OCTOBER AND NOVEMBER 2017

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July 2018



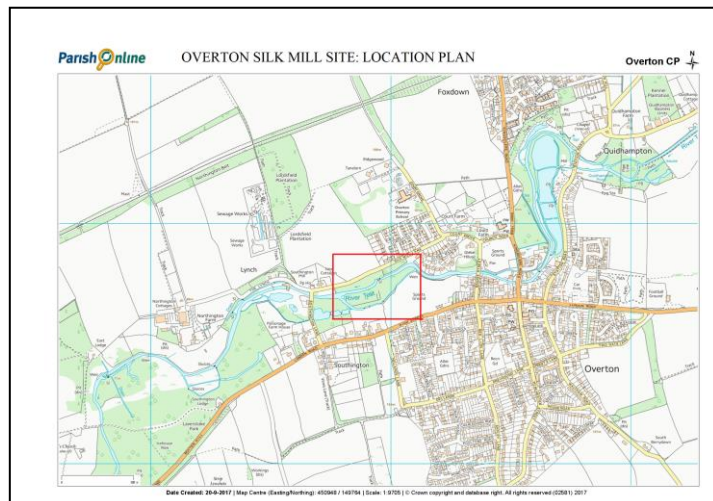
The kingfisher supervised our activities throughout the dig.

INTRODUCTION

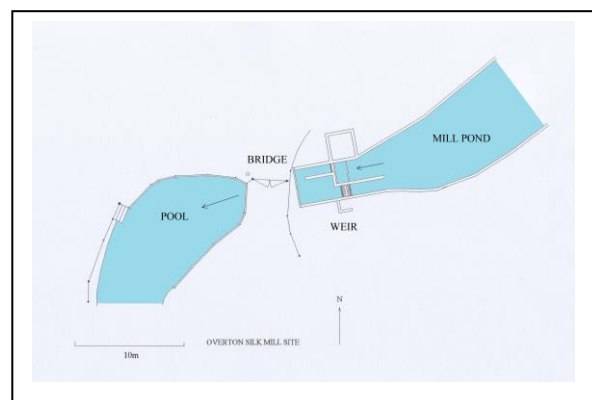
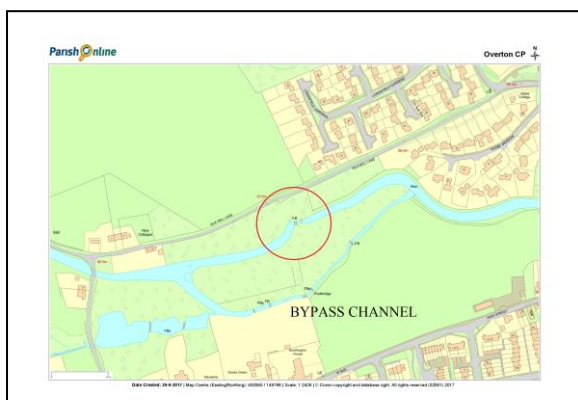
In August 2017, it was announced that the Environment Agency, with Natural England, would be continuing their work to improve the ecological status of the River Test SSSI, starting in October. This phase would be between Silk Mill Weir and Bridge Street river crossing at Southington. The work would include removal of a weir and turbine at the site of the former Silk Mill. It would be necessary to divert the river by putting in a coffer dam upstream and use of a pump to deliver the water back into the river below the weir.

This was a unique opportunity to conduct an archaeological investigation of this historic site.

Site location and plan.



The site lies about 600m west of the traffic lights at Overton village centre and about 3km west of the source of the river. Site co-ordinates: SU 509 497



A river in its natural state follows the lowest point in the valley. When building a mill, the river must be diverted from its natural course to create a fall of water for the mill wheel to work. The natural course would have been close to where the bypass channel is now. The river bed and its banks at the site are man-made.



The mill pond above the weir, 2016

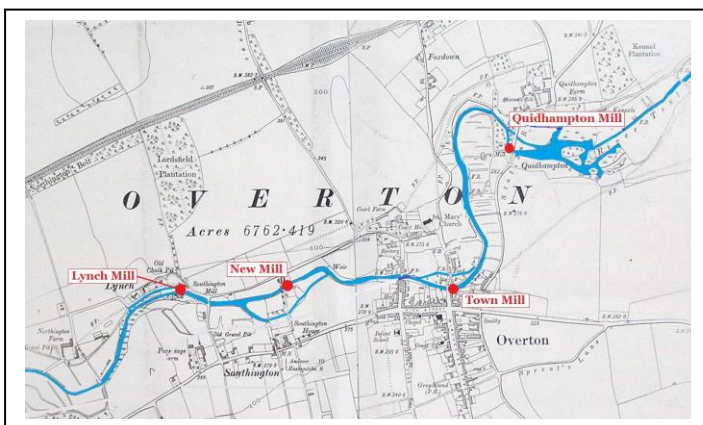


The pool below the bridge, 2016



Structures at the weir scheduled for demolition

HISTORY OF THE SITE



The Domesday Survey of 1086 recorded four mills in the Manor of Overton but not where they were located.¹ It is assumed that Town Mill and Lynch Mill (Southington Mill) represent two of these sites. Quidhampton Mill is assumed to be one of two mills in the Manor of Quidhampton.

Town Mill and Lynch Mill were working in 1301.² There was another corn mill in Overton Manor called

Othin's Mill. Since Town Mill was close to the western border of the Manor and Lynch Mill was close to the western border, Othin's Mill must have been between the two. In 1408-9, Town Mill and Lynch Mill are mentioned. There was another mill 'in ruins' at this time but the site was not named in the record.³ In 1446 the mills of 'the Vill' and 'La Lynch' were being let. There was also an empty

plot called New Mill, but the mill itself had not yet been built. This had been done at the beginning of the 16th century, the fulling mill called New Mill with a fishery being let at 8s. a year.³



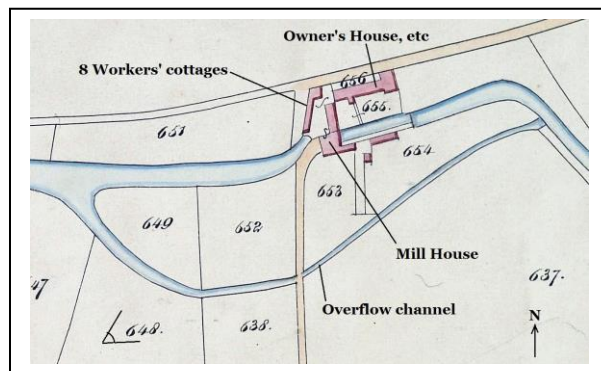
New Mill is shown on Thomas Langdon's Plan of the Borough of Overton in 1615 (detail, above).⁴ We can conclude that there was certainly a mill at this site in 1615 and very probably from 1301 or even earlier. In 1769, the fulling mill was demolished and Overton Silk Mill was built in its place.⁵



Overton Silk Mill, Hampshire Archives, TOP245/2/4

This plan of the site is from Overton Tithe Map of 1843.⁶ The main mill building straddled the river. The bypass channel is shown in the illustration above but the main river cannot be seen. The viewpoint appears to be from the south-west in the field marked 648 in the plan.

There are sale particulars of the mill of 1834 which specify the dimensions of the mill building on five floors as 31.4m. high, 48.8m long and 10m broad in which were five rooms



Detail from Overton Tithe map, with annotations

38.1m x 7.3 and five smaller rooms 6.7m x 5.5m.⁷ Unfortunately, it is not possible to reconcile these dimensions with those shown on the tithe map.

The Silk Mill went out of business and was completely demolished in 1848. The dates of the brickwork, footbridge and railings are not known. They may have been constructed in 1769, after the mill was demolished in 1848 or when a turbine was installed in about 1910.

The eight Silk Mill Cottages remained in occupation till they were demolished in the 1960s.

THE PROJECT

Organisation

This was a Community Volunteer Project, managed by Overton Parish Council. The Council was responsible for all the legal, health and safety and insurance aspects. Permissions were obtained from the landowner and the contractor.

It was in the nature of the work to be done that the contractor could not offer a fixed timetable and at the outset it was not known how long or when the window of opportunity would be. Until the river bed was drained, it was not possible to assess what the terrain would be like for excavation. The use of heavy machinery meant that there would be times when the volunteers could not work in the river bed. This was an opportunistic project that could not be planned in detail in advance.

A search of the literature did not reveal any archaeological investigation of a river bed when the river had been dammed, except for a project in China in 2005 which was on an industrial scale. There were therefore no published examples to learn from.

Management of the project

A full risk assessment was carried out. A named site manager and a first-aider were on site for every working session, all work being at the discretion of the contractor. All volunteers were registered, briefed and trained in all safety aspects beforehand. Work was organised on a half-day basis with handover and a work plan from one day to the next.

A call for volunteers produced a list of 33, of whom 11 had archaeological qualifications or experience of working on archaeological digs.

The aims of the project

1. To increase knowledge about human activity at this site from the earliest times to the present day by studying man-made and natural objects found in the river bed.
2. To assess the likely building date of the brickwork around the mill pond, the footbridge and railings.
3. To record the weir and associated machinery before and during removal, by photography and measured drawings.

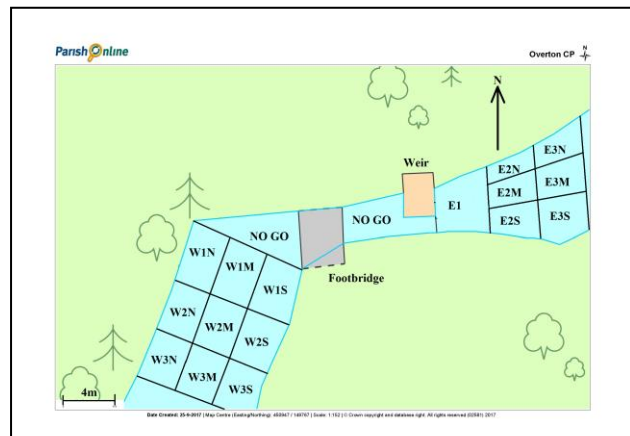
The project plan

River bed

- Survey the site and draw a plan.
- Surface dig of marked areas in the river bed.
- To dig trenches in chosen areas.

The footbridge, weir and associated machinery

This area was hazardous. The aim was to photograph the process of removal and to make measured drawings when safety considerations allowed.



Proposed grid, before the river was drained

PROGRESS OF THE DIG

A 'base camp' was set up in a tent south of the river to house equipment and deal with finds. Volunteers worked in groups of 4-6 over 31 days. Surveying started on 1st October and a general sweep for surface finds made on the land to the north of the river. On 15th October, the dam was in place and the pumps were working. This allowed an assessment of the river bed. Above the weir, it was found that a thin layer of sand and silt overlay a 30-60cm layer of soft mud making digging impossible. In the pool below the weir, the context was compacted silt, small stones and flints. Digging to a depth of more than 15cm was very difficult.

The pump outflow, just to the south of area W3N on the plan, was producing backwash. This was alleviated by the contractor laying sandbags but water continually seeped into the digging area. Immediately below the bridge, the force of the water had scoured out a pool about 1.5m deep. Water seeped into this pool from the mill pond and a secondary pump was used, when available, to keep the water level down.

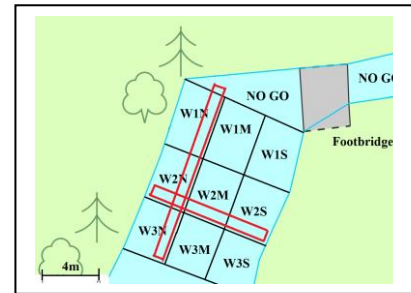
During the following week, a surface dig of areas W1N, W1M, W1S, W2N, W2M and W2S was completed. When the secondary pump was not available, volunteers sought and found some stretches of the foundations of Silk Mill Cottages.

Surface dig below the weir



Digging trenches by hand was not a practical proposition but the contractor kindly dug two trenches to a depth of about 60cm using a mechanical digger, as shown on the plan (right).

All finds were recovered apart from fragments of roof tiles and brick bats which littered the site. The finds were all bagged and numbered according to the area in which they were found.



Meanwhile, from 5th October, the contractors were removing a water wheel and a turbine at the weir using heavy machinery. This process was recorded photographically and by measured drawings whenever this could be done safely. Further work was done on the foundations of the cottages.

The contractors then started to remove an estimated 3,000 tons of mud from the mill pond, depositing it on the north bank. Amongst the debris were the stumps of several of substantial wooden stakes, two of which were recovered. Although a few other finds were made, it was not a practical proposition to search the mud pile methodically.

Eventually it was possible to enter the area above the weir and three morticed beams were found in the river bed. It was decided to get the stakes and beams dated by dendrochronology.

On 12th November, the pumps were stopped and the river resumed its normal course. The contractor then began clearing and grading the land north of the river. Two sets of footings 4.2m apart were discovered on the north bank just above the weir area at right angles to the bank. Their construction and depth were investigated as they might be the walls of the Silk Mill.

THE FINDS

All finds were recorded with the area they came from but no significant pattern emerged, except that nearly half the finds from the surface dig came from near the north bank. A full catalogue of all finds is in Appendix 1.

China and pottery



Some 47kg of shards were recovered, mainly modern china glazed on both sides. Items of interest were five stoneware inkwells, one of them intact, probably early 19th century. They could have been used by clerks at the Silk Mill.



Shards of green feather edge china, late 18th C (right).

No other china or pottery more than 200 years old was found.

Glass



About 200 intact bottles were recovered, nearly all of them machine made, post 1900. The exceptions were three apothecaries' vials. The one shown on the right has a seam and was therefore made in a mould after about 1850. The other two have no seam and were hand blown, probably late in the 18th century.

About 27 kilos of glass shards were recovered, amongst them 17 heavy bottle bases, some of which were irregular, suggesting they were hand blown and not made in a mould.



Thirty bottle stoppers were found along with a large collection of glass marbles.

Tobacco pipes



Three intact bowls and 80 fragments of pipe stems were found. The size and pattern of the bowls suggest they are mid-19th century.



One fragment is stamped 'F. Goodall' who was a pipe maker from Fareham.

Metals

There were 47 kg of unidentifiable metal objects.

Among the most interesting items were 18 boot heel irons, mainly from children's boots, some that would fit a child of three. It is known that up to 200 children worked at the Silk Mill from the age of six and that even younger children were housed there, 'until they are capable of work'.⁸



Five pennies and three half pennies were found, the oldest bearing a date being 1905, along with a silver florin (1923). The two coins below had no markings but the diameters indicate that they are a half sovereign and a half farthing, both 19th century.

This award for regular and punctual Sunday school attendance is typically late 19th or early 20th century.



These are examples of numerous 'crown' nails, made by a blacksmith, probably before about 1850. Some have spade ends rather than points. The more substantial ones could have come from the roof of the Silk Mill.



This key was found close to the gates on the bridge which separated the gardens of Southington House from the grounds of the Silk Mill cottages after the mill was demolished.

Numerous hand tools and items of cutlery were found in the river bed.



This is one of several pattens which were attached to the underside of boots in the 18th century to keep the leather out of the mud.

Stone and flint



Two pieces of ridged stone were found close together on the north side of the pool below the weir. They appeared to be parts of a millstone. The larger one is 57cm long and 13.5cm thick. Measurement of the curve indicates that the complete millstone was 117cm in diameter.

Traditionally, millstones were either made in one piece or many pieces bound together with cement with an iron hoop to hold them together, as in this illustration. Experts from the Hampshire Mills Group have inspected the stones and agree that these are French burr from the Paris basin.



A redundant millstone made from segments would remain intact until the iron hoop corroded away. The historical evidence is that Othin's mill was a corn mill, but from the beginning of the 16th century the mill at this site was a fulling mill. ('Fulling' was a process of beating woollen cloth impregnated with clay to remove impurities.) Unless these stones were dumped here from another corn mill, which seems unlikely, these stones may have been cut about 500 years ago.



This piece of worked flint is a Neolithic era scraper found in the river bed. Neolithic artefacts have also been found at Turrill House, about 200m away, at Abra Barrow in Southington and at three other sites in the parish.¹⁰

This is one of three echinoid fossils found in the river bed



Oyster shells



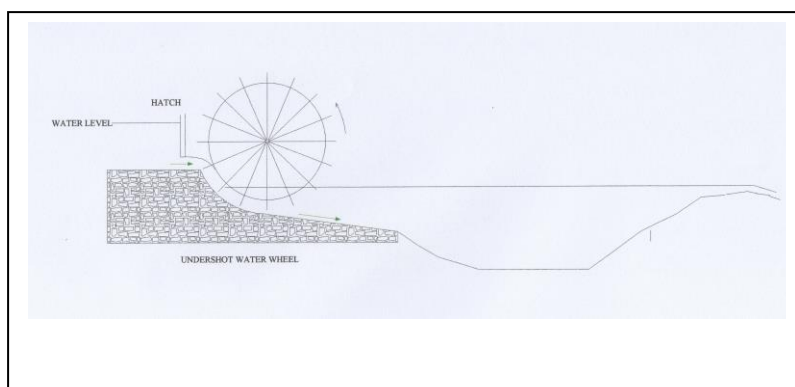
Thirty-two shells were found. Along with cockles and mussels, oysters were part of a poor man's diet from Roman times. In the 18th and 19th centuries they were extensively farmed at Langstone and Portsmouth harbours.⁹ Kept in a bucket of water, they could be transported live by cart and still be fresh when they arrived many days later.

Bones



About 5kg of bones were found, some sawn by a butcher. They include limb bones, ribs, jaws and teeth from cows, sheep, rabbits and pigs. (See Appendix 2)

Since it is known that there was a mill at this site 500 years ago or earlier, it is of interest that, apart from the fragments of a millstone and the Neolithic scraper, nothing man-made more than about 200 years old was found. The answer may be that gradual silting up of the mill pond reduced its water capacity and the reservoir for driving the mill wheel. Clearing the silt, as was done on this occasion, would have been part of regular maintenance. Two local people remember this being done in this stretch of the river.



Likewise, the scouring effect of water pouring off the tail race produced a deep pool and a bank of silt downstream. If this was allowed to accumulate, the level in the pool would rise and would eventually impede the wheel. This is known to have been a problem at Town Mill in about 1790 because of lack of maintenance.⁹

STRUCTURES AT THE WEIR



To the right of the picture is a small iron water wheel. To the right of the hatch is a steel frame supporting two vertical shafts. This is what remained above water level of a turbine and generator installed in about 1910 to supply electricity to Southington House, about 200m away.

The water wheel

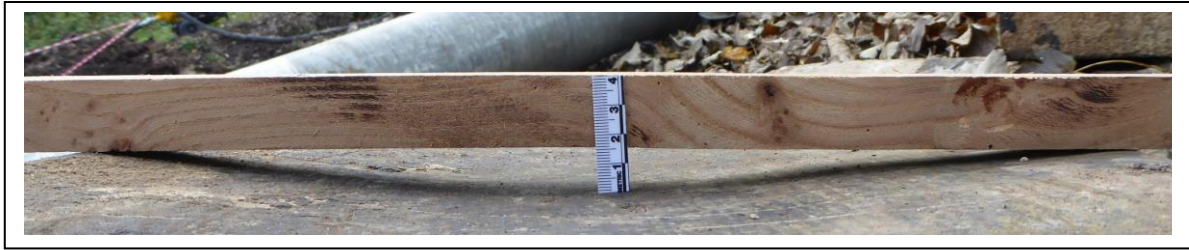


The water wheel was the first structure to be removed, being just over 1m in diameter. The eccentric pin would have driven a piston, via a connecting rod, converting rotary motion to an oscillating motion to drive a pump. It is thought, therefore, that its function was to supply water to Southington House.

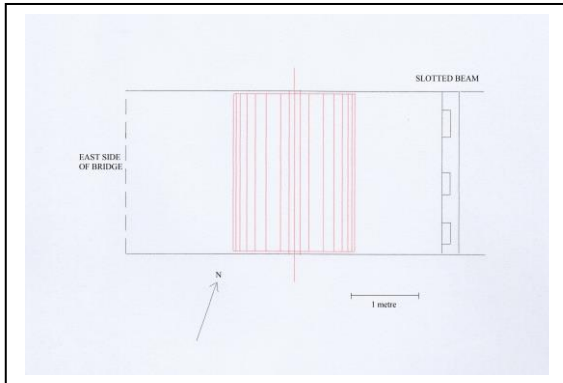


When it was removed, the bed-stones were revealed. Good practice dictates that the bed stones should be laid to match the wheel as closely as possible with a gap of no more than half an inch.¹⁰ This was not the case here, as the top three stones were nearly vertical, with the lower ones following a different curve. When the upper three had been removed, this curve can be seen to have a much greater diameter than the wheel just removed. They also underlie the brick and concrete wall and are therefore of an earlier date.





When removed, the stones were found to have been ground to a curve, calculated to have a diameter of 217cm. It is proposed that they are the remaining bed stones of the silk mill water wheel left *in situ*. The calculated diameter is exactly the same as the wheel at Quidhampton Mill upstream.



Bottom dead centre of the silk mill wheel was approximately half way between the bridge and a substantial slotted beam lying in the river bed. It is assumed in this illustration that the water wheel was 3m wide and occupied the space between the walls.

The Turbine



Confirmation that the turbine was still there came when tons of debris had been removed. The whole steel frame with the turbine attached was then removed, exposing the well and the outflow channel beneath.

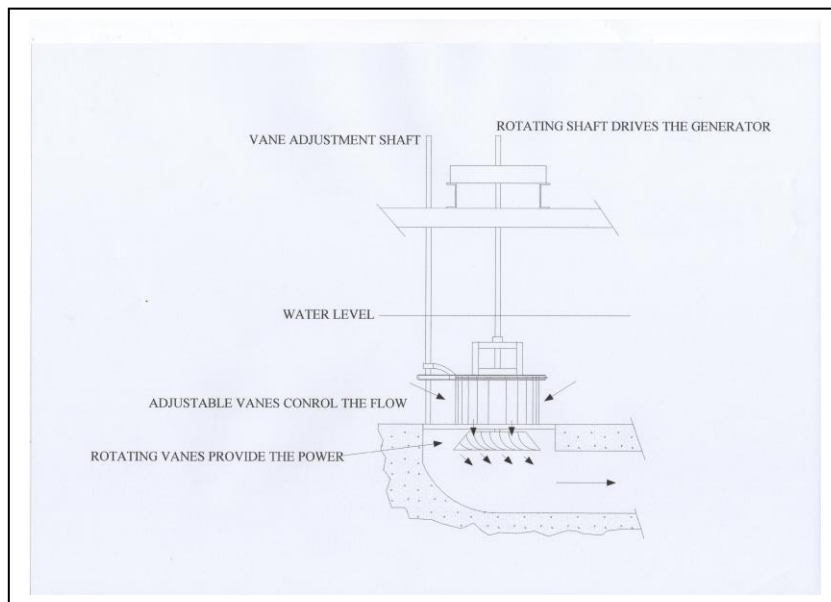
This shows the makers mark, ARMFIELD & CO LTD, RINGWOOD HANTS. Joseph Armfield established an iron foundry in 1850. By 1880, the firm was supplying much mill machinery in the Test and Avon valleys and had acquired a national reputation. In about 1884, J. J. Armfield started to install American-built turbines because they are much more efficient than water wheels. He soon decided to design and manufacture his own, called the 'British Empire Turbine'.¹¹ In 1910, his son, J. H. Armfield, patented the



'River Patent Turbine' of which this is an example.¹² They were designed to be efficient with a low head of water to supply electricity.



The water enters through adjustable vanes to control or stop the flow of water. Below the vanes is a set of curved cups on a rotating shaft which supplied power to the generator above.



Timbers



As the mud was being removed from the millpond just above the weir area, the digger exposed these pointed stumps of timber. They were placed in a hopper and disappeared into the huge pile of mud on the north bank.

By good fortune, two were recovered later. The larger one shown below was 15cm x 17 cm in section and 1m long.



Wood only rots if there is oxygen in the water.

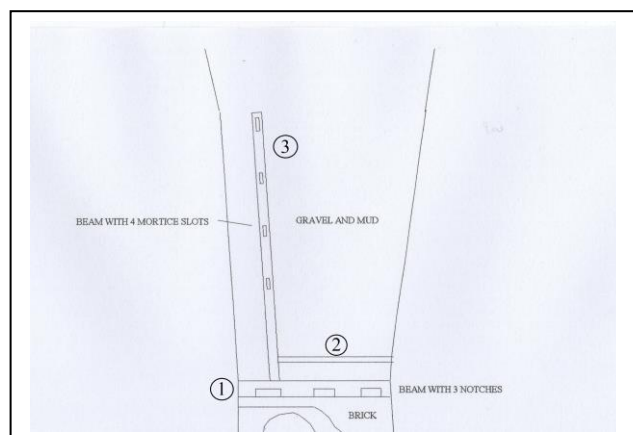
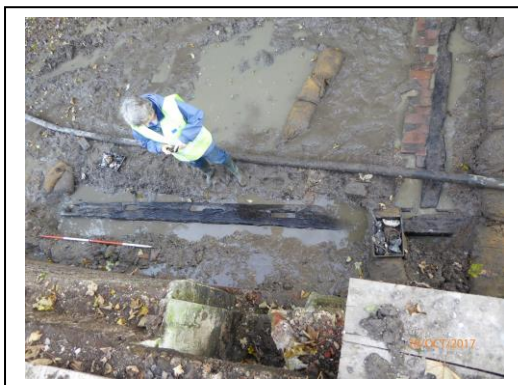
It is assumed that the pointed end to the right was driven deep into the chalk in the river bed and this stump is all that remains of one of a series of vertical timbers supporting a structure above. The tree from which it was cut was shown by dendro-chronology to have been felled between 1766 and 1798¹⁴ and was therefore part of the silk mill.



This slotted timber across the river above the mill wheel was mentioned above. Clearing of the mud in the mill pond eventually allowed access to this part of the river bed. More timbers were soon discovered.

There was a morticed beam, 5m long, parallel with the north bank and another cross beam jointed into it. All three were bored and the samples were sent for analysis. The only one to provide a date was No 2. The tree was felled

between 1760 and 1792.¹⁴ Because all three were jointed together it means that they too were part of the silk mill structure. Lying just head of the mill wheel, they are likely to be parts of the sluice controlling the flow of water to the wheel, though the purpose of No 3 is not obvious. Experts from the Hampshire Mills Group believe it is likely that there was a wall, constructed of timber, leading to a hatch by-passing the mill wheel to allow the miller additional control over the flow of water. In that case, the width of the mill wheel would have been less than the gap between the walls.



THE BRICKWORK

Around the mill pond



Bricks on both banks are irregular in length, height and thickness and many of the edges are not straight. This indicates that they were hand-made before about 1850. These walls were probably erected when the silk mill was built in 1769.

At the weir

The bricks in the side walls are all of the same shape, indicating that they were machine made and that the walls were rebuilt when the turbine was installed.

The bridge



On the eastern side, the bricks are irregular on size and shape and are integrated with a low curved wall under the bridge. It is proposed that the bridge was built at the same time as the silk mill.

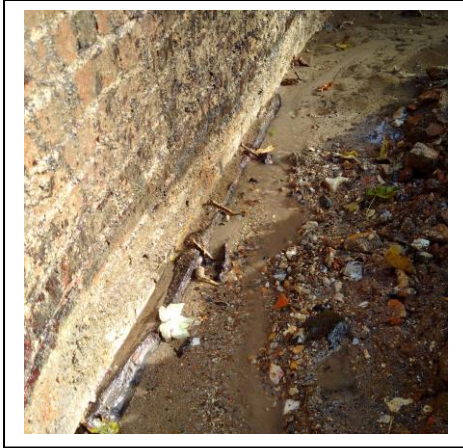


Viewed from the west, it can be seen that there are two different curves to the arch and that the bridge was widened and that the additional brickwork is integrated with the wall around the pool.

The pool

The bricks in this area appear to be machine made. The whole appearance, with the ornamental gates, iron railings and their supports, is of a pleasure garden rather than an industrial complex.

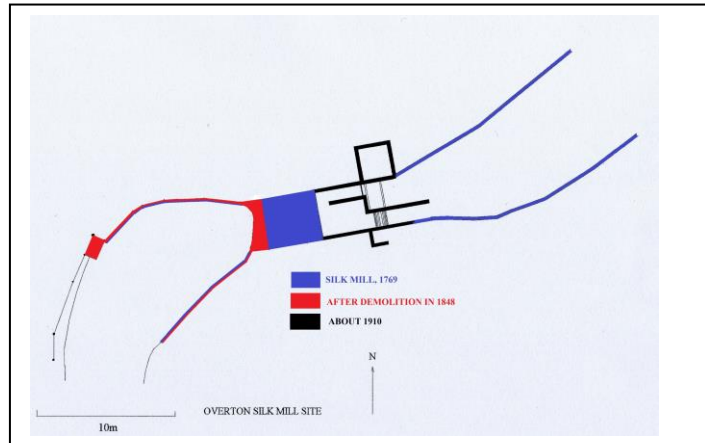




It is proposed that the bridge was widened and the walls were built around the pool after the silk mill was demolished to add this area to the pleasure gardens of Southington House.

However, inspection of the base of the walls, both to the north and south, reveals that the walls rest on a foundation of chalk, held in place by baulks of timber. It is likely that the new walls were built on the foundations of pre-existing walls from the time of the silk mill or earlier.

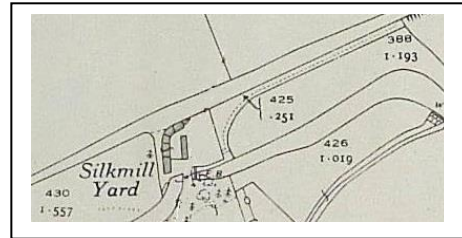
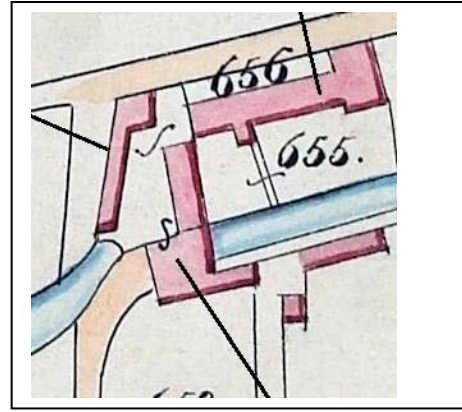
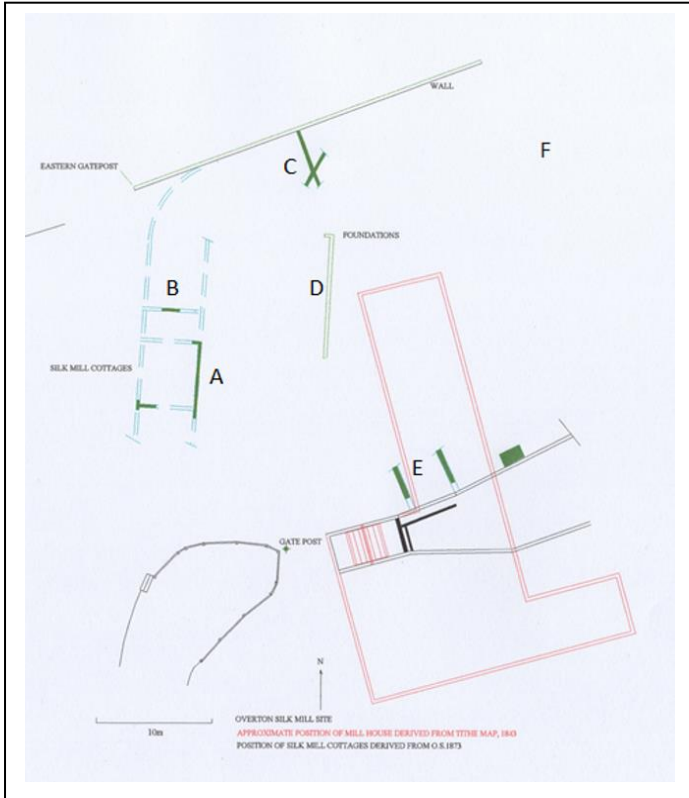
The plan summarises the findings.



BUILDINGS ON THE SITE



These two photographs, probably taken in the 1930s, show the Silk Mill Cottages and another building to the east, identified by a former resident as a latrine block. The cottages near to the river are three storeys in height. They were demolished in 1957 because they were damp and unsanitary.



The site plan (above) is the best available fit derived from the Tithe Map (top) and the Ordnance Survey, 25 inch/mile of 1946 and earlier maps going back to 1873. The outline in red represents the possible footprint of the mill building. A and B are the Silk Mill cottages, with footings excavated shown in green. C represents footings which correspond to an out-house at the north eastern end of the cottages. D is one side of the latrine block shown in 1946 and in the 1910 Ordnance Survey maps which was not present in 1873. E marks the possible footings of the mill building described in the previous section.

Zone A



In a trench dug by the contractors to accommodate the pipe used to divert the river, the foundation of the eastern wall of the cottages was uncovered, direction 010 deg. T. The wall is a double thickness of bricks (10" x 4" with no frogs) and lime mortar sitting on chalk rubble. Also uncovered was an adjoining internal wall, also double thickness, painted green on its southern face. The western outer wall of the cottage was also exposed during further excavation, showing that at this point the building was 5.46m wide.

Zone B



As a result of the cutting of a track to allow vehicular access to the site, this area was cleared with a digger which exposed some of the interior of a cottage. The photograph shows an internal wall of a cottage with a fireplace, originally over 1m in width and 45cm in depth but subsequently narrowed with a concrete fireback.

Zone C



A single storey extension can be seen in the photographs of the cottages and anecdotal evidence suggests that this was an outside toilet and wash-house with a fireplace. Evidence for this building was uncovered in shallow trial trenches. The photograph shows the eastern exterior wall and a contemporary drainage culvert.

Zone D

Parallel to the cottages and 10m to the east, an 11.7m section of the eastern exterior wall of the outhouse was

uncovered. This was constructed of a double thickness brick and cement wall. While the same size as the bricks used in the construction of the cottages, these bricks are harder, darker and have frogs and they were laid frog down. The western and southern walls of this building was not uncovered, so its dimensions are unclear. Anecdotal evidence suggests that the building was divided into four equal rooms, each with a toilet and storage facilities.



Zone E

In the bill of sale in 1848, all the machinery, the mill wheel, and all the building materials were offered for sale.¹⁴ This included all the bricks, including the foundations. However, the list was drawn up before the building was demolished.

In the final phase of the works, when the contractor was levelling the land to the north of the river, footings were exposed on the north bank of the mill pond.

In the plan, the footings are shown in green, along with a large block of chalk found to the east. The outline of the mill building, as judged from the tithe map, is shown in red.





On investigation, they were found to be two brick lengths wide (45cm) and some 95cm deep, composed of brickbats and flints beneath the brickwork. They are in a position where it would be expected that the walls of the mill building would be from the tithe map and are 4.10m apart. The bricks are of the same type, size and shape as those in the cottage foundations. Unfortunately, their true extent could not be mapped by further excavation.

There has been much debate about whether these footings are external walls and, if so, could they have supported a five-storey building? If not, could they be foundations of the fulling mill that stood on the site before the silk mill was built? This question remains unresolved.

Mill owner's house

Trial trenching was undertaken in the area where the mill owner's house was located but no evidence was found.



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APPENDIX 1: CATALOGUE OF FINDS: OVERTON SILK MILL SITE, OCT/NOV, 2017

	Left on site	No	Find Location
1	Ridged pieces of stone, segments of a millstone	2	Below weir
2	Heavy pottery fragments, possibly part of a mortar	2	Unknown
3	Ridged cast iron bar, part of hatch hoist mechanism	1	Below weir
4	Eroded pointed stakes, 2 cut for dating	4	Mill pond
5	Rabetted timber, possibly part of a hatch	1	S bank of mill pond
6	Limestone blocks, ground to 217cm radius	6	At the weir
7	A heavy weight with a ring on top	1	Below weir
8	Heavy iron wheel with short axle, appears industrial	1	On land
9	Adjustable iron roller, appears industrial	1	On land
10	Pickaxe irons	2	Below weir
	Removed from the site		
11	Worked flint, Neolithic tool	1	Unknown
12	Fragment of burnt flint	1	Unknown
13	Golf balls	About 15	Everywhere!
	China and pottery		
14	China /pottery shards, glazed both sides,	45 kilograms	All locations
15	Stoneware pot, inscribed, complete	1	Millpond
16	Stoneware inkwells, one complete, early 19th C	5	Below weir
17	Tobacco pipe stem fragments	80	Below weir
18	Tobacco pipe bowls, complete	3	Below weir
19	JP Hartley 1lb jam jar	3	Unknown
20	F Newman Basingstoke Mineral Water jar	1	Unknown
21	Stone jar pieces (handle, neck or body)	10	Unknown
22	Piece mixing bowl	1	Unknown
23	Pieces ink pot	2	Unknown
24	Egg cup	2	Unknown
25	Candle holder (top)	2	Unknown
26	Portion perforated oval item (drainer?)	1	Unknown
27	Cooking vessel with handle	1	Unknown
28	Piece of stew pot	1	Unknown
	Glass		
29	Glass shards	27 kilograms	All locations
30	Glass bottles, complete	120	All locations
31	Glass bottle tops	25	Below weir
32	Heavy bottle bases, several hand blown	13	Below weir
33	Apothecaries' phials	3	Below weir
34	Glass inkwells	2	Below weir
35	Marbles	18	Below weir
36	Bovril jar 2oz	3	Unknown
37	Marmite jar 1oz	1	Unknown
38	Green glass bottle base Courage & Co Alton Hants	1	Unknown
39	Green glass bottle side ... Brewery Basingstoke	1	Unknown
40	Daddies Sauce bottle	6	Unknown
41	Milk bottle (various dairies)	6	Unknown
	Metal		
42	Unidentifiable metal objects	c40 kilograms	All locations
43	Part side of Singer treadle sewing machine, c1890	1	On Land
44	Hand tools: cold chisels	3	Below weir
45	Hand tools: claw hammer head	1	Below weir
46	Hand tools, double ended spanners	3	Below weir

47	Hand tools: blacksmith's soldering iron1	1	Below weir
48	Hand tools: lead plum bob	1	Below weir
49	Boot heel irons	18	All locations
50	Horseshoes	3	Below weir
51	Lead sash weights	2	Below weir
52	Cutlery, knife	2	Below weir
53	Cutlery, fork	5	Below weir
54	Cutlery, spoon	8	Below weir
55	Part silver plated candle snuffer	1	Below weir
56	Coins, pennies, half pennies, florin, 2 unidentifiable	11	Below weir
57	Sunday school conduct badge	1	Below weir
58	Handmade crown nails	11	Below weir
59	Non-magnetic ball, 1.4cm, possibly lead musket ball	1	Below weir
60	Iron balls, 2.7cm and 3.2cm	2	Below weir
61	Clock pendulum	1	Below weir
62	Pair of 18th C door hinges	1	Below weir
63	Key, probably to the gate on the bridge	1	Bridge
64	Boot pattens, 18th C	4	All locations
65	Lock plate	4	Unknown
66	Very tiny saucepan	1	Unknown
67	Bucket handle	2	Unknown
68	Handle (from bath)	1	Unknown
69	Clock mechanisms (partial)	3	Unknown
70	Chain	1	Unknown
71	Large hinge	3	Unknown
72	Horseshoe	2	Unknown
73	Meat skewer	4	Unknown
74	Hoe head (partial)	1	Unknown
75	Padlock (1 with chain attached)	3	Unknown
76	Coach bolt (large)	1	Unknown
77	Railing top	2	Unknown
78	Poker	1	Unknown
79	Window stay	2	Unknown
80	Basin tap	1	Unknown
81	chisel	1	Unknown
82	Large cog	2	Unknown
83	Pulley wheel	1	Unknown
84	Small cupboard lock	1	Unknown
85	Soldering iron	1	Unknown
86	Hand shear (half pair)	1	Unknown
87	Handle (spade or iron)	1	Unknown
88	Poker	1	Unknown
89	Sugar tongs	1	Unknown
90	Heater mantle	1	Unknown
91	Key (cupboard or clock)	1	Unknown
92	Curtain hook	1	Unknown
93	Pulley wheel	1	Unknown
94	Toy train wheel	5	Unknown
95	Razor handle	1	Unknown
96	Cupboard knob	1	Unknown
97	Threaded washer (light fitting?)	1	Unknown

98	Blazer button	1	Unknown
99	Putty knife	1	Unknown
100	Penknife	2	Unknown
101	Circular door handle plate	1	Unknown
102	Teaspoon	1	Unknown
103	Bone-handled cutlery	2	Unknown
	Bone	c5kg	All locations
104	Fossils , echinoid	3	Below weir
105	Oyster shells	32	Below weir

Machinery

1	Turbine, Armfield of Ringwood, River Patent	1	
2	Water wheel for water pump	1	

APPENDIX 2: THE ANIMAL BONES

by Prof. Mark Maltby, Bournemouth University and Dr Jacqueline Pitt, Wood Plc.

The animal bones are consistent with a post medieval to modern animal bone assemblage. The large size of several of the cattle, pig and sheep/goat bones indicates deliberate breeding to produce larger and more stocky animals. This suggests a post-medieval to modern date. The curved shape of the pig mandible also indicates a post medieval or modern date.

The majority of the bones represent adult animals, confirmed by the presence of fused bones, with the exception of a few calf bones. The assemblage is dominated by the primary domesticates cattle, pig and sheep or goat, with only occasional horse, chicken and rabbit bones. It should be noted that smaller animal bones often suffer from recovery bias, although low frequency of chicken or rabbit is not unexpected. Chicken was an expensive commodity and could be kept for eggs rather than meat, while horse and rabbit may also not have been eaten or may be included in the assemblage as a result of accident or opportunism.

Otherwise, the highest frequency of bones includes primary domesticate rib and limb bones, most usually associated with food waste. The sheep/goat tibias are mostly proximal end, representing the meatier cuts. Many of these bones show saw marks or signs of butchery, confirming that their presence on the site is primarily as a food source.

	Cattle	Cow/Cow-size	Sheep/goat	Sheep	Goat cf.	Pig	Horse	Chicken	Rabbit	Unspec.	Total	Notes
Femur	4		10						1		15	3 cattle sawn; 1 young calf (veal); sheep/goat mostly sawn and fused
Tibia	2		14		1	4					21	pig 1 sawn and large size; sheep/goat mostly proximal end
Tibiotarsus								1			1	
Metatarsal	2		1		1						4	1 cattle sawn; goat juvenile
Phalanx			1								1	sheep/goat 1st phalanx (toe)
Humerus	3			9		3					15	1 cattle sawn; 1 cattle proximal fuse; 1 cattle juvenile (calf); sheep 1 with distal end fused and large size; pig large sized
Radius	2		4								6	1 cattle sawn; 1 juvenile (calf) with cut marks <3 months old
Ulna				1		2					3	
Scapula	1										1	cattle sawn
Pelvis	2		1								3	cattle large with preparatory knife cuts; sheep/goat sawn
Vertebra	9										9	1 cattle large astralgus; cattle mostly butchered/sawn
Rib		26	3				1				30	cow/cow-size majority butchered
Lower Molar	2		4				1				7	horse adult
Upper Molar	1		2								3	
Mandible	1		1			5					7	sheep/goat rear jaw; pig 7-11 months old and curved
Skull				1		3					4	sheep horned and sawn down middle; pig refits
Unspec.										17	17	most probably ribs
Total	29	26	41	11	2	17	2	1	1	17	147	