

Irton Manor Watermill – history, excavation and conservation

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Watermills were commonplace in the estimated 25,000 to 65,000 manors of Medieval England. However, in the 14th century onwards small manorial watermills were squeezed out by the economics of larger vertical mills. Moreover, early small horizontal watermills are believed to have disappeared from England as early as 1200AD. If they existed at all they were probably in the North and far West.¹ Is there any evidence of this?

In the Lake District National Park of Cumbria, on the banks of the River Irt between Irton Hall and Santon Bridge, are the remains of a small ancient watermill. The 'Lords Mill' on the former Irton Manor estate was a permanent structure constructed with high standards of materials and workmanship. Its layout broadly resembles horizontal-wheeled watermills excavated and restored in the Scottish Isles.

Records suggest that the mill may have operated until about 1750 then been left neglected by the Irton family and tenants of the Irton Estate for about 120 years. In 1872 the Burns-Lindow family bought the Irton Estate and undertook nearby building and landscaping work, probably using some stones salvaged from the mill. The Irton Estate was next owned by the Brocklebank family (1896-1976) and the overlooking house and gardens were updated in about 1930. The ruins of the mill became buried by tons of excavated rocks and soil, and boulders were used to limit falling stonework. With the breakup of the Irton Estate (1926-1976) the mill, race and leat became masked by heavy vegetation overgrowth. A photograph of the remains of the Lords Mill (fig. 5) was taken by Mike Davies-Shiel in 1968. The leat and remains of the spill race are in the foreground, with the rubble-filled mill race and mill behind.

Excavation and conservation

In 2017 the watermill, mill race and leat remains were completely masked by dense weeds, brambles, trees and shrubs. Since Mike Davies-Shiel's photograph of 1968 more stones have fallen from the riverside wall reducing its height to 10-12 ft. Furthermore, the landside walls were pulled



Fig. 1. In 2017 the ruins were further dilapidated and extensively overgrown.

down to enable even more building and landscaping rubble to be barrowed and thrown into the mill ruins.

Once the vegetation had been removed in 2018 the mill structure began to emerge, and slow and careful excavation and stabilisation work began in 2019.

The mill was constructed of granite, limestone, basalt and andesite from local quarries and the riverbed, mortared with clay soil and lime-rich mortar pointing. It appears to have had a pitched roof with thick slate tiles. Stones had fallen and some removed, with partial collapse of the head and tail race areas and the riverside wall. Boulders supported the walls within and outside the mill.

The spill race had been washed apart and stones removed, but remarkably much of Lords Mill was found to have survived deeply buried under stones, soil and thick vegetation. Sandstone flags, rocks and slate tiles set in the window of the tail race wall had saved the lintel and stones from falling, and the riverside wall was supported internally and externally by boulders and large rocks.

The leat is approximately 100 ft long by 5 ft wide along a quarried channel from a weir to the mill. It is cut into the rocky elevation; advantage being taken of the somewhat sudden fall and fast flow of the River Irt at this point.² The leat has now been cleared but remains blocked at the weir end by river debris and fallen trees and branches. Some weir stones had been moved to aid fish migration.

The hidden remains of Lords Mill were revealed and stabilised by the owner over two years during dry summer weather, using a trowel, buckets, a block and tackle, a ton of hot lime mortar, several short rebars and 100kg of limestone chippings.

Boulders and stonework excavated from the mill were used as drystone walling for the mill race, Landscaping rubble was used for seating gabions and to strengthen washed away areas of the riverbank near the spill race and tail race.

The walls were 15 ft by 15 ft externally, and 2 ft thick, and may have risen to 18-20 ft at the peak of a pitched roof (some 8 ft above the highest wall remains). The sluice gate, spill race and 1:10 sloped, 20 ft by 2 ft mill race were constructed in part with locally quarried St Bees sandstone. The stonework had lost much of its clay soil bedding and almost all lime mortar pointing. Joints were raked out to a depth of 1-4 in, and walls stabilised with stone fragments and pointing with hot lime mortar. At risk stonework in window and headrace areas are now partially supported by rebars. Stones and rocks found in demolished areas have been used to make drystone walling to the height in the 1968 photograph.

A buried entranceway was discovered with a sandstone step and door pivot stone. Unearthed wrought-iron strap hinges, driven pintles and nails were possibly hand-forged in the nearby former smithy and suggest it had a 3 ft wide and 3 in thick wooden door. The left-hand entrance wall was rebuilt with stones and slates removed from the mill. If it existed at all, it had been demolished to ease dumping rubble into the mill.



Fig. 2. Excavation began in 2019. Bedding of walls with clay soil and lime-rich mortar pointing had been mostly washed away. View of mill from mill race.

The entrance opens to a 11 ft wide by 3 ft deep sandstone flagged platform, with stone steps on its downstream side descending to an 8 ft by 8 ft lower storey or wheelpit.

The upper-storey floor timbers, supporting beams, millstone mechanisms, hopper and pitched roof are long gone. Removal of these fixtures had weakened the riverside wall.

The wheelpit floor had a thick layer of clay-rich soil and the water flow channel is clearly identifiable. The stonework in the centre of the wheelpit has a circular cavity that may have retained a bearing for the vertical spindle of a sole tree (horizontal pivoting beam). Its position is shown by the short yellow pole.

A fragment of a harp-patterned millstone (9 in x 9 in x 10 in triangle and 4 in thick) was also uncovered. It is red-brown in colour, tough, fine-medium grained, porous micaceous sandstone, probably from St Bees. A very worn, larger piece (2 ft wide and 3.5 in thick) partially supports the downstream window lintel. Several other shaped, gritstone-like fragments were found.



Fig. 3. By mid-2021 the mill was fully cleared, stabilised and lime mortar pointed where required.

The leat may have had relatively constant water flow from a weir on the River Irt. Closing the spill race and lifting the mill race sluice boards would have allowed water to stream down the relatively narrow 20 ft long, 1:10 sloped, 2 ft wide mill race. Then, focused and concentrated to about 6 in wide by a large granite pinch stone, it ran down the 1 ft by 1 ft steep head race at the base of the 2 ft thick mill wall. As the torrent crossed the internal 11 ft wide, sloped wheelpit floor it would have turned the mill mechanism. It would have exited through the 15 in wide and 2 ft deep tail race at the base of the opposite 2 ft thick wall, then run some 15-20 ft into the river. This layout and its dimensions appear suitable for a simple horizontal paddle wheel.

Modest horizontal-wheeled or Norse mills were common in Scotland, the Isle of Man and Ireland in medieval times (1066-1539) and several have been preserved or rebuilt, but in 1899 there were no known remains in England.³ They were used for grinding corn or fulling cloth, particularly on small fast flowing rivers and streams. Simple millstones typically 2-3 ft across and with no gears, enabled easy use and adjustment for the quality of the corn.



Figs. 4 and 5. The photograph on the left, looking from the mill race to the mill, was taken in 2021 and can be compared to that on the right, taken by Mike Davies-Shiel in 1968 (reproduced with kind permission of the Cumbria Industrial History Society).



Fig. 6. View of internal head race and water channel. Yellow pole shows position of central spindle bearing.



Fig. 7. Platform and base for beams across to riverside wall and flooring. Stone steps to tail race and wheelpit.



Fig. 8. Possible spindle bearing cavity in wheelpit stone floor.



Fig. 9. Fragment of harp patterned millstone.



Fig. 10. Shutter board housing controlling flow down mill race.

History

Archives, maps and literature searches support speculations about the history of Lords Mill and its possible construction in the 13th century.

In the 11th century the Irton family lived in a local fortified settlement, before constructing Irton Hall only a quarter of a mile downstream from the mill in 1220. In the 14th century the Irton family amassed substantial wealth, enabling them to rebuild and extend Irton Hall and erect new buildings.¹

The date of construction of the Lords Mill is unclear, but it may have been in the 13th century or perhaps earlier. In 1311 Alan de Copeland, holder of the Manor of Santon, brought a legal suit against Thomas de Irton for failing to transfer corn milling from his small mill to Copeland's new large watermill in Santon Bridge.⁴ Copeland's undershot vertical-wheeled cornmill is believed to have been built less than half a mile upstream in the late 13th or early 14th century. It had no exclusive obligations for tenants' use.⁵

A map of 1774 shows the Lords Mill with a symbol for an operating watermill.⁶ However, other than the needs of Mill Place farm, its use may have gradually declined due to changes in ownership of Santon Bridge mill.

The last male representative of the ancient Copeland family of Santon, John Copeland, died in 1491. In 1492 John Irton 'kidnapped' John Copeland's three daughters and married one daughter to one of his sons. A third of the manor of Santon was gained as a dowry, including Santon Bridge mill. Over time the much larger Santon Bridge cornmill was rebuilt and sawmill and bobbin mill operations added. It was eventually sold by the Irton Hall estate in about 1928 and is now a group of holiday cottages.

Local records suggest that Lords Mill continued to operate until about 1780. Tenants of Irton Manor were bound to bring their corn to be ground in the mill, with Lord Irton taking so much of the corn as his fee.² Threshing and kiln drying of grain prior to milling may have been undertaken at the Irton's neighbouring farm buildings and gin gang, named Mill Place.

In the early 1700s the Irton's miller, John Thompson and family lived in the estate-owned, small dwelling overlooking the leat and mill. His son, also John Thompson, was born there in 1721, became a miller and eventually leased Santon Bridge Mill from 1749. Shortly before this Aaron Stainton, a miller, and his son Moses Stainton leased Irton Cornmill 1745 to 1776. An estate stonemason, John Robinson, and family then moved into the riverside dwelling and lived there until 1843. In 1842 it was believed that all vestiges of Lords Mill had been swept away, with the Irton's nearby farm retaining the name Mill Place.⁴

The wealth of the Irton family declined in the 19th century. When Samuel Irton died in 1866 his widow burnt all papers, maps and papers relating to the family and its possessions. Legal documents were also so irreparably damaged over the years that they are scarcely decipherable. Graffiti carved into the sandstone platform (b T 1868) may relate to a birth coinciding with uncertainty of employment prior to sale of the Irton Estate in 1872. Most of the rubble and soil infill probably came from rebuilding and extending the overlooking dwelling and landscaping by the new owners of the Irton Hall estate (the Burns-Lindow family in 1872-1896 and the Brocklebank family in 1896-1976) and the two subsequent purchasers of the riverside house and gardens (1976-1986 and 1986-2017).

In summary the ruins of the Lords Mill are intriguing. Opinions on its history and use are open to challenge given the destruction of Irton Manor documents in 1866. If authenticated, this small ancient horizontal cornmill may have survived centuries of dereliction because of the protection of its Irton Manor title-hold despite being surplus to the needs of Irton Estate owners and tenants. Neglect and dilapidation resulted from the other priorities of new owners.

References

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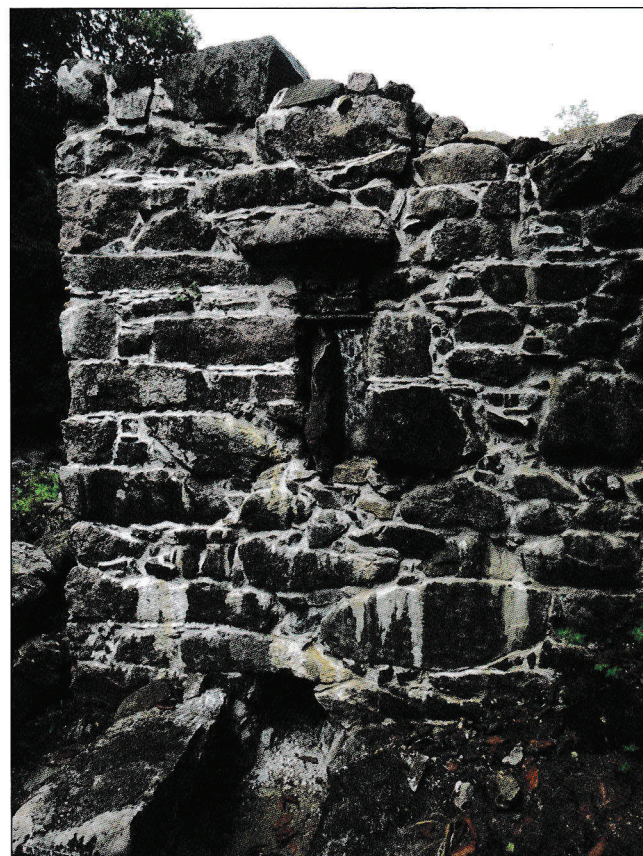


Fig. 11. External downstream wall, window and tail race.

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Excavation artefacts

- Soil and rubble from building and landscaping works and household artefacts are mostly Victorian and Georgian (1870s to 1930s). The age of most of the infill is consistent with known building and landscaping work undertaken from approximately 1870 onwards. The door ironwork may be much earlier and hand crafted in the nearby smithy.
- Wrought-iron strap hinges with driven pintle.
- Hand forged nails.
- Hanger for 3in-thick door with hand forged nails.
- Door pivot stone.
- Broken clay pipe pieces.
- Broken Victorian and earlier stoneware and porcelain plates, bowls and glass bottles. Fragments of Aynsley

Mayfield tableware. Small teapot spout with nine leaf-sieving holes

- Victorian heel and toe nail-on clog irons (calkers)
- Remains of a Gamages (London store and catalogue retailer) No 7 side wheel lawnmower manufactured by Derwent Foundry (later Qualcast) in the late 1920s.
- Jaw, spine and leg parts of dog skeleton
- Sickle blade, screwdriver, paint pot and bread bin lid
- Freshwater mussel shells. An endangered species historically exploited in Santon Bridge for centuries for their natural ability to produce black pearls. Fresh water pearl mussels (*Margaritifera margaritifera*) are being reintroduced by the West Cumbria Rivers Trust.
- Rat and squirrel trap

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Conversion from Imperial to metric units

1 ft = 30.48 cm

1 in = 2.54 cm



Fitting the last sail to Great Gransden post mill (Cambridgeshire, UK) by Gransden and Wicken millwrights on 19 April of this year (photograph by Alan Rowbotham).