

**UPPER MILL
INVERBERVIE
ABERDEENSHIRE**



Standing Building Survey

Carried out 10th October 2015

by

Murray Archaeological Services Ltd



Report No: MAS 2015-34

by

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UPPER MILL INVERBERVIE ABERDEENSHIRE

- Standing Building Survey -

1. Background
 - 1.1 A standing building survey was required for the mill buildings at Upper Mill, Inverbervie, Aberdeenshire, prior to their partial demolition and conversion into a dwelling.
 - 1.2 The archaeological condition was applied in the context of planning legislation (PAN 2/2011, SPP, SHEP), which states that it is necessary for developers to arrange for archaeological work to take place prior to development, in appropriate circumstances. Planning Application Numbers: APP/2013/2580, APP/2015/2607.
 - 1.3 A Level 1 Standing Building Survey was required which includes measured plans and elevations, a written account of the building's plan, form, function, age and development sequence in addition to a photographic survey of the interior and exterior of the building.
 - 1.4 Murray Archaeological Services Ltd was commissioned to undertake the work by the owner, Mr David Evans. The site element of the survey was completed on the 10th October 2015.
2. Desk-top survey
 - 2.1 A search was carried out in the Sites and Monuments Record, Archaeology Service, Aberdeenshire Council and in the Sites and Monuments Records of the Royal Commission for Ancient and Historic Monuments in Scotland (RCAHMS) through Canmore and Pastmap.

2.2 The 1st and 2nd edition Ordnance Survey maps were consulted.

2.3 The 1791-99 and 1834-45 Statistical Accounts for Scotland were also consulted.

2.4 Two undated photographs (? 1940s/1950s) show the mill and the last mill manager. MAS Ltd are grateful to Mr David Evans for allowing these to be photographed and reproduced.

3. The Site

3.1 The site lies to the NW of the burgh of Inverbervie at the W end of School Wynd, in the Haughs on the S bank of Bervie Water.

Parish: Arbuthnott

NGR NO 82368, 73418

RCAHMS No: NO87SW 50

Canmore id: 122206

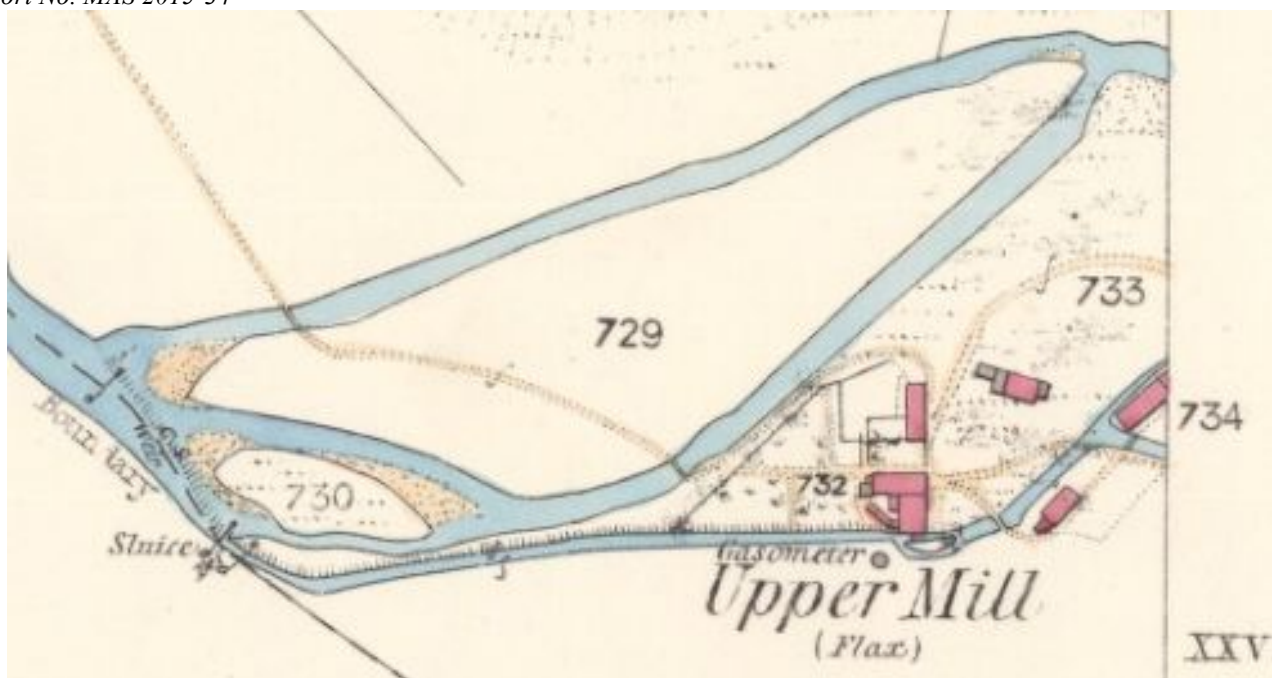
Aberdeenshire SMR No: NO87SW0035



Illus 1 Site location. Ordnance Survey © Crown copyright (2007) All rights reserved. Licence number (100049810). Site indicated by red circle.

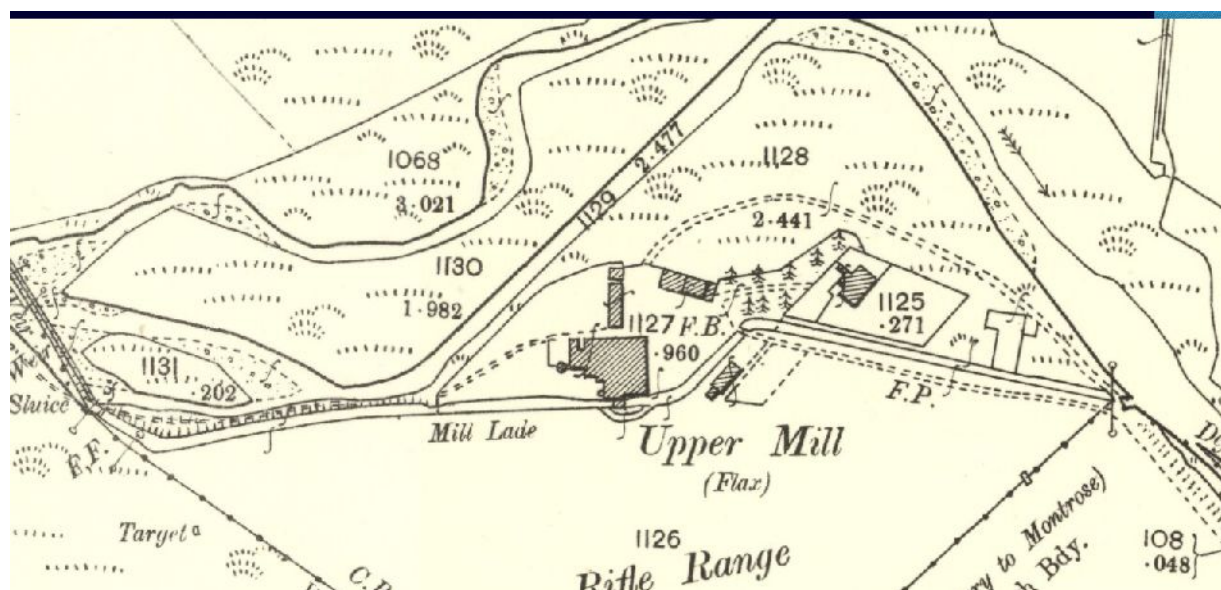
4. Documentary evidence

- 4.1 **Statistical Account for Scotland. 1791-9.** The account, written c1791, records that ‘ *Three years ago, a machine was erected on the haughs of Bervie, for spinning linen yarn: This machine was the first of its kind in Scotland*’ <http://stat-acc-scot.edina.ac.uk/link/1791-99/Kincardine/Bervie/13/4/> . The same account refers to the lint mill (c.1790), two barley mills and a corn mill.
- 4.2 **Statistical Account for Scotland. 1834-45. Parish of Bervie. Dated May 1837.** In 1837, the local minister, who wrote the account, notes that ‘ *There is, on the upper side of the bridge, a spinning mill of three stories, which was the first established in Scotland for the spinning of yarn and thread. This mill is at present undergoing a thorough repair, and considerable additions are making to it, and, when completed it will employ a good many additional hands. All the machinery at these mills is moved by water*’. <http://stat-acc-scot.edina.ac.uk/link/1834-45/Kincardine/Bervie/11/10>
Further in the same account the writer notes that a night shift had been attempted due to the quantity of work, but had been unpopular and was discontinued <http://stat-acc-scot.edina.ac.uk/link/1834-45/Kincardine/Bervie/11/14-15>
- 4.3 **1st edition Ordnance Survey 25"/mile Kincardine Sheet XXV.2 (with insert XXV.1) (Arbuthnot) surveyed in 1864, published in 1868** shows a cluster of five buildings. The mill itself was an L-shaped building, with an E/W building abutting the N end of the main mill structure which was by the mill lade. Several small structures abut the outside of the W side of the mill. N and NE of the mill lie two further buildings on the N side of the lade, with two other buildings S of the lade.



4.4 The 2nd edition 25"/mile Ordnance Survey of 1902 (published 1903).

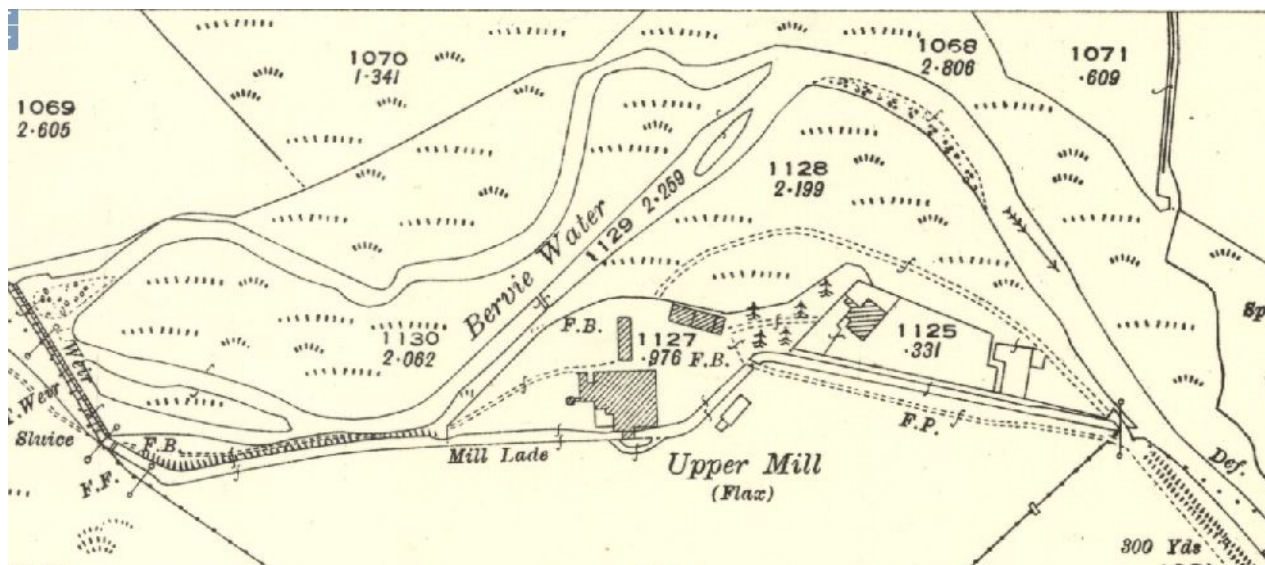
Kincardineshire 025.14 (includes Bervie). Considerable changes occurred in the period between 1864 and 1902. Significantly, there was an extension along the E side of the main mill block and some alterations to the W side of the N section of the building. The two buildings N of the lade remain and for the first time the manager's house is shown. One of the buildings S of the lade has been removed.



Illus 3 Detail of the 2nd edition Ordnance Survey 25" map, surveyed in 1902 (published 1903).
www.nls.ac.uk

**4.5 25"/mile Ordnance Survey of 1922 (published 1925) Kincardineshire 025.14
(includes Bervie).**

There appears to be no significant change to the mill buildings between 1902 and 1922, but the second of the buildings S of the lade had become roofless by 1922.



Illus 4 Detail of the Ordnance Survey 25" map, surveyed in 1922 (published 1925).
www.nls.ac.uk

4.6 Photograph 1 undated c. 1940s/1950s- possibly the very hard winter of 1946/7

This is a general view of the mill looking N from the S side of the lade. The main mill building retains its water wheel. A lower building with pitched roof abuts it to the E, extending to an E/W building to the N. A further building is shown on the W side of the mill, with a brick chimney beyond.



Illus 5 Undated photograph. Courtesy of Mr David Evans

4.7 Photograph 2 undated c. 1940s/1950s- possibly the very hard winter of 1946/7.

This appears to have been taken on the same, very frosty, snowy day. It is a close-up of the mill wheel with the mill manager standing on the LHS. It shows significant detail of the position of the wheel at this time and details of the windows in the S gable of the mill.

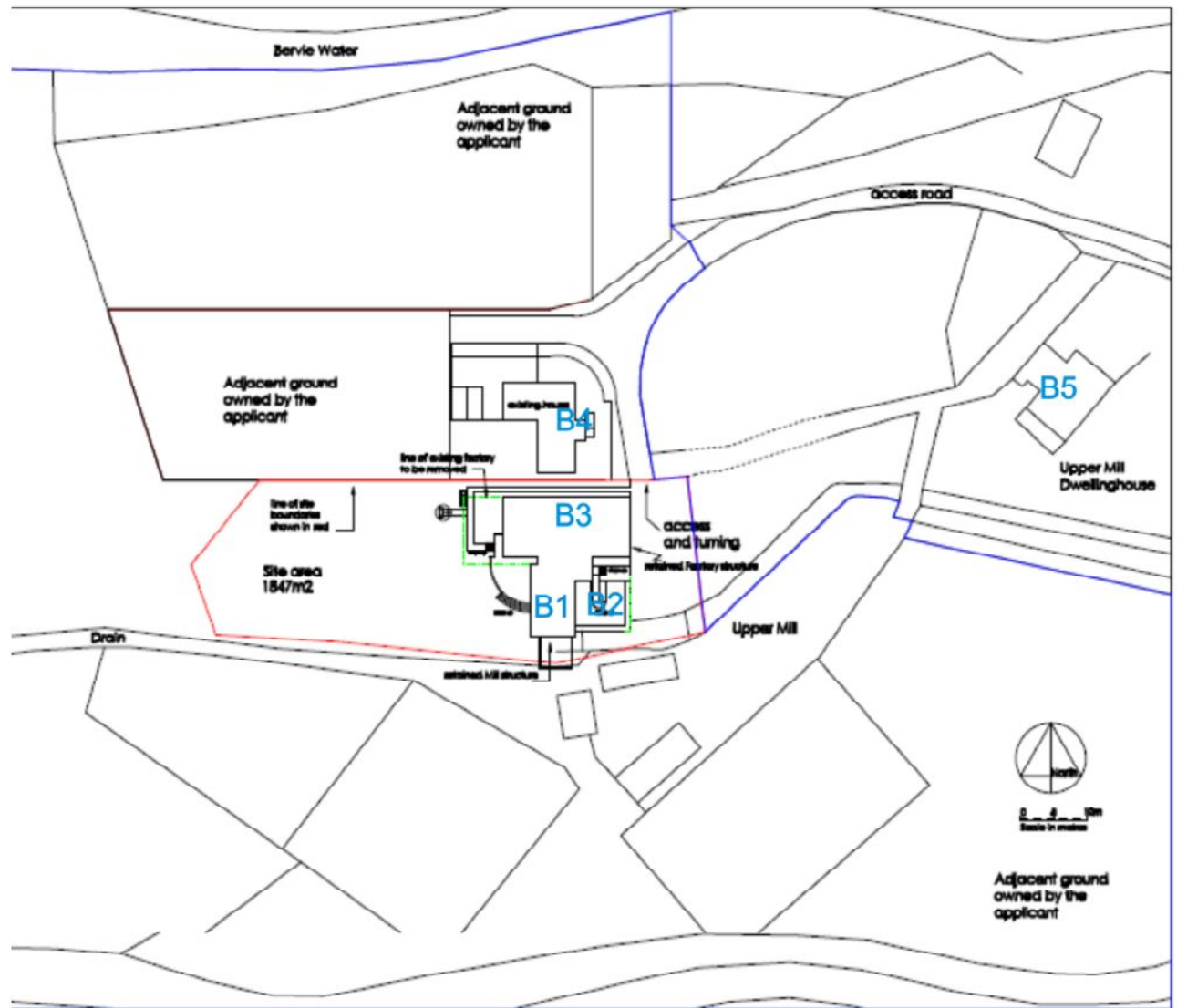


Illus 6 Undated photograph. Courtesy of Mr David Evans

5 Methodology

5.1 The ground plan (Illus 9) and relevant elevations (Illus 10, 11, 16) have been adapted from a drawing by DS Beckett, Architect and annotated to show details and to indicate differences in the building materials which may help in understanding the development and history of the building.

5.2 The areas recorded were photographed. The full set of photographs will be supplied for the archive and an annotated plan in the present report (Illus 23) indicates the position of each.



Illus 7 Location. Site outlined in red (Buildings B1-B3). B4 and B5 are not part of the application but were associated with the mill in their original form. Adapted from plan by DS Beckett, Architect. Accessed on Aberdeenshire Council Planning website.

6 The Mill

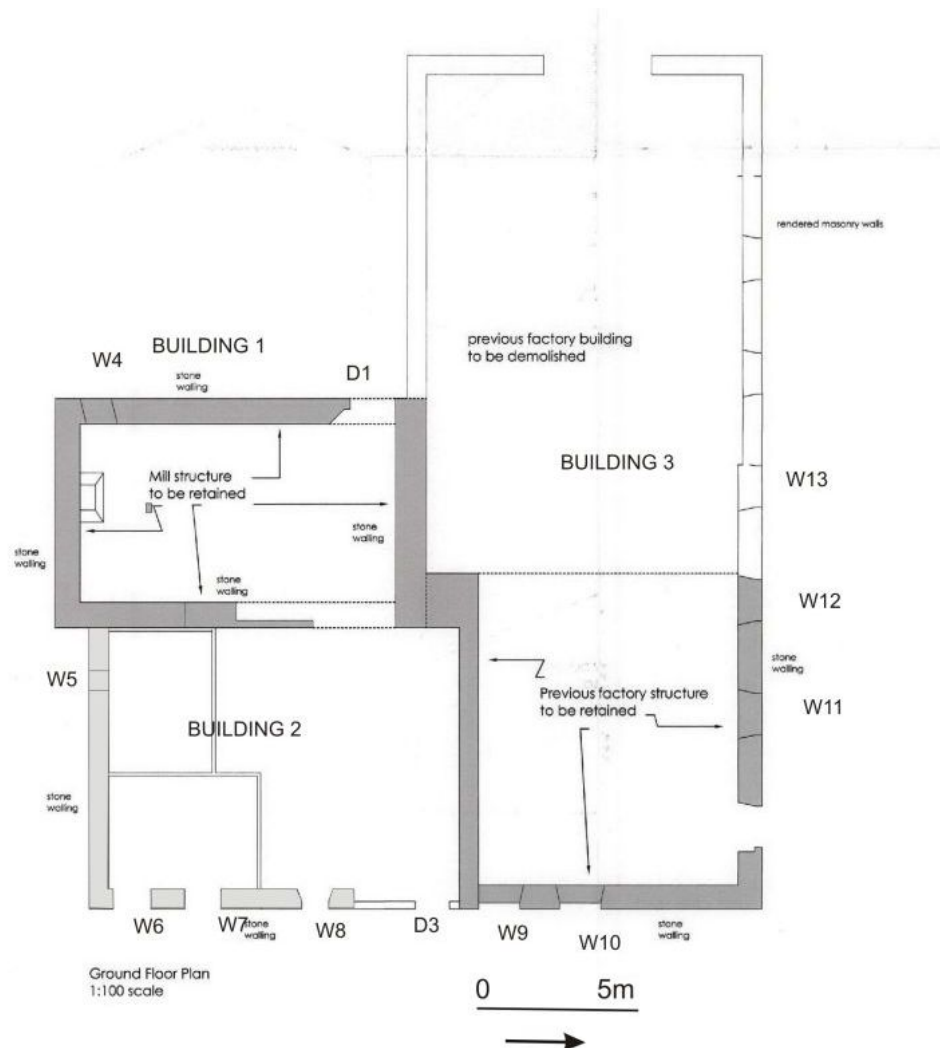
The present application refers to three attached buildings B1-B3 (Illus 7). Two buildings that have been previously converted (B4 and B5) had also been part of the mill in their original form. B4 is shown on OS maps from 1864. Building B5, the former Manager's House, is shown on OS maps from 1902. Both have been converted to modern dwellings and are not part of the present report.

Within the present site (Illus 9), only the main mill building B1, which survives with a significant part of its original structure, is reported below in some detail. The adjoining buildings B2 and B3 are on the footprint of buildings shown on the early maps but have been re-used and converted first as a Shoddy (Flock) Mill (c. 1945-

1960s. pers.comm. David Evans) and more recently as a chemical factory. As a result only fragments of the original structures survive; only the parts of these buildings that appear to be original are described in any detail.



Illus 8 Mill from W. B1 (RHS), B3 (centre) and B4 (LHS)



Illus 9 Plan of buildings 1-3. Adapted from plan by DS Beckett, Architect. Accessed on Aberdeenshire Council Planning website.

6.1 BUILDING 1: MAIN 3-STOREY MILL

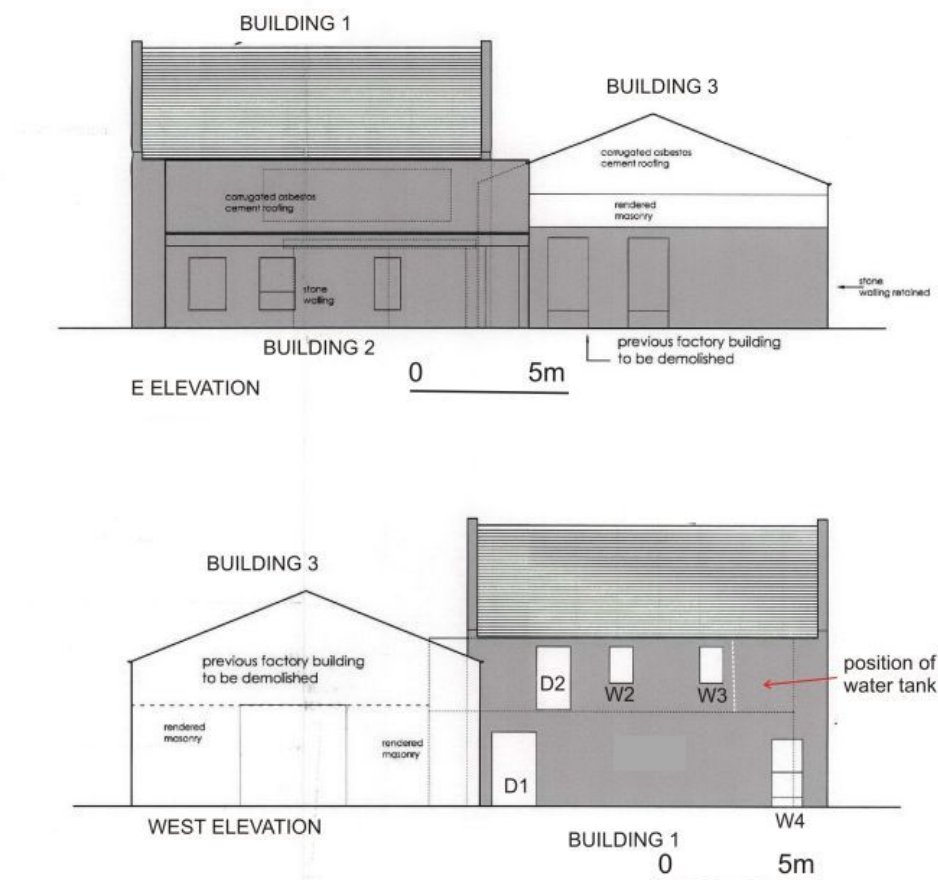
Dimensions 11.5m x 7m externally

Original use Flax Mill

Present/recent use Factory. Now empty.

Walls Irregular red sandstone rubble blocks. Partially harled on W wall. E wall almost completely removed and replaced with brick and modern glass windows during conversion to factory and the opening up between B1 and B2.

Roof Pitched slate roof.



Illus 10 E and W Elevations. Adapted from drawing by DS Beckett, Architect. Accessed on Aberdeenshire Council Planning website.

Doors and windows

W wall

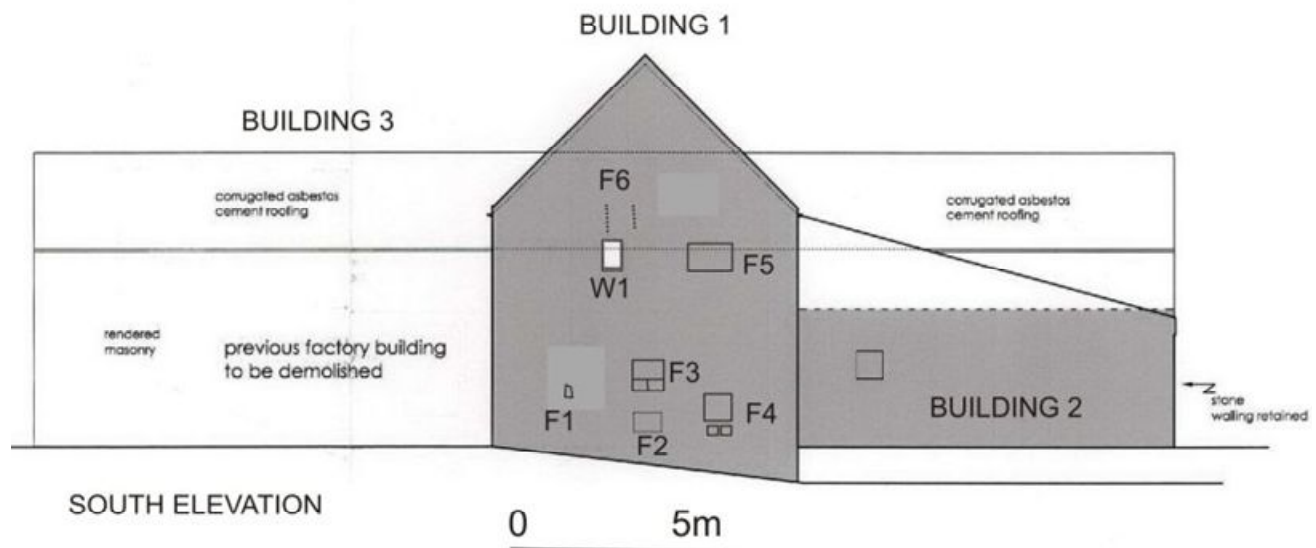
D1 H: 2.16m W: 1.4m. Harled externally with modern sliding door. Internally the angled masonry on N side suggests it was an original doorway.

D2 H: 1.85m W: 1.06m. This appears to have been an internal door, possibly giving access at 1st floor level to the original building on the footprint of B3. A small extension to B1 is shown at this point from the 1864 OS map onwards.

W2 H: 1.15m W: 0.73m

W3 H: 1.15m W: 0.73m

W4 H: 1.05m W: 0.92m Modern window in larger opening, lower part of which is blocked. Harled so no detail of lintel etc. H: 1.60m W: 0.92m with acutely angled N side.



Illus 11 S Elevation. Adapted from drawing by DS Beckett, Architect. Accessed on Aberdeenshire Council Planning website.



Illus 12 S wall of B1 from across laide, looking NW

S wall

This is the wall beside the lade, where the wheel had been attached.

W1 H: 0.70m W: 0.50m. Stone sill

F1 H: 0.28m W: 0.20m at top, tapers to base. Angled through wall. Brick blocked. Comparison with the photograph (Illus 6) shows a metal railing which angled to the wall at this point, so F1 was probably the socket which held the end of the railing.

F2 H: 0.36m W: 0.60m. Grey sandstone on all 4 sides. Brick infill.

F3 H: 0.65m W: 0.59m. Cast iron housing through thickness of wall (0.50m to blocking). Blocked with breeze blocks. Grey sandstone sill and part of sides, concrete around top.

F4 H: 0.60m W: 0.63m. Through thickness of wall (0.62m) Brick blocking. Dressed sandstone lintel, sill and rybats. Central axle shaft groove W: c. 0.12m. Two smaller sockets below, each H: 0.20m W: 0.23m and depth into wall: 0.30m. Sandstone between.

Comparison with photograph (Illus 6) shows that this was the wheel axle position at that point. The 1864 OS appears to show wheel central; by 1902 and 1922 it appears to be more to the E side of the gable. It is possible that F4 and F3 have been axle positions at different times.

F5 H: c. 0.70m W: c. 1m. No stone rybats. Concrete blocked. This shows clearly as a window on the 1940s (?) photograph (Illus 5, 6)

F6 Unclear blocking above W1. On 1940s (?) photograph (Illus 5), this appears to be a possible window set into a door-sized blocking.



Illus 13 View of base of S wall, looking E



Illus 14 Detail F3



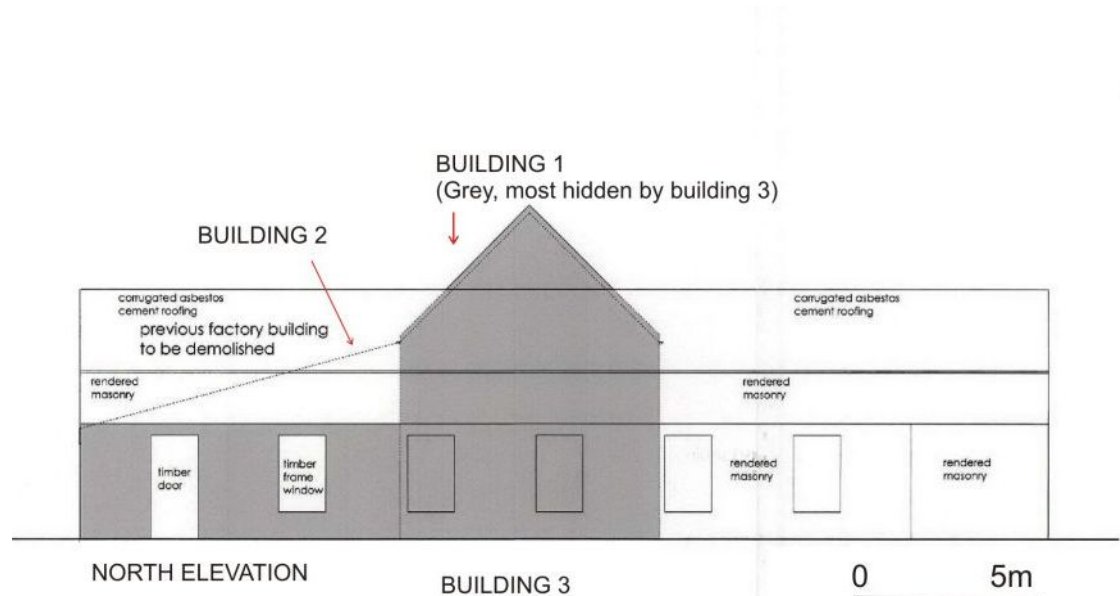
Illus 15 Detail F4

E wall

Most of the E wall of building B1 had been rebuilt in brick with modern windows added at 1st floor level when the roof of B2 was raised and rebuilt as a lean-to against the top of the B1 wall.

N wall

The N wall was masked by the converted building B3.



Illus 16 N Elevation Adapted from drawing by DS Beckett, Architect. Accessed on Aberdeenshire Council Planning website.



Illus 17 E wall of Mill B1 as seen from inside B2

Interior

B1 is described in 1837 (para 4.2 above) as a three storey building. Externally it is clear that there was an attic/loft floor, lit by one metal skylight on the W side of the roof and three on the E side. This loft was not accessible.

The ground floor had been largely lined out during the use of the mill as a factory but a few features remained.

At the centre of the inside of the S wall there was a pyramidal stone buttress with two threaded bolts on the upper flattened surface. (Top: 0.74 x 0.45m. Base splays to: 0.70 x 1.45m. H: 1.35m.). This appears to be almost in line with F3 on the exterior of this wall and at much the same height as the main central horizontal surface of the casting. It would appear possible that at some stage a horizontal wheel shaft passed through F3 and rested on this pyramid. However, no other associated features survived as the rest of the interior had been restructured during the period that the mill was in use as a Shoddy Mill (c. 1945-1960s). At this period, a large cement water tank was built on the 1st floor at the N end of B1, with a reinforced ceiling to the ground floor built to support it, with a central concrete pillar (centre foreground Illus 18). An electric motor beside door D1 would have been the switch gear for pumping water by electricity up to this tank (Illus 19). The water may have been used for washing the shoddy.



Illus 18 Interior of S end of Building B1

A steep wooden stair rose from beside door D1 up to the 1st floor. The blockwork of the water tank cut off the N end of the interior (Illus 20). The remainder was lined out but there had been a fireplace (no chimney remains visible) at the S end (pers. comm. David Evans). This had been the mill Manager's office, at least in the later stages of its use.



Illus 19 Building B1. Inside of door D1 and electric motor. Stair to 1st floor.



Illus 20 1st floor looking N to wall of secondary water tank.

6.2 BUILDING 2

Building B2 has been almost fully restructured and little of the original building survives. The S wall and the S part of the E wall appear to be original.

Dimensions 8.6m x 11.4m externally

Original use Flax Mill, then Shoddy mill.

Present/recent use Factory. Now unused.

Walls S wall and S part of E wall are of red rubble stone. However even this section of wall displays two phases of work with a line of rybats between windows W7 and W8 indicating a break in construction. The N end of the E wall is of rendered concrete blocks.



Illus 21 B2 E wall. Note rybats in stonework to LHS of ranging rod. Note also preserved stone gable in wall of B3 to RHS

Roof The original roof was pitched; this can be seen clearly on the 1940s (?) photograph (Illus 5). Oddly this seems to be at a shallower pitch than the stone gable that can be seen incorporated into B3 (Illus 21) which would appear to have been another, possibly earlier, roof line of B2.

The present roof is a lean-to of corrugated asbestos, abutting the E wall of B1. This is shown on Hume's photograph of 1976 (SCRAN. 000-000-187-231-C).

Doors and windows

S wall

W5 Possibly original. Is visible on 1940s (?) photograph (Illus 5)

E wall

W6-W8. All have sandstone rybats, lintels and sills. They appear to be glazed on the 1940s (?) photograph (Illus 5).



Illus 22 Building B3 seen from NE

6.3 BUILDING 3

Building B3 has been almost totally restructured during its use as a factory.

Dimensions Total length: 26.4m. East end W: 8.7m. West end W: 11m externally.

Original use Flax Mill, then Shoddy mill.

Present/recent use Factory. Now unused.

Walls The lower part of the N end of the E wall and of much of the N wall are of red rubble stone. This part has dressed stone rybats at the NE corner and similar dressed stone has been used or re-used around windows in the N wall. However, the wall height has been raised with blockwork and rendered walling at the S end of the E wall and at the W end of the building may also include rebuilt sections with blockwork.

Roof Present corrugated roof is pitched. 1940s (?) photograph (Illus 5) shows a slate roof, hipped at the E end.

7 Discussion

The mill as a flax mill

The mill appears to date from 1788 and is recorded as the first water-powered mill to spin flax in Scotland. This date and attribution is supported by Hume (Archaeology Notes in RCAHMS and 1977, 221.) but it is not clear if this is based solely on the Statistical Account of 1791-9 (para 4.1 above).

The 1791-9 Statistical Account notes that there had been a degree of hand spinning and weaving of flax in Inverbervie. In c. 1770s a manufacture of coloured linen threads was set up and the same proprietors appear to have started the Upper Mill to spin the flax- the resultant yarn then being used in the thread factory. By the 1790s the mill was not up to full capacity but was aiming to have 600-700 spindles in operation and employ some 80-90 people. According to the 2nd Statistical Account there was high demand for the flax fibre in the early 19th century and in 1837 the mill was undergoing repairs and additions.

Building B1 is the only building that can with confidence be attributed to the 1788 mill. By the 1864 OS map there was a building on the footprint of B3, presumably part of the 1837 expansion. Buildings on the footprint of B2 were extant by the 1902 map.

The mill producing shoddy

Shoddy was the re-use of woollen rags to make a yarn that could be re-spun. In Britain, shoddy production began in Yorkshire in 1813 (Jubb, 1860) and continued until its decline from c 1958 when the increase in the mixing of synthetic fibres with woollens made the sorting of the rags impracticable (Clapp, 2013, 201-3). It is not clear when shoddy production started in Upper Mill but it does appear to have been active post WW2 in the 1940s when it is reported that old army uniforms were chopped up for re-use and apparently army buttons (which would have been cut off prior to processing) are frequently found around the mill grounds (pers. comm. David Evans).

Shoddy manufacture began with the sorting of woollen rags which were classified to type and colour. This would have taken place by hand in a long room (possibly B2?). The sorted rags were then chopped by a cylindrical machine with teeth, probably

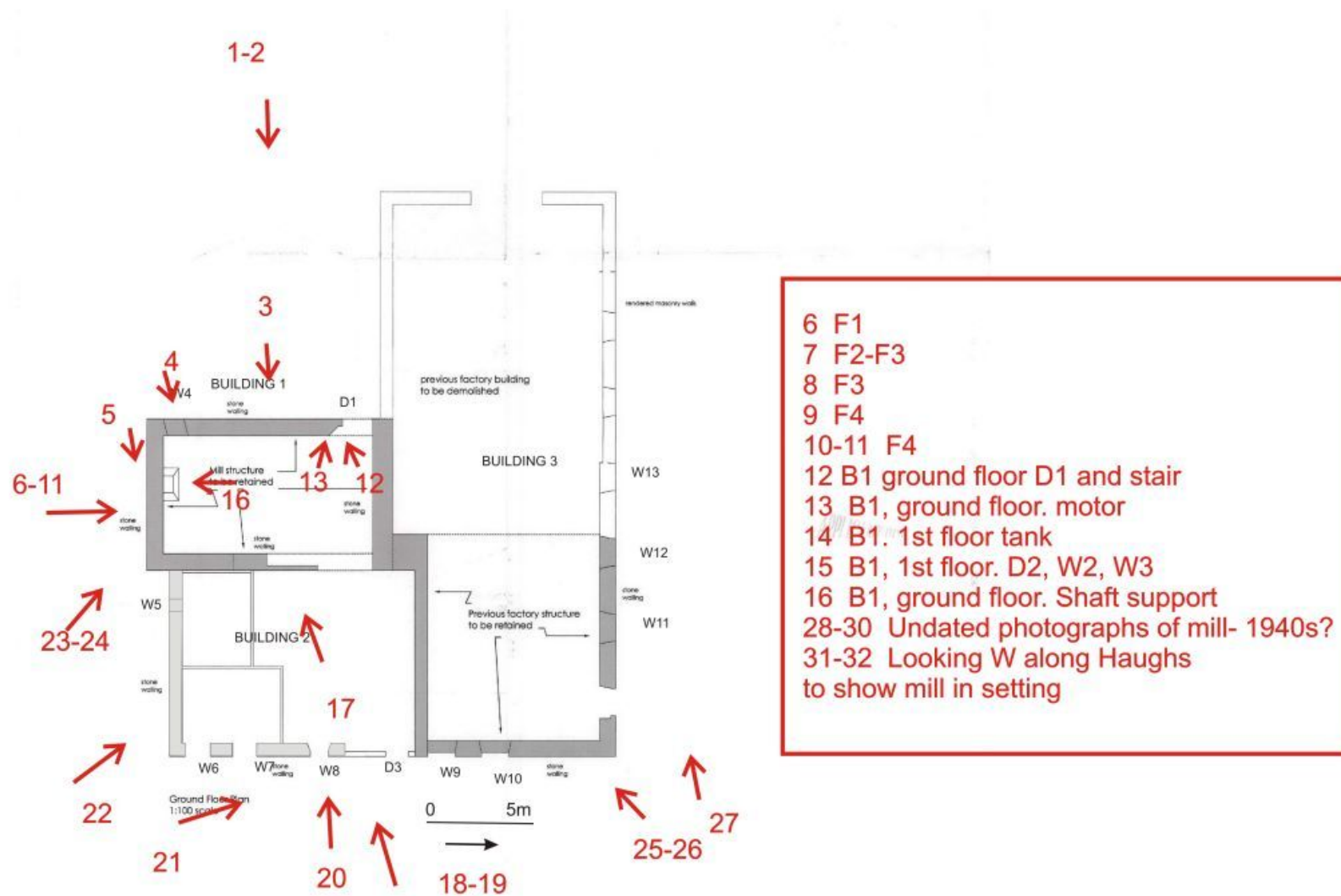
using the water power of the original flax mill. At this point much dust was produced. At Upper Mill the chopping machine must have been in B3 as the dust had been directed across into B4 (now converted to a house and not part of the present report). Some of the coarser dust was used as stuffing, the finer dust was used as manure. The chopped rags became a soft, short fibre that was either used for stuffing or mixed with some new wool to give a longer staple for spinning and then made into a range of cloths, including coats and blankets. Generally, from c. 1843 (Jubb, 1860) the woolen rags were scoured to remove dust, grease and the natural wool oils. At Upper Mill, this part of the process may have been the reason for the water tank in B1.

References

- Clapp, B W 2013 *An Environmental History of Britain*. Routledge: Abingdon
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- Hume, J R 1977 *The Industrial Archaeology of Scotland, the Highlands and Islands*. Batsford: London.
- Jubb, S 1860 Shoddy-trade: Its rise, progress and present position. Houlston and Wright: London. On-line:
<https://books.google.co.uk/books?id=vs4oAAAYAAJ&hl=en>
- Shoddy production <http://www.maggieblanck.com/Land/Shoddy.html>
- Statistical Account for Scotland. 1791-9. <http://stat-acc-scot.edina.ac.uk/link/1791-99/Kincardine/Bervie/13/4/>
- Statistical Account for Scotland. 1834-45. Parish of Bervie. <http://stat-acc-scot.edina.ac.uk/link/1834-45/Kincardine/Bervie/11/10>

Archive

A full set of photographs with the photo location plan (Illus 23) will be supplied to the Aberdeenshire SMR in Aberdeen and to the NMRS.



Illus 23 Photo layout plan