

TAYNISH MILL

AN ARCHAEOLOGICAL EXCAVATION



Data Structure Report

May 2012

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Summary

The short excavation has revealed several features associated with the late use of the Mill building, including surfaces, post holes and a beam slot giving some insight into the layout and later modifications within the ground floor of the structure. This will enable SNH to clear out the rest of the building without damaging the in situ deposits, making the building accessible to the public. The lack of roofing material (slates) and relatively low quantity of building rubble within the excavated trenches suggest the roof and much of the walls, along with the mill wheel had been removed. Apart from artefacts associated with the collapse/demolition of the structure, a midden located over the gear pit is likely associated with the last inhabitants of the building after it no longer functioned as a mill.



Wheel grooves worn in stone lined lade

Acknowledgements

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1. Introduction

This Data Structure Report has been prepared by Kilmartin House Museum for the Scottish Natural Heritage with respect to a 5 days excavation (5th-10th May 2012) at Taynish Mill, North Knapdale, Argyll. The work will enable the consolidation of the mill site and its future presentation to the public and was financed by Scottish Natural Heritage. The work was undertaken by a professional archaeologist who supervised SNH staff along with a group of volunteers over the 5 days. Tayvallich primary school was also involved in a site visit and participated in on site activities under the auspices of Kilmartin House Museum's education service.



Figure 1: Argyll and Taynish Mill Location



Figure 2: Mid Argyll



Figure 3: Taynish Peninsula

2. Site Location and Description

Taynish Mill (also known as Duntaynish Mill) is located near the western shore of Loch Sween on the Taynish peninsula (centred NGR NR 73788 84914, Canmore ID 311853, NMRS Site Number NR78SW 43). The mill is now part of the Taynish Nature Reserve managed by Scottish Natural Heritage. The mill building lies immediately below a steep natural scarp on more level ground that gently slopes towards the shore some 80-100m to the east.

The site has been subject to two surveys, one by the RCHAMS, published in 1988 (RCHAMS 1988) and a second by G. Douglas in 2001, both reproduced below in Appendix 2 and the following description of the mill is based on these and field observations during this work.



Taynish Mill c.1900

The building layout consists of a rectangular building that contained the mill and miller's accommodation at the NE and an attached drying kiln at the SW. The lower or ground floor was accessed by an arched loading-door in the NE gable with another door in the SE wall. A drawing of 1886 appears to show a window near the door on the SE while a second window at the S end of the same wall would have originally provided light to the SW end of the building. The remains of a third window was also discernable in the collapsed SW wall, giving light to this end of the building and the gear pit which occupies the SW end of the building. Little evidence remains of any features associated with the second or stones-floor apart from a stone landing accessed by a flight of seven stairs at the NW. One window is shown as lighting this floor in the 1886 drawing and a photo c.1900 shows what may be a door and a window in the SE wall. It is likely more windows existed within the other now collapsed wall at the NW. A third floor is also shown in the 1886 drawing, this lit by a dormer window, while a chimney is shown in the NE gable. A wheel pit and lade along with a supporting pier are attached to the building at the SW.

The drying kiln is rectangular in shape and was accessed by two doors at ground level, one in the NE wall and a second in the SW wall. Access to the upper drying floor was by a door in the NE, this accessed by a flight of stairs and there is also the remains of a door or possible window in the SW wall, at upper floor level. The kiln itself consisted of an inverted pyramid with a central flue heated by a firebox in the NW side. The body of the kiln is separated from the building walls by a surrounding insulation cavity, this bridged at the top by an inclined flagstone roof.

There is now no discernable trace of a second building at the NE of the mill building shown on the 1st Edition Ordnance Survey map (1865), in the 1886 drawing and mentioned in the RCHAMS description.

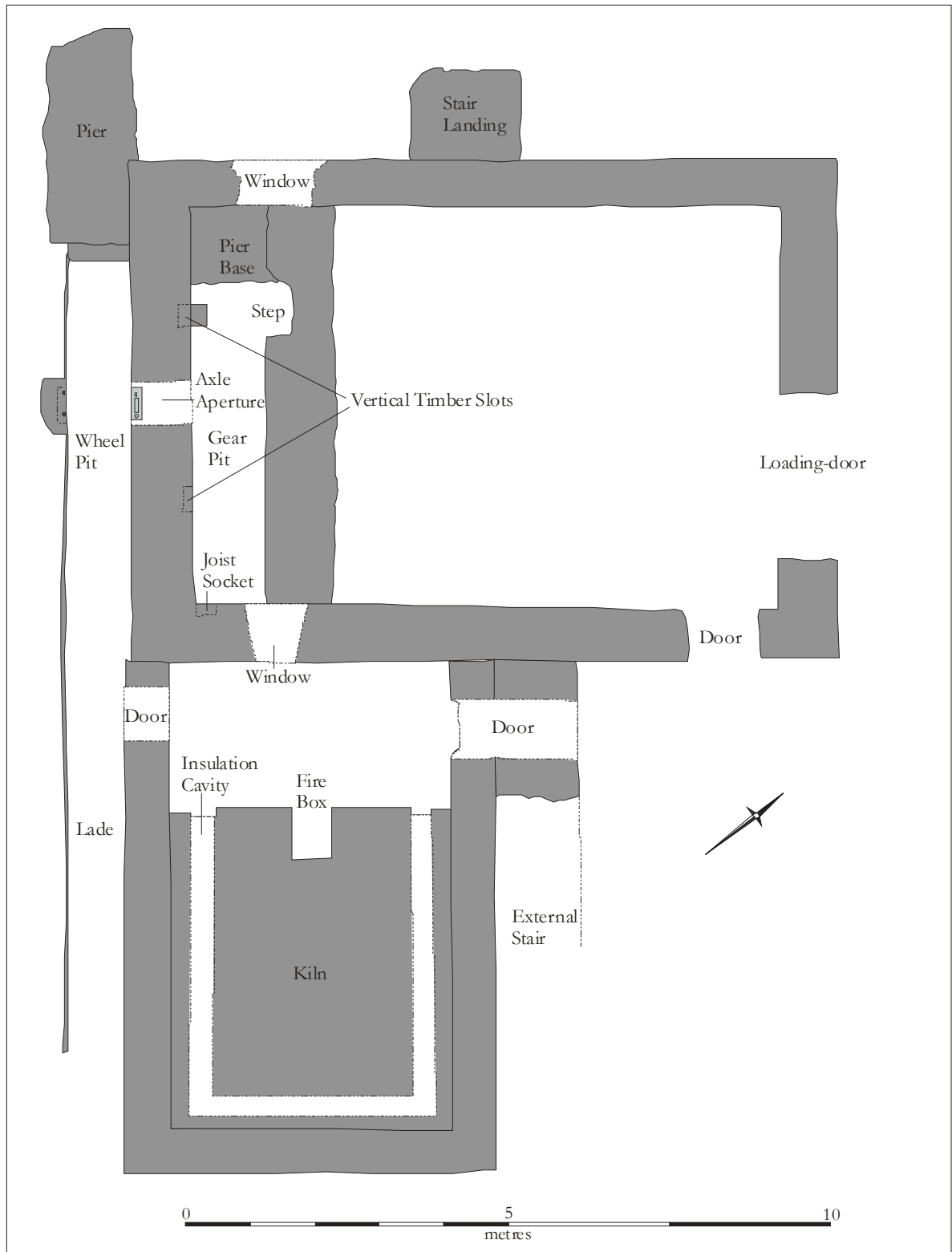
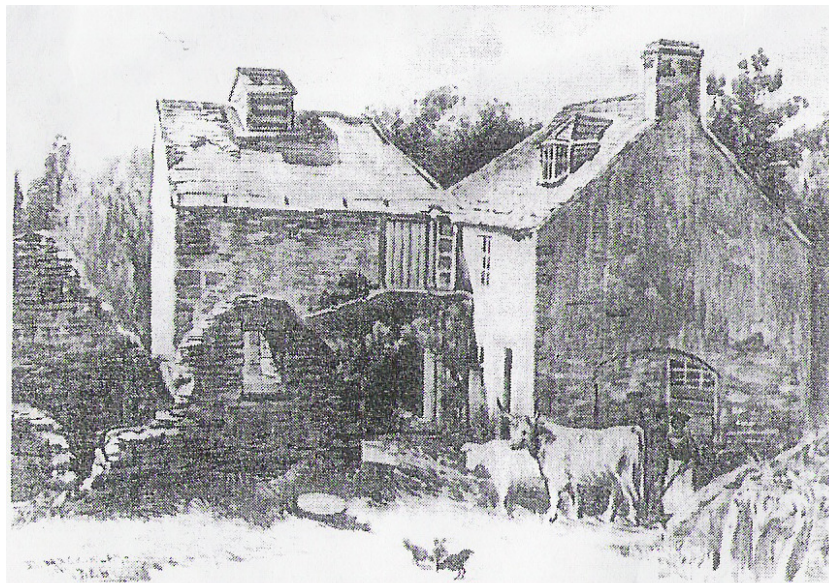


Figure 4: Ground Floor Plan

3. Historical and Archaeological Background

The historical background of the mill has previously been outlined in various publications (RCHAMS 1992, Pease 2010). The mill is first mentioned in 1724 in an obligation of the MacNeill's Taynish estate referring to the mills of Ross and Duntaynish. In 1779 a John MacNeill was 'miller of the milns of Ross and Taynish' and appears to be still there in 1790. Thereafter a series of tenants occupied the mill, Colin McIsaig 1792, John Turner 1796, Duncan Clerk 1803, Archibald Miller 1841, Dugald Gillies 1851 and Neil McIsaac 1861. Neil MacIsaac was still listed as a miller in the 1871 census. The MacDougalls appear to be the last occupants of the mill and were apparently still there in the 1890's, which contradicts the drawing dated to 1886 which shows much of the mill building in ruins.



Taynish Mill



Taynish Mill

Taynish Mill c.1886

Two limited excavations had previously been undertaken by Chris Floyd and some volunteers in 2001 and 2008, the results of these appearing below in Appendix 2. There has also been considerable consolidation work undertaken of the fabric of the building, particularly re-pointing on the kiln structure.

The site was listed by Historic Scotland in the Buildings at Risk Register, Reference No. 4410

4. Cartographic Evidence

The earliest map that might show the mill is General Roy's military map of Scotland (c.1747) that shows three buildings at the mill site but these are unnamed. The mill is marked on John Wilson's estate map of 1786/7 and also appears on George Langlands 1802 map of Argyll. Only when we get to the 1st Edition Ordnance Survey map of 1865 that 'Taynish Mill (corn)' is named and shows two buildings attached to field walls. By the time of the 2nd Edition Ordnance Survey map (surveyed in 1898) the site is shown as 'Taynish Mill (disused)'.

5. Aims and Objectives

As stated above the main aim of the excavation was to inform SNH on the presence of underlying archaeological deposits within the site so that remaining collapse and overburden within the building could be safely removed without disturbance of in situ deposits. This will enable the building to be consolidated and presented to the public as part of the Taynish Reserve.

6. Excavation Methodology

The main areas of excavation concentrated on the ground floor or loading floor with a small trench establishing the ground level within the kiln building. The work principally involved the removing of topsoil cover and mostly collapsed or demolition material within the targeted areas in order to gain an understanding of the preservation, and nature of the uppermost archaeological deposits. All recovered artefacts are listed in Appendix 3, with a brief analysis in Section 8 below. A photographic record of the evaluation was maintained and a full list of photographs appears in Appendix 4.

7. Excavation Results

Two trenches were excavated within the loading or ground floor of the wheel house. Trench 1 extended from the wall of the gear pit to the centre of the building while Trench 2 was located at the NE of the building around the loading bay door.

Three further areas were also examined, with a small trench, Trench 3, in the kiln building and Trench 4 located to the NW and outside the main structure. Soil was also removed above the presumed stair footings at the N of the kiln building.

Trench 1

The removal of the vegetation cover revealed a very mixed deposit of humic silt, gravel and building debris [001], this an accumulation of disturbed and demolition deposits after the disuse of the building. The rubble within this deposit consisted mainly of small to medium stones mixed with mortar suggesting that this was the discard after larger stones had been removed from the demolished walls. Numerous fragments of ceramic floor tiles were also present within this deposit, suggesting more useful and complete tiles had been removed or broken up within the centre of the building. Directly below [001] were the remnants of a tile floor, of which only the SE and W extents survived, these respectively [002] and [003]. It is likely this covered the whole internal floor area at the SW of the building, but as mentioned above had either been robbed or extensively broken up and subsequently removed.

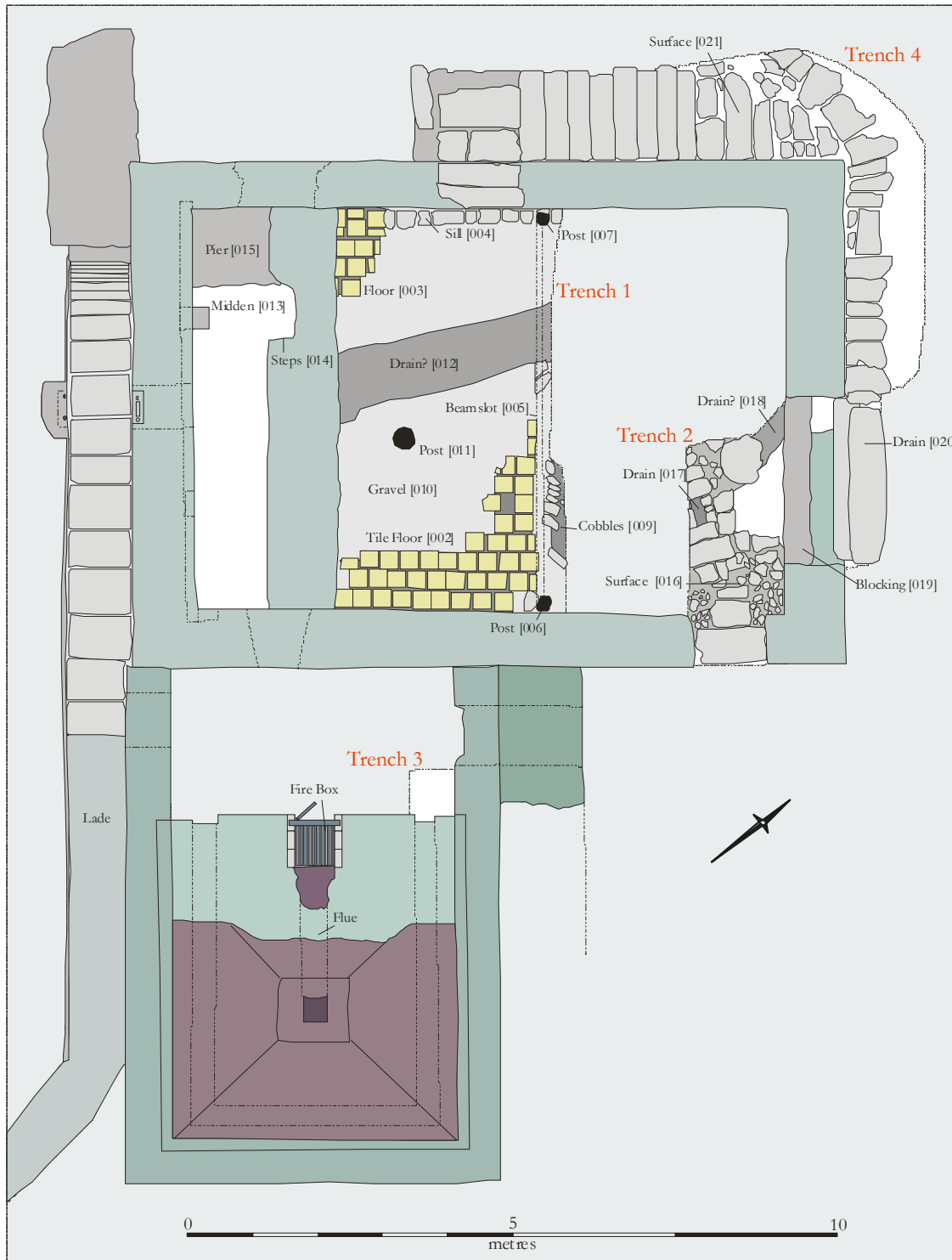


Figure 5: Excavation Plan

The tile (and brick) floor at the W had a distinctive rusting pattern on its surface, suggesting a box or container had previously lain on the surface. Apart from being incomplete the tiles within the floor were very uneven and slumped, suggesting they once overlay a now rotted suspended wooden floor as indicated by a dark brown loam [004] situated directly under the tiles. The presence of a wooden floor was also suggested by a sill or scarcement of stone slabs seen lining the inner face of the SW wall of the building [005]. Any such floor would also have required cross supports or sills within the centre of the building but this was so badly disturbed that none were identified. Delineating the edge of the tiled floor was evidence of a wooden partition, beamslot [006] and two opposing post holes [007] and [008]. To the N of the beamslot the S

edge of a cobbled surface was revealed [009], this likely similar or contemporary with the cobbled surface seen within Trench 2 ([016]). Below the tiled floor (and the rotted wooden floor) was redeposited gravel and cobbles [010] that appeared to represent a make-up or levelling deposit. Cut into this were two features, a post hole [011] that probably represented an internal support and a linear cut [012], which may be the remains of a ground drain.

Rubble was also removed around the base of a pier support within the SW corner of the building [015] and this revealed that this corner of the building and the gear pit had been used as a midden [013], presumably when the structure had stopped being a mill but continued in use as a house. Clearance of this corner also revealed the top of what is likely access steps down into the gear pit as represented by a gap in the internal gear pit wall [015]. The midden material continued down into the gear pit and was left in situ.

Trench 2

This was positioned within the NE of the building along the loading bay entrance, part of which had been previously investigated. This had shown that the loading bay door had been blocked and the footings of this blocking still remained in situ [019]. Excavation beyond the previous trench limits revealed the presence of a cobbled surface [016], this leading to a former door in the SE wall, as represented by a gap in the wall and a large threshold stone. Presumably running below this threshold and traced to the W was the line of a stone capped drain [017]. Also incorporated in the surface was what may be the remains of a broken quern. The previous excavation had removed much of any material from the loading bay entrance and this meant it was hard to gauge whether the absence of cobbling here was due to those excavations or earlier robbing, possibly when the door was blocked. The presence of the earlier excavation trench did allow the examination of deposits under the floor [016]. These for the most consisted of natural bedrock and the footings of the NE wall of the structure; however, there also appeared to be the NE edge of a rubble filled cut or depression [018]. What this represented was difficult to determine but given the presence of other drains in the area it is likely this may be an earlier backfilled or collapsed drain.

Trench 3

This revealed up to 0.7m of rubble and collapse and given the amount of ceramic and iron kiln floor fragments within the other rubble suggests much of this came from the recent clearance of the kiln. Below the rubble lay what was likely the original clay floor of the building [022]. A red ash clay deposit [023] lying directly over the floor was likely the remnants of peat fuel used in the kiln.

Trench 4

This involved the clearance of vegetation accumulation and rubble demolition material from around the outside of the building on the NW and NE. This revealed a well made surface leading up to the previously revealed stairs accessing the first floor or stones floor [021]. The surface continued from the foot of the stair along the NW side of the building, where it becomes less well made and turns SE along the NE wall. Running below the surface along this NE side is a drain [020] and it is possible this is a later addition involving the raising of the surface height. This perhaps explains the presence of what were likely two former threshold/lintel stones lying along the N side of the former loading bay entrance. The position of the stones makes it unlikely the loading bay still functioned after these were laid and while they give the appearance of steps they are more likely to be the S side and the capping stone of a drain, which was laid prior to the entrance being blocked.

8. Artefacts

A full list of the recovered finds appears in Appendix 3

Pottery

Overall 186 shards of pottery were recovered from the excavation trenches, the majority represented by late 19th Century and early 20th Century types. White stoneware storage vessels, glazed earthenware, with sponge and transfer decoration are well represented, with lesser quantities of Rockingham ware (teapots) and glazed redwares. The majority of the finds were recovered from the midden deposit [013] within the gear pit at the S end of the building.

Glass

87 fragments of glass were recovered, the majority consisted of bottle glass along with quantities of window glass, the later beneath what was likely a window aperture in the NE wall. Vessels in green, blue and brown glass were also present but in lesser quantities. As with the pottery the main bulk of the finds were retrieved from the midden deposit [013].

Metal artefacts

The bulk of the metal artefacts consisted of various fittings including nails, bolts, screws and hinges along with quantities of metal kiln plates. Other items included a cast iron foot, what is likely a boat caulker, a sickle fragment, two spoons and a fork.

Ceramic Tiles

A complete floor tile was retrieved from Trench 1, while larger fragments of pierced ceramic kiln tile were recovered from Trench 3.

Stone

A fragment of millstone was retrieved from Trench 1 along with a hollowed door socket.

Clay Tobacco Pipe

One undecorated bowl fragment was recovered from the midden [013].

9. Discussion

This excavation along with the results of previous work has given a number of insights into the last use of the mill and its later use as a house. The presence of tiled surface indicated that this was the last floor within the S end of the building this replacing an earlier wooden floor. The N end of the building around the entrances was equipped with a cobbled surface containing a drain. These surfaces were effectively divided by a wooden partition that may have demarcated specific work areas, the N end obviously used as a loading area while the S area may have been used for collecting and bagging the milled grain? The drain within the cobbled surface along with what may also be a drain running down the centre of the building suggests a problem with water run off, possibly not surprising given that the mill is located at the foot of a steep natural outcrop. This may have been an ongoing problem and is perhaps reflected in the construction of an external drain along the NE side of the building, this likely constructed after the blocking of the original loading bay door and reusing what may have been the original threshold stones of the entrance. It is possible that this lower part of the building was effectively abandoned when the mill went out of use, possibly becoming a byre, given the extensive disturbance seen down the central area of the building and the presence of a midden in the gear pit, this material possibly entering the building through the window at the SW. If so the midden may have derived from the tenants who still occupied the mill after the 1870's.

One thing that became apparent from the work is that much of the structure appears to have been recycled. It is reported that the water wheel itself was removed in the late 1950s/early 1960s

by scrap merchants. Prior to this the roof slates appear to have been removed, as there was little evidence of any such roof collapse, while lying immediately above the surviving floor surfaces were numerous small broken slate fragments no doubt the detritus deriving from the removal of the slates. The drawing of 1886 shows a partially collapsed roof and possibly just the surviving wooden sarking still in place at the NW end of the structure, suggesting the roof had been removed prior to that time. Some doubt however must be cast over the supposed date for the 1886 sketch as the mill was supposedly inhabited until 1899. The relatively low quantity of stone along with the absence of larger stones amongst the internal rubble cleared from the internal areas of the mill suggested that much of the original wall material had been removed especially from the NW, NE and SE walls.

10. References

Gainford, V. c.1984 Tayvallich and Taynish p.22

Langland, G. 1801 George Langlands. (National Library of Scotland. EMS: s.326)

Ordnance Survey, 1881/3, 1st Edition 6" map, 'Argyll', Survey 1868, Sheet CLXIX

Ordnance Survey, 1902, 2nd Edition 6" map, 'Argyll', Survey 1898, Sheet CLXIX.NE

Pease, J. M. 2010 Taynish, A History of the Ross Estate, Glendaruel

RCAHMS 1992 The Royal Commission on the Ancient and Historical Monuments of Scotland. Argyll: an Inventory of the Monuments: Volume 7: Mid-Argyll and Cowal, Historic and later Monuments. No. 252, pp 500-501 Edinburgh.

Roy's map c1750. Military Survey of Scotland (original in the British Museum)

Wilson, J. 1886/7 Plan of the Estates of Taynish, Ulva & Danna.

Appendix 1: Context Descriptions

[001] Vegetation cover and rubble overburden. This consisted mainly of light to dark brown silty gravel with frequent mortar fragments, moderate stone rubble along with tile and brick fragments.

[002] Floor. Consists of square light grey yellow ceramic tiles measuring 0.30m by 0.30m by 4cm



Floor [002]

[003] Floor. Consists of square light grey yellow ceramic tiles as described above, the floor also incorporates some bricks in the surface these measuring 0.24m x 0.11m x 60mm. The upper surface of the floor has a dark red brown ferrous rust stain suggesting a box or container sat here.



Floor [003]

[004] Layer. Thin layer of dark brown humic gravel, probably the remains of a rotted wooden floor.

[005] Ledge. Length of exposed sill or scarcement running along the NW wall. Consisted of a line of levelled stones measuring 0.30m wide.



Sill [005]

[006] Beam-slot. Linear void measuring 0.13m wide running across building, traceable at SE but less apparent at NW.



Beam-slot [006]

[007] Post hole. Possible post hole/position. Not excavated.

[008] Post hole. Possible post hole/position. Not excavated.

[009] Surface. Comprised of roughly lain cobbles (maximum size 0.36m x 0.24m)

[010] Layer. Light to mid red brown silty gravel with large to medium cobbles. Not excavated

[011] Post hole. Possible post hole/position. Not excavated.

[012] Drain? Linear depression/cut filled with mid to dark brown silt. Not excavated.

[013] Layer. Dark grey humic silt and gravel, includes moderate glass and pottery shreds.

[014] Steps? The upper extent of a likely access step into the gear pit built of roughly coursed rubble blocks (maximum size 0.47m x 0.40m x 0.20m).



Step [014] in gear pit wall

[015] Pier Base. Rubble built foundation of internal floor support. The main column measured 0.50m by 0.52m, stepping out at the base in successive steps by 0.5m, 0.55m and 0.3m over a height of 0.33m.



Pier/pillar base [015]

[016] Surface. Consisted of closely set water rolled cobbles and schist slabs running either side of drain [017].

[017] Drain. NW/SE aligned stone built drain. Comprised two rows of stones forming the sides of a channel 0.22m wide and 0.12m deep overlaid by a schist capping, forming the floor surface that corresponds to [016].



Surface [016] and Drain [017]

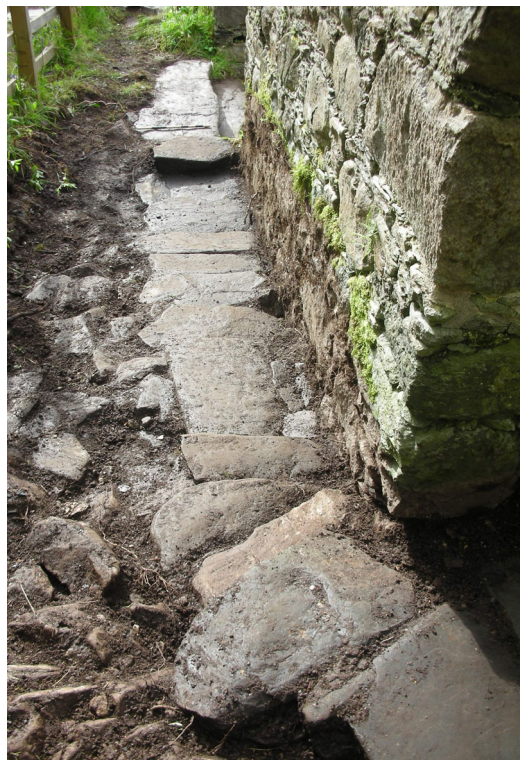
[018] Drain? Linear depression/cut filled with mid to dark brown silt. and frequent schist rubble slabs

[019] Wall. Stone and mortar footings of former entrance blocking standing 0.56m high.



Blocking [019] with reused millstone within surface [016] in foreground

[020] Drain. Line of capped drain running along the NW side of the building, consisting mainly of large to medium schist slabs.



Drain [020]

[021] Surface. Stone slab surface running up to stairs along the NE side of the building.



Surface [021]

[022] Floor. Red brown silty clay.



Clay floor [022] Trench 3

[023] Layer. Mid red brown to pink silt, including occasional charcoal fragments. Possibly the remains of peat fuel rake-out.

Appendix 2. Previous Work

2.1. Taynish Mill, RCHAMS

NR 737849 June 1985 The overgrown ruin of this corn-mill is situated in a sheltered hollow 80m from the NW shore of Loch Sween and 2.1km NNE of Taynish House (No.182). It is reached by a track branching from the Taynish estate-road 330m to the NNW, which in its final descent to the mill is revetted on the SE by a massive wall up to 4m in height. About 130m N of the mill this track and its NE boundary-wall formed a low dam blocking the marshy outflow of Lochan Taynish; the wall incorporated a sluice-gate, from which the mill-lade flowed in a lintelled culvert below the track.



Mill dam



Lade sluice gate

The mill is not identifiable in 17th-century documents relating to the Tainish estate. An obligation dated 1724 refers to the mills of Ross and Duntaynish, and the two mills were associated in 1779, when John MacNeill was 'miller of the milns of Ross and Tainish'. It was still in operation in 1867, when a 'neat slated dwelling house and Corn Mill attached' were described. It is said to have been abandoned about 1886, and a drawing of that date shows that the kiln had already lost most of its roofing-slates. The original building was very similar in layout to that at Aironn (No, 227) but a little larger, measuring 11.1m from NE to SW by 7.7m over rubble-built walls varying from 0.7m to 1m in thickness. In the NE gable-wall there was a loading-door 2.5m wide, whose arch has now collapsed; this is shown as blocked in the 1886 drawing, which also indicates a doorway, now vanished, at the adjacent end of the SE wall.



Loading-door arch spring



Pier

The same source shows that the NE gable was surmounted by a chimney, presumably serving the upper floor and a loft above it which was lit by a dormer-window. Most of the masonry of the upper floor has now collapsed, but a stone-built external stair giving access to this level remains outside the NW wall. The wheel-pit outside the SW end-wall formerly held a pitchback wheel about 4.1m in diameter. A massive rubble-built pier which supported the lade at the upper end of the pit rises about 1m above the highest point of the wheel's perimeter, and the water evidently flowed down an inclined trough.

The axle passed through a 0.7m circular aperture in the end-wall, which retains some iron bolts for the axle-bearing, and on the SE perimeter of the wheel there is a recess for access to the rim, whose lintel is a truncated runner-stone with a four-winged rind (cf. No. 631. Latterly the wheel was evidently fitted with a rim-gear, driving a cast-iron spur-wheel connected by a shaft to a small bevel-gear inside the mill, both of which remain intact. The stone-floor was carried on a timber framework supported by vertical slots in the end-walls and sockets in the side-walk as at Aironn (No. 227), and additionally by an internal masonry pier in the NW angle.



Vertical timber slots, axle hole and upper gearing

The gear-pit, 1.2m in width, was originally lit by a window in the SE wall, but this was subsequently enclosed in the passage serving a large drying-kiln added to the SW half of that wall. This kiln, which originally rose to the same height as the main building, measured 8m from NE to SW by 5.7m over 0.9m walls. Doors in the NE wall at both levels, the upper one reached by a stone forestair, led into passages or working-areas between the kiln proper and the mill.

The stone-built fire-box was separated from the outer walls by an insulating-cavity about 0.35m in width and roofed with inclined stone slabs, but its interior is obscured by debris and no details are identifiable.

The slated roof appears from the 1886 drawing to have been hipped at the NW, adjoining the mill, and gabled at the SE, and it carried a central louvred ventilator. The miller's dwelling referred to in 1867 (*supra*) may have been included in the upper floors of the mill-building, with their fireplaces. A single-storeyed building a short distance E of the mill is shown in ruins in the 1886 drawing and only slight traces are identifiable.

(RCHAMS 1992) No 252 p 500-50



Ground floor door into kiln



Insulating-cavity

2.2 Taynish Mill, G. J. Douglas 15/02/01

The purpose of this report is to describe the mill layout and the function of the remaining fittings. It should be read in conjunction with the attached itemised site plan. The basis for my interpretation is examination of the physical evidence in the context of experience of analysing and graphic recording of grain mills over a 2 year period. A study of the field work notes, drawings, photos and articles now all held at National Monuments Records in Edinburgh, could give more details but has not been undertaken as part of this exercise.

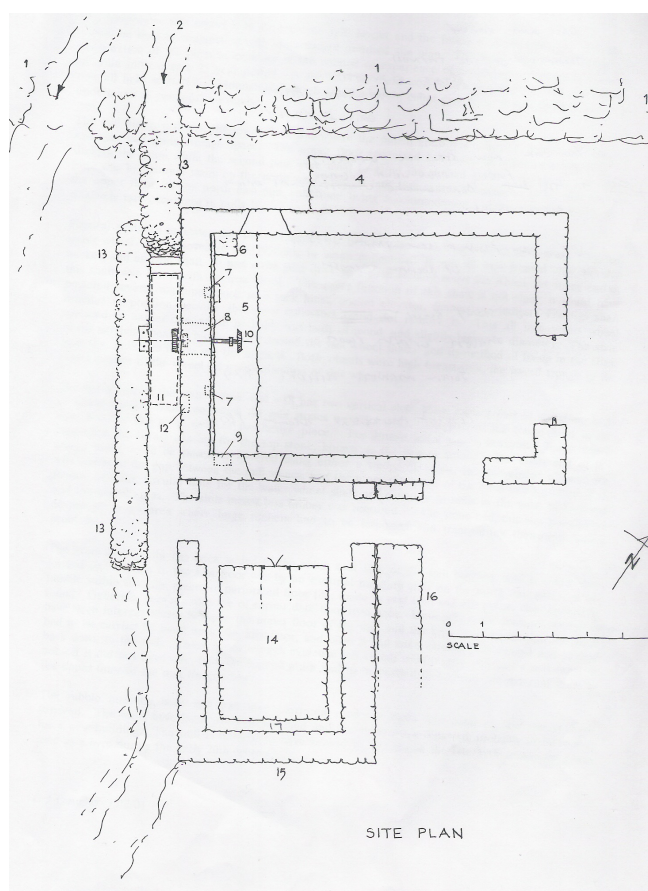
The mill had two floors; the lower floor was where the milled grain was collected, graded and bagged and also had some storage space. The upper floor contained two pairs of millstones, one pair for shelling the grain while the second pair were used to grind the shelled grain. Access to the upper floor was by external stairs on the north west side.



Stair landing at stones-floor level

A late 19th century illustration shows that part of the upper floor, at the north east end, contained living accommodation - in my experience this is a relatively rare occurrence in mills. Physical evidence indicates that the mill wheel has been replaced at least once in its history. The last water wheel was removed in the 1950/60s by scrap collectors. It was all iron framed with wooden buckets and an iron shaft. It had a rim gear drive to a shaft located above the wheel, the inner end of this shaft was fitted with an iron bevel. The exact function of this shaft is not clear, it could have powered several machines, such as a sack hoist, bucket elevator, fanners or riddles. The top shaft remains in position because the scrap collectors could not remove it. This all iron water wheel replaced an earlier one, which probably was built of wood, and slightly bigger in diameter. The style of the surviving bearing block, which carried the last wheel shaft, and its method of fixing in the shaft hole also indicates it was not the original. Both wheels were high breast-shot, the paved trough in the lower quarter of the wheel pit is an indication of this wheel type. The inner face of the water wheel end wall has two vertical slots; these carried part of the stone bed. (a heavy wooden frame on which the mill stones were located). The part of the frame fixed in the slots was for the pivot ends of the bridge piece. The bridge piece was a horizontal beam which supported the thrust bearing for the top stone, known as the runner stone. The outer end of the bridge piece could be raised or lowered using either a wedge or screw, this movement allowed for adjustment in the gap between the mill stones, and therefore the grade of the meal being ground. This feature and the circular hole for the water wheel shaft are common in mills in the west of Scotland and the island areas. The slots meant less timber was required for the stone bed, this was possibly an advantage in an area where large timbers had to be imported and transporting them was also a problem. The grain drying kiln has been added to the south east side of the mill building, and is simply butt jointed on.

Access to the kiln floor was by an external masonry stair on the north east side. In the tumble within the kiln, pieces of perforated floor tile, made of cast iron and red plastic clay, have been found. Generally ceramic tiles are of earlier date than iron ones. Unusually there does not appear to have been internal access between the upper floor of the mill and the kiln. This meant that the grain had to be carried by hand up to the kiln floor, and once it had been dried, it was bagged and carried back down to the mill. There is not enough evidence left to tell whether the mill had a sack-hoist or not - if it did not have one, then the bagged grain had to be carried by hand up the external stairs to the upper floor of the mill for grinding. The rubble masonry built mill had lime mortared rendered faces and parts of this render have survived. The walls have been partly demolished and the stone work removed, probably to be reused for a new building. The mill is thought to have ceased to operate in the late 19th century and was used as a byre during the early 20th century.



Description of items shown on the site plan.

- 1 Rock outcrop along the back of the mill, very straight and even face with slight slope.
- 2 Lade from mill pond, and just to the west is the lade by-pass. In fact where the water currently runs
- 3 Masonry pier that carried the pentrough which directed the flow of water to the water wheel.
- 4 External rubble masonry stairs to upper floor of mill.
- 5 Gear pit, housed the gear drive for the millstones.
- 6 Masonry pillar about 0.55m square, possibly carried the end of the large section timber cross beam that formed part of the frame that carried the millstones.
- 7 Slots in end wall face, 2.8m centres, 0.32m wide, 0.8m deep, 1.35m long and housed part of the millstone support frame (also called the stone bed).

- 8 Circular hole in end wall for water wheel shaft, about 0.7m diameter, base of hole has been altered when a replacement of the original water wheel was carried out. The hole houses an iron plumber block which is bolted to the later inserted masonry block.
- 9 Socket in side wall, 0.46m high, 0.28m wide, 0.5m deep, for the large section timber cross beam that formed part of the stone bed.
- 10 Iron shaft with iron spur gear on end over water wheel, driven by rim gear over the water wheel, inside the shaft has an iron bevel gear fitted on its end.
- 11 Site of water wheel, last wheel was all iron framed with wooden buckets and rim gear drive, high breast shot type, about 3.6m diameter.
- 12 Recess in outside face of wall, with broken millstone as a lintel, top of hole in line with the centre of Item 8. This gave access to the water wheel rim when repaired and maintenance were done.
- 13 Rubble masonry pier with the outer bearing pad for the water wheel still visible.
- 14 Drying kiln fire box, 0.75m wide, iron doors and frame
- 15 Rubble masonry grain drying kiln, butt jointed to mill building.
- 16 External rubble masonry stairs to drying kiln floor, stairs butt jointed to kiln and mill walls.



Ground floor door of kiln



Ground floor window in SE wall

2.3 Initial draft, compiled by Chris Floyd. Work carried out at Taynish Mill, Argyll, July 2001

Draft report of 3 day exploratory excavation; Taynish Mill, Argyll.

This was initially set up to try and incorporate volunteers, but these did not materialize, the three day operation was therefore carried out by 2 members of SNH, and Chris Floyd.

The initial focus was to open up the area around the exposed door to what appeared to be a firebox for the kiln, and to try and ascertain a floor level in this working area; Over the three days this was the continued focus with occasional fragments of tile coming out, along with large quantities of rubble masonry and soil.

1) Of major note within this rubble removal was the access gained to the firebox. Once access was made in here the ash pit area was totally cleared, showing the depth of grate, and as excavation continued the grate became visible - in one piece, and the second door to the firebox was excavated from within the firebox itself. The doors to the firebox are cast and of heavy form, both have corrosion, but this could be removed/reduced through restorative techniques.



Fire box

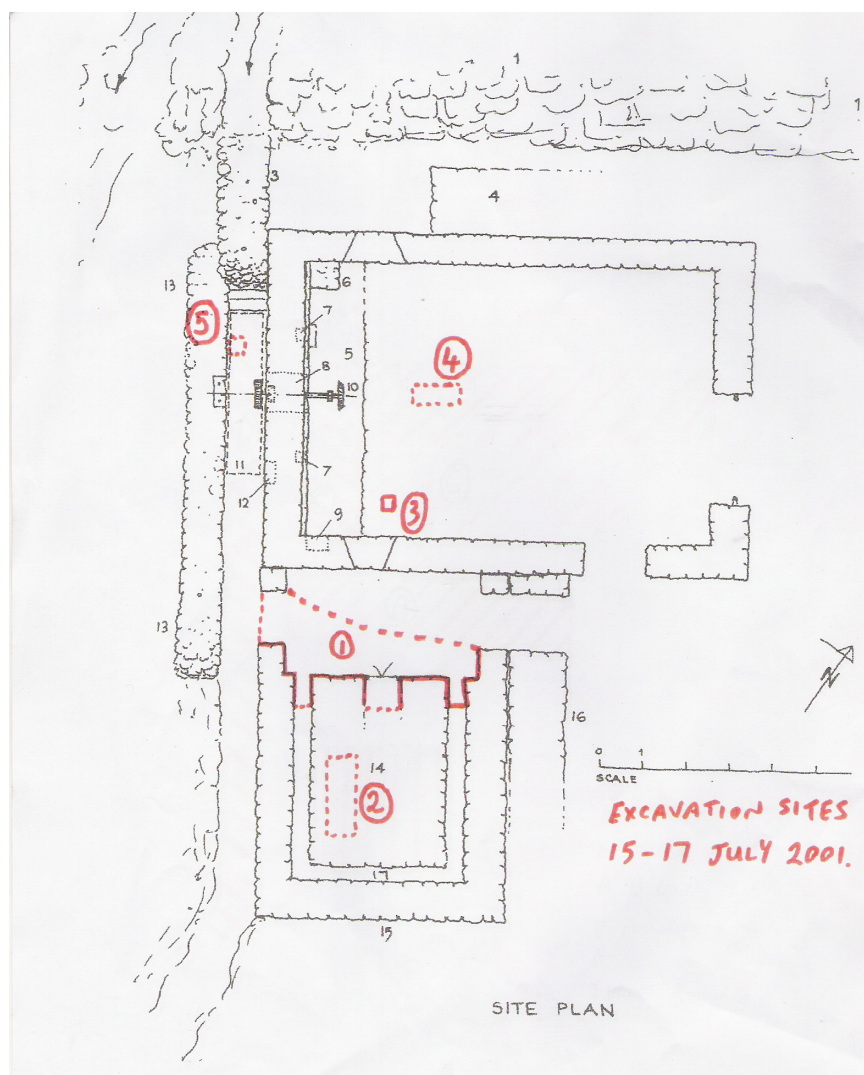
The RH door is seized in place, and it may be of some concern that someone will come along and try and force this to move; possibly resulting in breakage at the hinge. The LH door has one hinge bracket missing, a new one could be fashioned by a blacksmith for replacing in its original position. The infill into the firebox was removed and cleared overhead, this has exposed a very good example of a brick lined firebox, leading away into a tapered flue within the kiln, This merits further examination, possibly from above, Exploratory trenches were also dug in other areas of the site, largely for future recommendation; (numbers are taken from 'excavation sites' map-marked in red).

(2) To investigate the area of the kiln floor a small inspection trench was dug from above, this gave enough interest to warrant a larger trench to be cleared down the SW side of the upper level, with enough positive evidence to show the continuation of the beveled side to the kiln to match in with the side of the firebox, and to show the existence of several cast plates that the grain would be dried upon. Two of these plates were retrieved, with several more left in situ at present. This is definitely an area for further investigation.

(3) In the corner of the gear pit; rubble infill, possibly overlying a stone floor, the top of the wall to expected ground level is 1520 mm. which will have a dig depth of between 300-600 mm.

(4) A shallow trench (200 mm deep) of approx. 800*1600 mm was taken out in the line of the axle hole this has potentially revealed a cobbled surface, or continuation of the gear pit retaining wall, and merits further exploration. The floor overall may be a cobbled mix, and is worthy of debris removal, although this does seem to be built up in the N/NE end of the mill. Clearance of the mill floor area may reveal mill stone remains, and pivot points for gearing.

(5) External to the building in the base of the wheel pit, assuming a max. radius of the wheel of about 2 metres, there is a build up of 500/600 mm of rubble/infill, on the base of the pit, a quick exploratory dig showed this to be reasonably easy to remove, although running water from the stream will need to be assisted through this area, so as not to become a nuisance, it has a natural slow run through here already. The exploratory pit suggests that there may be a base of stone flags in the bottom of the pit, this would be very useful to have confirmed.



Over the duration of our 3 day investigation a great deal has been accomplished, a great deal of infill was removed, ground level was re-established by the firebox, showing a packed clay surface, the firebox itself was excavated to a level not seen in a great number of years, and potential sites were established for the future.

There is now probably more cause for continuing this project and further excavation, the site will act as a further draw to tourist, and locals, and reduce pressure on some of the more fragile sites in the vicinity.

Future areas to focus on would be; remove further infill from outside the firebox to clay floor level, excavate the drying kiln of all infill and uncover remains; hopefully enabling a clearer visual interpretation of the operation of this, this may involve some stone remedial work/removal from in situ clearance of the water wheel pit, restoration of small water supply through it clearance/excavation; a) gear pit, b) mill floor.

2.4 Excavation work carried out at Taynish Mill in the Spring of 2008, Chris Floyd

Following a two day excavation at Taynish mill in the Spring of 2008

Initial comments;

The mill has been left untouched for about 5 years.

It has previously undergone a small scale excavation,

- this previous work centred on the kiln area, both within the kiln, and at the hearth side.
- Some provisional work had also been carried out within the wheel pit (internally within the mill), and also externally where the water wheel had been.
- these areas have suggested the need for further excavation.

Excavation areas were identified as;

- the area the pit wheel occupied
- the water lade, where the mill wheel was located
- the main entrance area of the mill
- the external steps adjacent to the mill

Progress and summary of finds with 7 people on site on day one, and 4 on day two, then good progress was made. Various bits of metal were uncovered, mainly bits of plate from the kiln drying floor, along with a couple of bits of paddle wheel rim. These cast plates from the kiln are additional to well over a dozen which have been placed in store from previous work. The paddle wheel rim, suggests a series of castings, held together with metal fasteners, and with the buckets constructed from timber. Pieces of pottery, which may be later additions, were also found, along with remains of leather harness, A small piece of rock, with saw teeth marks, almost certainly created from the rock passing into a mechanical saw was also recovered. This may suggest that there was a belt driven saw on site at some stage. A section of millstone was also recovered from the area of the pit wheel, approx 1/8th of one of the stones. Findings and recommendations from this project;

Mill entrance

The entrance to the mill still provides an area of investigation, there is something puzzling about the visible evidence, which suggests a 'stepping down' into the mill, and it would do well to excavate outside this entrance for further signs, as well as doing further work on the entrance itself. The size of the door opening here is much larger than that required for a person, but if the entrance is stepped down, this will stop a cart getting close, and also may have led to some form of drainage scheme externally, to avoid runoff coming into the building. The evidence of the door hinges below the apparent level of stonework both internal and external of the door entrance is still a puzzle unsolved. The decisions about the main entrance would be strengthened by excavation around the outside towards the external steps.

External

The external steps. It was excellent to uncover so many in such a good condition, and it makes a very visual impact for people coming down the path. It is my view that these should be protected from further decay by stabilising the back face of this area. This would then be an excellent potential area for directing visitors, with the addition of restraining barriers, preventing falls, and

the instillation of interpretation boards. The top of the steps providing the best view of the internal areas. From previous investigations, it would seem that these steps were used to access the first floor of the mill.

Water lade

The clearing out of the water lade has shown great results, There is now a very visible man made channel, with a substantial stone flooring to the channel, and some of the rocks have wear marks from the turning of the wheel. This being useful in determining the size and width of the wheel, From the evidence still available, there seems to be two distinct 'expert views' held about the type of wheel in operation here, being either pitchback, or high breast wheel. Both operating the wheel in an anti-clockwise fashion. It's my aim to return to the mill site with ladders and tape measure to further investigate the metal gearing still in situ, and hopefully get a accurate measurement of the wheel size

Internal

The wheel pit is proving interesting, but hard manual labour, there is substantial debris in here, but it has provided both pieces of millstone recovered, suggesting that the stones were in place when the upper floor collapsed, and the stones dropped through. Interesting is that the two pieces recovered are from different stones. This area would benefit from either further investigation from a small team, or the use of a mechanical digger, with experienced operator, and close inspection as the work was carried out. The end result should be a fairly well preserved wheel pit, and maybe more pieces of 'mill machinery'

Outcomes and futures

From this work, in a perfect world, devoid of budget restraints, this would be some considerations :-

I believe that this is a great attraction into this area, and the more that can be done to enable the visitor to appreciate this, and gain a better understanding of what went on here, then so much the better.

1) As the visitor approaches down the hill on the path from the car park, the natural point will be to head towards the external steps,

- build up the area beside the external steps as a visitor viewing platform,
- include interpretation boards

By allowing visitors to access the top of these steps, they gain one of the best available views of the mill and kiln area, if this was supplemented by good interpretative methods, then the visitor experience will be great.

2) Free the kiln area of vegetation

- this area was completely cleared 5 years ago.

3) Remove vegetation from the wall with the external steps, and stabilise as necessary

4) Remove all the infill debris within the mill, and the area around the kiln hearth

- Some of this work could be achieved with mechanical digger, however, most will probably need to be removed by manual labour.

5) Remove the debris from outside the kiln wall, which is now blocking the remains of steps,

- With the debris removed, there may be a way of having visitor access through the area next to the hearth.



Kiln from NW



Drying chamber

Extract from *Tayvallich and Taynish* by V. Gainford

I turn here to the late Mr. Thomas France who, at the age of 90, came over from Canada where he had made his home, to revisit old haunts. Among other calls, he made one here, and I asked him to set down his memories of those old days, which he did in a letter dated March 1974, from which I quote. As a small boy, and for health reasons, he had been sent from Glasgow to live with his grandmother MacDougall, at the Taynish Mill. 'We walked', he writes 'to school from the Mill or Gatehouse' (where the MacDougalls moved at some point) 'and took with us a piece for our dinner. Mrs. MacCalman (the teacher's wife) 'supplied us with milk to drink with our piece and in good weather we ate outside with our piece in one hand and the glass of milk in the other, and tame ducks around us nibbling at our bare toes. We went barefoot in summer, and I wish my feet were as good and as tough as they were in those days. We ran most of the way to school and home again, and once I nearly stepped on an adder lying stretched out on the road by the freshwater loch. My bare foot was coming down on it when I saw it and barely had time to swerve and leap aside. Mr. France wrote that his 'Grandmother MacDougall did not think that man or boy was properly dressed unless he wore the kilt', and he thinks that this saved his younger brother's life when as children they were chased by a bull in a field near the mill.



Lade wall and pier

The elder boy reached the gate in time but the younger was not quite quick enough; the bull caught his kilt on a horn and tossed him over. He suffered no more than bruises and, no doubt, a good fright. Mr. France remembered the celebrations for the return of the owner of Taynish from the Boer War. Flags were arranged on a string across the road near Gatehouse, and he was sent up a tree to fasten one end, the branch being not strong enough to hold a grown man. I had asked him about the kind of food they had, and he remembers beef occasionally, and that once his uncle slaughtered a sheep, but thinks that they depended mostly on what they got from the sea. They would put nets out from the shore near the mill, where in later years we did the same thing, catching cuddies, and occasional sea trout or mackerel, and crabs. Mr. France also remembers the horse drawn coach which plied from Tayvallich to Lochgilphead before the motor bus was introduced. There were two drivers, he writes, Mr. MacCulloch and Mr. Tyre, and adds that there was 'quite a bit of rivalry between them'. There was one shop in Tayvallich then, and he does not remember a postal delivery, and thinks most people collected their mail from the post office.

Appendix 3: Finds List

Contex No	Trench	Material	Number	Notes
001	1	FE	7	foot of cas chrom, boat caulker? Sickle fragment, spatula, 2 matching spoons, 1 fork
001	1	ST	1	hinge stone
001	1	CBM	1	floor tile
001	1	ST	1	millstone fragment
001	1	GL	13	3 coffee jar, 5 small clear vessel, 4 clear blue vessel
001	1	PT	4	1 Rockingham ware , 3 earthenware
001	2	GL	4	1 complete bottle, 2 bottle base, 1 bottle body
001	2	PT	3	1 earthenware, 2 transfer print
013	1	GL	60	dark green; 3 bottle bases, 1 neck, 11 body, light green; 4 body, clear; 1 screw neck, 1 body 33 window, brown; 1 base, 1 body, opaque; 3 body
013	1	PT	179	transfer print; 47 including two base stamps 'ALE P..' and bell in wreath, glaze white earthenware; 68, one with 'James Keil..' 'Marmala..', sponge decorated; 32, Mocha decorated; 4, Cobalt blue moulded rim; 4, hand decorated flowers; 6, fern moulding; 2, rilled cobalt: 1, rib moulded: 1, glazed red earthenware; 15, one slipped decorated, four cream glaze, 10 manganese glaze, stoneware; 3, one with 'Brew... Greenock Ap...', Rockingham ware; 6, brown slip decorated bowl; 2, ginger jar lid?; 1
013	1	CU	1	copper ring
022	3	CBM	3	kiln tiles

Appendix 4: Photo List

Number	Context	Description	From
1		drying kiln lower NE door	NE
2		SE window	S
3		Fire box	above
4		drying kiln	N
5		drying kiln	above
6		Trench 1	SE
7		Door/window	E
8		Flue	NW
9		drying kiln lower SW door	NE
10		gear pit	NW
11		SE corner	NW
12		drying kiln	NW
13		external stair landing	W
14	021	external stair and surface	SW
15	021	external stair and surface	NE
16	020	external drain surface	NW
17	020	external drain surface	SE

18		loading bay arch spring	SE
19		loading bay SE side	NE
20		loading bay SE side	NE
21	019	blocking	NW
22		kiln vent	NW
23		kiln vent	NW
24		kiln vent and floor	NW
25		fire box	N
26		fire box	NW
27		fire box	NW
28		lade pier	NE
29		working	
30		working	
31	002/003	tile floor	above NW
32	003	tile floor	above NW
33	002/003	tile floor	above NW
34	003	tile floor	above NW
35		sill support	above NW
36	002	tile floor	above NW
37		iron floor grate	
38		iron floor grate	
39		SW wall and pier	S
40		lade and pier	SE
41		lade	SE
42		drying kiln lower SW door	SW
43		inspection hole SW wall	SW
44		wheel axle hole	SW
45		wheel axle hole	SW
46		SW wall and pier	SW
47		pier	SW
48		SW corner	S
49		drying kiln walls	S
50	014, 015	internal pier and gear pit step	SW
51	014	gear pit step	SW
52	015	internal pier base	NE
53	019	door blocking	SE
54	016, 017	drain surface	NW
55	016, 017	threshold	NW
56	016, 017	surface, drain and threshold	NW
57	016, 017	surface, drain and threshold	SE
58	002	tile surface	NE
59	004	beamslot	NW
60	004	beamslot	NW
61	005	sill support	NE
62		SW wall internal	NE
63		lade and axle hole	S
64		SW wall internal	NE
65		beam support	NE

66		SW wall internal	NE
67		axle hole	NE
68		axle hole	NE
69		working	
70		working	
71		working	
72		working	
73		working	
74		working	
75		working	
76		iron fittings	
77		building pre ex	
78		stair foundation	
79		stairs	
80		lade pier	
81		kiln house pre ex	
82		gear wheel	
83		axle hole	
84		SW wall external	
85		lade culvert	
86		path revetment	
87		lade sluice gate	
88		lade dam	
89		lade sluice gate	



South end of kiln

Appendix 5: DES Entry

LOCAL AUTHORITY:	Argyll and Bute
PROJECT TITLE/SITE NAME:	Taynish Mill Excavation
PROJECT CODE:	TAY 12
PARISH:	North Knapdale
NAME OF CONTRIBUTOR:	Roddy Regan
NAME OF ORGANISATION:	Kilmartin House Museum
TYPE(S) OF PROJECT:	Archaeological Excavation
NMRS NO(S):	NMRS Site Number NR78SW 43
SITE/MONUMENT TYPE(S):	Water driven Grain Mill and drying kiln
SIGNIFICANT FINDS:	
NGR (2 letters, 6 figures)	centred NGR NR 73788 84914
START DATE (this season)	May 2012
END DATE (this season)	May 2012
PREVIOUS WORK (incl. <i>DES</i> ref.)	Two unpublished excavations 2001 and 2008, survey by RCAHMS the results appearing in 'The Royal Commission on the Ancient and Historical Monuments of Scotland. Argyll: an Inventory of the Monuments: Volume 7: Mid-Argyll and Cowal, Historic and later Monuments. No. 252, pp 500-501 Edinburgh.
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	The short excavation has revealed several features associated with the late use of the Mill building, including surfaces, post holes and a beam slot giving some insight into the layout and later modifications within the ground floor of the structure. This will enable SNH to clear out the rest of the building without damaging the in situ deposits, making the building accessible to the public. The lack of roofing material (slates) and relatively low quantity of building rubble within the excavated trenches suggest the roof and much of the walls, along with the mill wheel, had been removed. Apart from artefacts associated with the collapse/demolition of the structure, a midden located over the gear pit is likely associated with the last inhabitants of the building after it no longer functioned as a mill.
PROPOSED FUTURE WORK:	Consolidation of mill structure and presentation to the public
CAPTION(S) FOR ILLUSTRS:	
SPONSOR OR FUNDING BODY:	Scottish Natural Heritage
ADDRESS OF MAIN CONTRIBUTOR:	Kilmartin House Museum, Kilmartin, Argyll, PA31 8RQ

EMAIL ADDRESS:	museum@kilmartin.org
ARCHIVE LOCATION (intended/deposited)	The archive will be deposited with Kilmartin House Museum and copies of the report lodged with WoSAS SMR and the NMRS