

**Catrine Weir, Catrine, East Ayrshire:
Archaeological Mitigation**
Data Structure Report

by Louise Turner

issued 30th April 2012

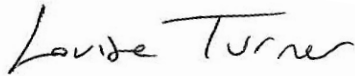


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Overview

1. This Data Structure Report is for archaeological works required by Catrine Community Trust, in support of the emergency repair works recently undertaken to the historic fabric of Catrine Weir, a Scheduled Monument (No. 5670) protected under the Ancient Monuments and Archaeological Areas Act 1979. These archaeological works were designed firstly to mitigate any adverse impact on the archaeological remains during the repair works (Turner, 2012), and secondly, to meet the terms of Historic Scotland, who have issued Scheduled Monument Consent as part of Ancient Monument Grant conditions (Ref. No. AMH/5670/1/1.pt. 3.2).
2. Rathmell Archaeology Ltd was appointed to act with regard to the archaeological issue by Catrine Community Trust. The project works described below were designed to comply with the identified requirements of the Scheduled Monument Consent, as stipulated by Historic Scotland.

Historical Background

3. Catrine Weir (Canmore Id: 43562) forms an integral part of a larger water management system, which carried water drawn from the River Ayr, harnessing its power for use in the Ballochmyle Cotton Works. The hydraulic system consisted of a series of lades, both open and enclosed, ponds (also known as 'voes') and a weir, all features designed to enable a constant, reliable, and regulated flow of water for use in production.
4. The hydraulic system has its origins in the late eighteenth century. It was constructed in 1787, providing power for the contemporary Ballochmyle Cotton Works in Catrine. These works were founded jointly by Claud Alexander of Ballochmyle, and David Dale of Glasgow. Dale is better known for the New Lanark Mills, which he founded in partnership with Robert Owen (Mitchell, 2006).
5. An important part of the water management system is Catrine Weir, the role of which was to slow the rate of flow in the river water prior to its entry into the voe/lade system (Figure 1a). The weir appears to date from the earliest phase of the cotton works, which in 1796 is recorded as having 76 'jeanies' (i.e. 'jennies') in place, with 800 people employed there (Mitchell, 2006, 10).
6. In 1801, the business was sold to a Glasgow-based company, James Findlay & Co. A partner in this firm, Archibald Buchanan, had served as an apprentice to Richard Arkwright in Cromford, and he appears to have instigated the introduction of a series of improvements to the existing infrastructure. In 1824, a bleachworks was added to the complex, and in 1827 the mill itself was expanded. The improvements undertaken in 1827 included the removal of the original millwheels and their replacement with much larger suspension wheels, measuring 15.24m in diameter, designed by William Fairbairn of Fairbairn-Lillie.
7. Legal obligations in place when the weir was first built restricted its height to 2 feet above the river's normal level, but in 1848, following a change in land ownership, the weir was raised to its current height of 4 feet 8 inches above the river's normal level. This alteration is thought to have taken place during a period of upgrading undertaken by James Clark, a partner in the firm, and an engineer named Robert Barclay. It is the result of these improvements, created in order to increase the amount of power obtained from the river that we see today.
8. The weir represents an example of a crib-and-plank weir, a type which is unusual in a Scottish context (Mitchell, 2006, 22). It comprises a grid made of rectangular timber stalls (the 'cribs'), packed with rock and gravel and finished on the upper surface with a dressed stone apron, or spillway. Forming the upper edge of the weir is the weir dam, the watertight face of which is composed of abutting timber planks, with a variable slope according to the flow of the water, and surmounted by a weir crest, originally cast iron but now largely replaced with timber. A deposit of puddled clay at the base of the weir dam would have helped protect the timbers from undermining or scouring through exposure to turbulence. The spillway sloped gently down from the weir crest, with the

rock/gravel infill of the first 'crib' covered by planking, laid perpendicular to the weir crest, as opposed to masonry. The structure itself is thought to have been anchored solely by gravity, with no additional underpinning present.

9. The hydraulic system remained in use until the 1970s, and prior to this date it was repaired on several occasions. Some of these repairs, including the addition of a concrete screed over some of the spillway, have – it is suggested – served to accelerate the historic fabric's decay rather than assisting in its preservation (Mitchell and Murdoch, 2006, 37). In recent years, levels of erosion have proved so great, with substantial voids appearing in portions of the spillway (Figure 1b) that a programme of restoration works has been instigated in order to address the problem and consolidate the historic fabric of the structure for future generations.
10. Part of the preparatory works undertaken to assess the condition of the historic weir included two trenches, sunk within the fabric of the structure in order to assess its condition and inform any subsequent attempts at stabilisation. These works also provided an insight into the construction techniques employed in the weir's fabric, with the main findings summarised as follows:- *'Two horizontal beams, a 12" x 12" (300 x 300mm) upper and 12" x 6" (300 x 150mm) lower, plus two 12" x 6" uprights formed a timber frame which had been backed by vertical shuttering planks, each approximately 15" (380mm) wide and 2" (50mm) thick... The uprights... were not directly nailed or bolted to the horizontals, but kept in position by vertical flat iron bars, which had been formed such that they overlapped on to the upper face of the upper horizontal timber and the underside of the lower. The bars were then nailed to the timbers using hand-made cut nails. Most of these had failed.'* (Murdoch, 2006, 60-61)
11. Murdoch's observations, as quoted above, provided a useful yardstick by which the exposed fabric of the weir might be evaluated during the works described in the course of this data structure report. During the 2006 works, Murdoch had also attempted to interpret the function of several cast-iron, solid-sectioned 'pipes', identified in photographs dated in 2002: two of these were uncovered during the 2006 excavations and identified as anchors for the base of the crib. He also sought to establish whether or not the wooden crib structures were pinned to the bedrock below: in the 2006 works, all the evidence uncovered during the exposure of the historic structure suggested that they were not, but with such small stretches of original fabric exposed for study, it was not possible to establish whether this was typical of the structure as a whole, or a feature atypical of the weir in its entirety.
12. With Murdoch's earlier works providing a limited though valuable insight into what might be expected, it was possible to approach the present phase of archaeological works with specific questions in mind. Of particular concern was identifying how closely the historic fabric exposed during the latest phase of consolidation works matched what had been found previously, for example, establishing whether the crib structures were pinned at any point to the underlying bedrock, or whether they were reliant on the cast iron 'pipe' features as an anchoring mechanism.

Project Works

13. The programme of works was undertaken on three non-consecutive days between January and March 2012, with works dependent on river levels. It comprised the monitoring of excavation works carried out on three discrete areas of erosion damage which had previously been identified within the fabric of the historic weir structure (see Figure 2). The works were carried out by a 13-ton excavator equipped with a toothless ditching bucket.
14. All works were conducted in accordance with the Institute for Archaeologists' Standards and Policy Statements and Code of Conduct and Historic Scotland Policy Statements.



Figure 1a: View of Catrine Weir in its Wider Landscape Setting, from S



Figure 1b: View across Spillway with Voids visible

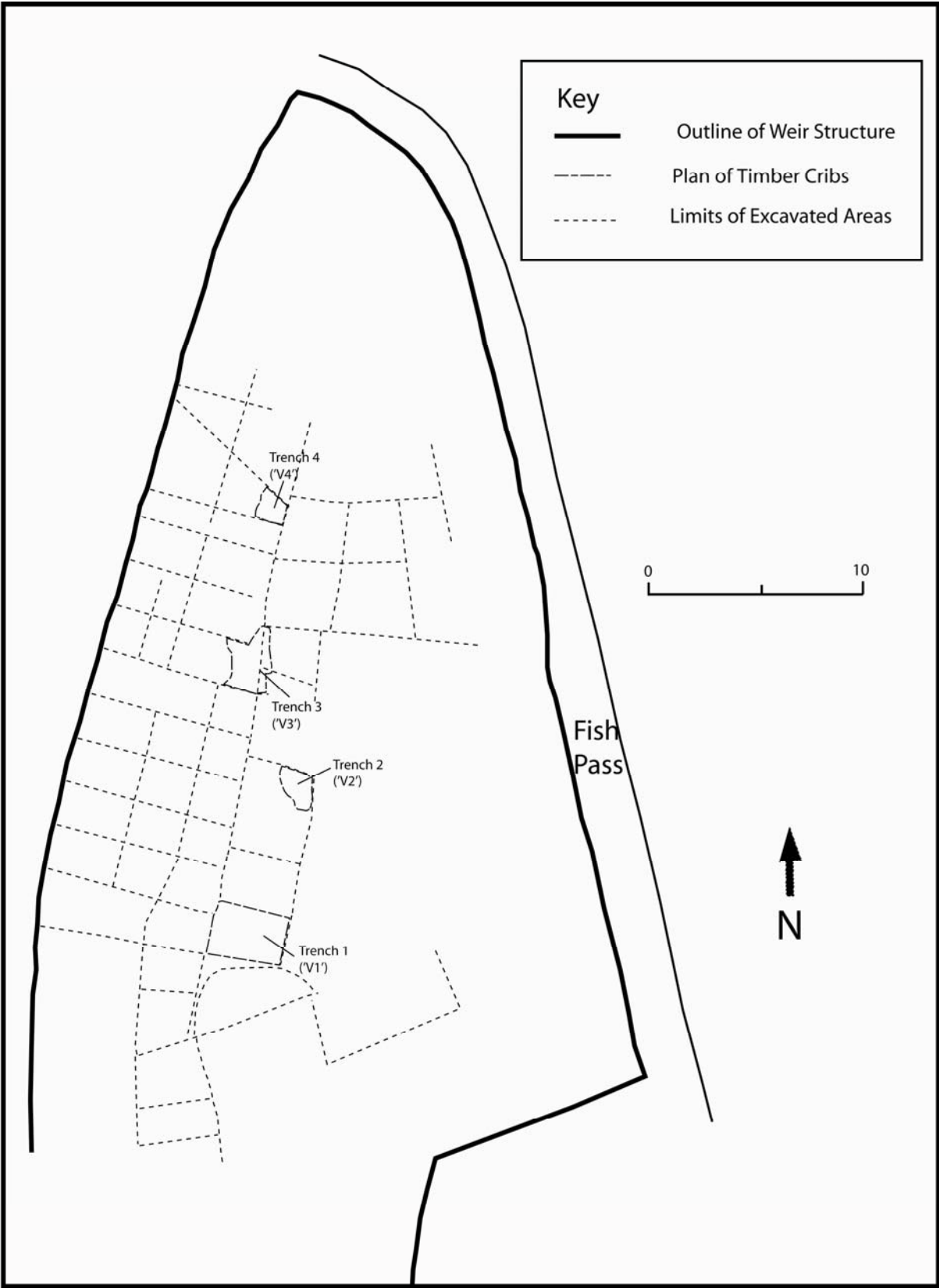


Figure 2: Site Location Plan

Findings

15. The archaeological works at Catrine Weir were unusual in that they comprised excavations within an upstanding structure and the subsequent recording of any exposed fabric. The voids targeted for repair had each been partially filled by intrusive material, comprising displaced sands and gravels washed in from the surrounding river bed. The presence of this loose material was causing further damage to the monument each time the river was in spate, hence it had to be removed before consolidation works could take place.
16. Because the weir was a fully functioning structure located in a substantial watercourse, works had to be staggered to allow for fluctuating water levels. Each void was tackled on an individual basis: once the debris was excavated, the resulting cavity was packed with sandbags filled with lime mortar.
17. The archaeologist was present during the excavation works, monitoring the removal of the intrusive material and ensuring that there was no damage to the fragile structure beneath. Once all the intrusive sand and gravel was removed, the exposed features were recorded by a combination of photographs and measured sketches.
18. An initial cursory examination of the weir supported the previous observations. The original fabric comprised a series of timber cribs, the upper surface of which remained exposed and visible throughout much of their surviving extent. Where the original surface survived, it comprised a series of sandstone setts, lying perpendicular to the line of the weir crest (Figure 3a). However, areas of repair and alteration were apparent. Examples of this repair work included an area of unworked whinstone boulders, forming the western edge of the spillway in the area around Trench 1, and a layer of concrete placed over the original fabric of the spillway near the modern fish pass in the vicinity of Trenches 2 and 3.

Trench 1

19. This area, located at the western edge of the spillway near the southern limits of the weir, was the first to be excavated on the 16th January, 2012, in bright, clear and very cold conditions. The void was rectangular on plan, measuring approximately 2 x 3m in extent (Figure 3b).
20. Extant timbers survived on the north, east and west sides of the trench, with the original fabric completely absent in the east. The condition of these timbers varied greatly, however, according to their location. Along the western edge (Figure 4a), the rectangular-sectioned timber which defined the N-S edge of the crib was still furnished with timber shuttering on both sides over at least half of its exposed length. This shuttering comprised roughly-shaped lengths of timber planking, measuring 0.3m wide and 0.4m deep, fixed in place by roughly-shaped hand-cut iron nails.
21. Similar shuttering also remained *in situ* along the eastern edge of the trench, though here it was in much less robust condition (Figure 4b). Many of the planks were loose, with the upper edges eroded to such an extent that the nails and nailholes were now absent. All of this intact shuttering occurred on the west side of the timber frame: on the east side no shuttering survived, in an area where the squared sandstone setts of the spillway had also been replaced by unworked whinstone boulders.
22. Levels of preservation were even poorer on the north edge of the trench. Here, no *in situ* shuttering survived: instead, all that remained was the skeletal frame of the crib. One interesting feature was, however, apparent: a cylindrical-sectioned cast iron rod which ran adjacent to the E-W spar of the crib (visible in Figure 4b). This feature does not resemble either the 'cast iron pipes' described by Murdoch and described as anchoring mechanisms, or the flat iron bars. It does, however, appear to have functioned as a reinforcing mechanism which makes up the spar of the timber crib.



Figure 3a: View of Spillway, showing details of Original Fabric



Figure 3b: Trench 1 ('Void 1') – Pre-Excavation, viewed from SSW



Figure 4a: Trench 1: *In Situ* Timber Shuttering on N side



Figure 4b: Trench 1: *In Situ* Timber Shuttering on S Side

Trench 2

23. This trench was explored during the second of the three visits to the site, which took place on 2nd February, 2012. Once again, the weather was bright and cold. In addition to the trench itself, some additional small voids in the vicinity were to be packed with bagged lime mortar, so these smaller features were also recorded in advance of the repair works.
24. Measuring just 1.5 x 1.5m in maximum extent and triangular on plan (Figure 5a), Trench 2 was the smallest of the three trenches and therefore the least informative in terms of the amount of fabric exposed during the works. Findings here were consistent with the observations made previously in the excavation of Trench 1, and in Murdoch's earlier 2006 works on the site.
25. Trench 2 was of interest on account of the two converging spars which defined the limits of the trench/void and which formed part of the original weir structure. The reason for this unusual shape is not obviously apparent, though it seems likely that the timbers here may have been constructed in this fashion to create a cross-member which gives added strength to the structure in this location. It is assumed that in its original form, the converging spars would have been adjoining, and pinned together at the E end with hand cut nails. This part of the structure has now been lost.
26. Sandstone setts still appear to have survived *in situ* on the north, west and south sides of this trench, though they are now concealed over much of their extent beneath a thick layer of concrete. Timber shuttering survived on the outer (northeast and southwest) edges of the timber spars, but was largely absent on the inner edges, with only one or two isolated lengths of shuttering: the presence of hand-cut iron nails protruding from the inner edges at regular intervals indicates that such shuttering would originally have been present, but that these features have now been lost due to erosion.
27. Of the additional voids that were examined in this visit, one was of particular interest. It comprised a fissure within the concrete surface, measuring 2m x 0.5m in maximum extent, which had previously contained a length of timber forming a continuation of the NW-SE aligned spar which had formed the NE edge of the trench. The timber spar was now missing, but the associated structural evidence still survived.
28. Due to its location, the evidence revealed here was difficult to photograph. However, despite the limitations imposed by the narrow dimensions of the void, several features were apparent. Perhaps the most noteworthy was the presence of a basal layer of timbers, laid flat to form a level surface, beneath the spar of the crib and the associated shuttering (Figure 5b). At this stage, it was impossible to gauge the purpose of this basal layer, i.e. whether it was laid down to form a level base for the crib itself, and for the infill material within which the sandstone setts would be bedded, or as an upper layer to the crib intended to hold any infill material in place below. The sandstone setts could then be bedded on a thin layer of sand and gravel laid down upon this level surface.
29. The other feature of interest noted here was the character of the shuttering in this location. With the slope of the weir at its most marked in this location, the lower edge of the shuttering was roughly worked to match the grade of the slope, which suggested that the original structure had been built around an existing landform, with the component parts altered to fit the existing surface, as opposed to the surface itself being modified in order to accommodate the structure.



Figure 6a: Trench 2, Viewed from WNW



Figure 6b: Unnumbered Void to NW of Trench 2, showing Basal Layer of Timber Planking

Trench 3

30. The third and final trench was excavated on the 13th March 2012, in damp mild conditions. Of the three trenches explored during the course of the works, this was the most informative, being the largest, and also the most complex in terms of the structural remains encountered.
31. Beneath the sloping timber spars which could be identified on the surface of the spillway, there was a level surface formed by a horizontal row of roughly-squared timber planks, each measuring roughly 0.28m in width and running perpendicular to the line of the weir crest. These were affixed to a sleeper beam along the E edge by hand-cut iron nails, with 2 nails used per individual plank (Figures 6b and 7a). This sleeper beam was, in turn, supported by two rectangular-sectioned planks located below the upper sloping spars, and a central square-sectioned beam measuring 0.35 x 0.35m in extent (Figure 7b), again running perpendicular to the weir-crest.
32. Beneath the timber platform, in the area supported by the three perpendicular beams, there was merely a void, with no evidence of gravel infill. However, the structure had been subject to later damage and modification, probably undertaken in association with consolidation works. The sloping spars had been sawn off virtually flush with the surviving structural remains and, given the presence of sandstone setts in the area lying immediately to the NE, it can be surmised that any additional portions of the weir structure occurring here were in such a poor state of repair that they were either deliberately removed at this time or subject to later destruction through erosion. While the underlying void may also have been packed with gravel during the original construction of the weir, thus supporting the overlying timber platform, any such bedding material has now been washed away.
33. Despite this evidence suggesting later modification of the weir fabric and possible removal of structural elements, it seemed unlikely that the timber platform had continued beyond the area exposed. The horizontal plank which abutted the southeast edge of the timber platform, while intact, had no nailholes present to suggest that a similar feature had been present in the adjacent crib. In addition, the sandstone setts to the east – which appeared to be *in situ* – were set at a much lower level, with no indications of a similar timber platform having been present here.

Discussion

34. With original fabric revealed in three larger 'trenches' and also some smaller voids and fissures, it proved possible to examine and critically assess the structural remains of the weir, and to compare these findings with the observations made previously by Murdoch (2006). It was also possible to identify additional features which had not been present in those areas opened up during the earlier works.
35. Two of the three trenches, Trenches 1 and 2, revealed structural remains entirely consistent with Murdoch's characterisation of the weir structure. The limits of the cribs were defined by circular-sectioned spars, lined along both sides by flat lengths of timber planks 0.25-0.3m wide which were nailed along the spar to form shuttering which would originally have fully enclosed the crib. The area within the crib would then have been filled with gravel, with the sandstone setts being laid above.
36. Once again, no trace of underpinning was apparent in either of these trenches. There was, however, limited evidence in Trench 1 of the use of slender circular-sectioned iron rods as a reinforcing mechanism. Its location near the top of the crib does suggest that in this particular instance it had not been intended for anchoring the crib to the river bed.



Figure 6a: View of Trench 3 from WNW, post-excavation



Figure 6b: Trench 3: S-Facing Section showing Level Surface of Horizontal Timber Planks



Figure 7a: Trench 3, Horizontal Timbers and Supporting Members, seen from S



Figure 7b: Square-sectioned Post forming support for Timber Floor

37. A departure from the structural norm described by Murdoch was identified in a small void lying to the north-west of Trench 2. Here there was glimpsed a basal layer of flat timber planks, forming a platform beneath what would originally have been the level of the setts. The setts had been removed and replaced by concrete, but the original timber spar was still in place and the timber 'platform' - which had individual planks running parallel to the weir crest - clearly underlay this structural element of the nineteenth century weir.
38. This horizontal layer of planking was initially interpreted as a level base upon which the setts could be bedded, but the exposure of a larger expanse of similar material in Trench 3 allowed an alternative interpretation to be postulated. Its extent certainly seemed to be limited: from the lack of nailholes present in the sleeper beam to the southeast of the timber platform in Trench 3, it was clear that this platform had not extended further to the southeast, a possibility further supported by the presence of an *in situ* sandstone sett which sat at a lower level than the adjacent timber platform, reflecting its position lower down in the spillway.
39. With the spillway of the weir clearly at its steepest angle in this particular location, it could be argued that the flat basal layers were constructed here either to give a further degree of rigidity and stability to the structure, or to create a level surface upon which the setts could be bedded down giving an even level slope to the spillway. Insufficient evidence was exposed to fully understand the purpose of this feature, but we can perhaps envisage a stepped profile to the base of the cribs in this location, with a series of flat platforms creating a smooth upper surface to the spillway where the slope is at its most steeply angled.

Conclusion

40. A programme of archaeological works was required by Catrine Community Trust, in support of the emergency repair works recently undertaken to the historic fabric of Catrine Weir, a Scheduled Monument (No. 5670) protected under the Ancient Monuments and Archaeological Areas Act 1979. These archaeological works were designed firstly to mitigate any adverse impact on the archaeological remains from the repair works (Turner, 2012), and secondly, to meet the terms of Historic Scotland, who have issued Scheduled Monument Consent as part of Ancient Monument Grant conditions (Ref. No. AMH/5670/1/1.pt. 3.2)
41. Works comprised the monitoring of the removal of intrusive material from within three voids within the weir structure, caused by erosion of the original fabric exacerbated by inappropriate and unsympathetic repairs carried out as stop-gap measures during the last hundred years.
42. The findings of these works confirmed the observations made previously by Murdoch in an early archaeological investigation which take place in 2006 (Murdoch, 2007), namely that the framework of the weir comprises a series of timber cribs enclosed by timber plank shuttering which was apparently not pinned to the river bed. However, work carried out on the northern part of the spillway, where the slope is steepest, revealed an additional basal layer of timber planking which appeared to form a level platform upon which the sandstone setts were bedded. Insufficient remains were revealed for its purpose to be fully understood, but it is possible that the weir structure in this location possessed a stepped profile to the base of the cribs which helped to stabilise the surface of the spillway in this location.

References

Documentary

- | | | |
|---------------|------|---|
| Mitchell, J S | 2006 | <i>Catrine Weir Conservation Report</i> . East Ayrshire Council |
| Murdoch, R | 2006 | <i>Archaeological Report</i> . In Mitchell, J S. <i>Catrine Weir Conservation Report East</i> |

Ayrshire Council

Turner, L

2012

Catrine Weir, East Ayrshire: Archaeological Mitigation Unpublished Method Statement,
Rathmell Archaeology Ltd

Appendix 1: Registers

Photographic Register

Image No.	Description	From	Date
1	General View of Weir in Landscape Setting	SE	16/01/2012
2	As Above	SE	16/01/2012
3	View of Spillway, With Excavator on Weir Crest	NE	16/01/2012
4	Sluice Gates And Culvert Leading to Voes	SE	16/01/2012
5	General View of Weir in Landscape Setting	SE	16/01/2012
6	View of Spillway With <i>In Situ</i> Timber Crib & Sandstone Setts	SSW	16/01/2012
7	View of Void 1 (Trench 1) – Pre-Excavation	S	16/01/2012
8	As Above – Detailed Shot	S	16/01/2012
9	As Above – Detailed Shot	SW	16/01/2012
10	Trench 1 – N E-W Crib & Iron Reinforcing Rod Revealed	SW	16/01/2012
11	Trench 1 – Shuttering on E N-S Crib Revealed	SW	16/01/2012
12	Trench 1 – Shuttering of W N-S Crib Revealed	ESE	16/01/2012
13	Trench 1 – Fully Excavated (W N-S Crib revealed)	ESE	16/01/2012
14	As Above	NE	16/01/2012
15	Trench 1 – Detail of NW Corner	ENE/vert	16/01/2012
16	As Above	ENE/Vert	16/01/2012
17	As Above	ENE/Vert	16/01/2012
18	Trench 1 – N E-W Crib, Fully Excavated	WSW	16/01/2012
19	As Above	WSW	16/01/2012
20	Trench 1 – E N-S Crib Fully Exposed (With Shuttering)	SW	16/01/2012
21	General View of Weir in Landscape Setting	S	02/02/2012
22	As above	S	02/02/2012
23	View of Spillway, Showing Infilled Void ('Trench 1)	NE	02/02/2012
24	Unnamed Void to NW of Trench 2 – NE Facing Section	NE	02/02/2012
25	Unnamed Void to NW of Trench 2 – Shuttering at SE End	NNE	02/02/2012
26	Unnamed void to NW of Trench 2 – General	NE	02/02/2012
27	Unnamed Void to NW of Trench 2 – On Plan	NE/Vert	02/02/2012

Image No.	Description	From	Date
28	As above	NE/Vert	02/02/2012
29	Unnamed Void to NW of Trench 2 – Detail of NW end (timber platform)	NE/Vert	02/02/2012
30	Void to NW of Trench 2 – Detail of SW end	NE/Vert	02/02/2012
31	Void to NW of Trench 2 – Detail of NW end	SE	02/02/2012
32	Void to NW of Trench 2 – NW Facing Section	NW	02/02/2012
33	Void to NW of Trench 2 – Shuttering in SW Facing Section	SW	02/02/2012
34	As above	S	02/02/2012
35	As above	SW	02/02/2012
36	As above	S	02/02/2012
37	As above	SE	02/02/2012
38	Sandstone Setts Exposed to NE of Unnamed Void to NW of Trench 2	SE	02/02/2012
39	As above	SE	02/02/2012
40	As above, but wider view showing Unnamed Void to NW of Trench 2 plus Adjacent Exposed Sandstone Setts	SE	02/02/2012
41	Unnamed Void to NW of Trench 2 & Adjacent Setts in Wider Setting	S	02/02/2012
42	Trench 2 Prior to Works Commencing	NW	02/02/2012
43	As above – Detailed View	NNW	02/02/2012
44	Infill of Sandstone Setts to NNE of NW-SE crib	SW	02/02/2012
45	As above, detail (on plan)	SW/Vert	02/02/2012
46	Trench 2 – Detail of Nails on NW-SE Crib	SW/Vert	02/02/2012
47	As above, Showing Remains of Shuttering	NW/Vert	02/02/2012
48	As above – Showing Infill of Sandstone Setts	SSW/Vert	02/02/2012
49	Trench 2 – NE-Facing Section	NE	02/02/2012
50	As above – <i>In Situ</i> Shuttering at E End	N	02/02/2012
51	Trench 2 – Detail of NW-SE Crib, with In Situ Nails & Shuttering	NE	02/02/2012
52	Trench 2 – General View	N	02/02/2012
53	Trench 2 – Detail of Shuttering on NE Side of NW-SE Crib	NE	02/02/2012
54	Trench 2 – Infill of Sandstone Setts & Adjacent Shuttering	NE	02/02/2012
55	General View of Unnamed Void to NW of Trench 2	SSE	02/02/2012
56	As above	SSE	02/02/2012
57	Trench 2 – General View	NW	02/02/2012
58	Unnamed Void to NW of Trench 2 – After Ice Removed (NE Facing Section)	NE	02/02/2012

Image No.	Description	From	Date
59	As above – detail of SE End	NE	02/02/2012
60	As above – General View	NE	02/02/2012
61	Exposed Setts Beneath Concrete Screed on Spillway	NE	02/02/2012
62	Fissure in Screed Marking Line of Crib	S	02/02/2012
63	Trench 2 – Exposed NW-SE Crib to NW of Trench	NE	02/02/2012
64	General View of NE Side of Spillway Showing Location of Trench 2	SSW	02/02/2012
65	Trench 2 – Exposed Shuttering to NW	SSW	02/02/2012
66	General View of NE Side of Spillway Showing Location of Trench 2	SSW	02/02/2012
67	General View of NE Side of Spillway	S	02/02/2012
68	Exposed Timber Platform ('Trench 3')	NE	02/02/2012
69	Trench 1 – Infilled	NW	02/02/2012
70	Trench 1 – Infilled (In Wider Setting)	NW	02/02/2012
71	Trench 3 – In Situ Timber Platform (c) – W Side	S	13/03/2012
72	Trench 3 – W Facing Section Showing Platform (c), Sleeper (f) and Supports (d), (e) and (g)	ESE	13/03/2012
73	As above	SE	13/03/2012
74	Trench 3 – Detail of Platform (c), Sleeper (f) and Support (d)	SE	13/03/2012
75	Trench 3 – W facing Section – view of Platform (c), Sleeper (f) and Supports (e) and (g)	SSE	13/03/2012
76	Trench 3 – Detail of Spar (a)-S and Sleeper (f)	SSW	13/03/2012
77	Trench 3 – Detail of Slots in Sleeper (f) over Central Support (g)	SSW	13/03/2012
78	Trench 3 – Sawn end of Spar (a)-N	S	13/03/2012
79	Trench 3 – Detail of Spar (a)-S and Sleeper (f)	S	13/03/2012
80	Trench 3 – Detail of Central Support (g)	SE	13/03/2012
81	Trench 3 – Detail of Support (d)	ESE	13/03/2012
82	Trench 3 – Rock Armour at SW Side	N	13/03/2012
83	Trench 3 – Rock Armour & Whinstone Setts at SW Side	N	13/03/2012
84	Trench 3 – <i>In Situ</i> Timber, SW Side	NE	13/03/2012
85	Trench 3 – <i>In Situ</i> Timber, NE Side	SW	13/03/2012
86	Trench 3 – SW Facing Section. With Spar (a)-N, Platform (c) and setts (h)	SW	13/03/2012
87	Trench 3 – Detail of <i>In Situ</i> Setts (h)	NW	13/03/2012
88	Trench 3 – View of <i>In Situ</i> Setts (h)	NW	13/03/2012

Image No.	Description	From	Date
89	Trench 3 – NE Facing Section	N	13/03/2012
90	Trench 3 , NE Side – Setts (h) abutting Sleeper (f)	NE	13/03/2012
91	Trench 3, NE Side – Setts (h) Abutting Sleeper (f) – Detail	NW	13/03/2012
92	Trench 3, NE Side – Exposed Timber Platform (c)	WNW	13/03/2012
93	Trench 3, NE Side – Setts (h) Abutting Sleeper (f) – Detail	NW	13/03/2012
94	Trench 3, E End – Showing Rock Armour & Whinstone Setts	WNW	13/03/2012
95	Trench 3, SW Side – Spars (a), Platform (c) & Sleeper (f)	NE	13/03/2012
96	Trench 3 – General View	WNW	13/03/2012
97	Trench 3 – Timber Platform (c) Exposed Beneath Concrete Screed	SW	13/03/2012
98	General View of Weir in Landscape Setting	S	13/03/2012
99	General View of Weir Structure	S	13/03/2012
100	View of E Voe From W Bank	W	13/03/2012
101	View Across Wetland Area to W of East Voe	SE	13/03/2012
102	Bridge/Culvert At NE Corner of E Voe	SW	13/03/2012
103	W Extension of E Voe (Canalised Section)	SE	13/03/2012
104	E Side of E Voe – General View	SW	13/03/2012
105	E Voe, Area to S of Path	N	13/03/2012
106	Revetment Forming W Bank of E Voe	S	13/03/2012
107	Revetment Forming N Bank of E Voe, W Extension	S	13/03/2012
108	Detail of Masonry – N Revetment, E Voe	SE	13/03/2012
109	E Voe – W Extension (Canalised Section), Showing Sluice & N Revetment	SE	13/03/2012
110	W Voe – Exposed Cobble Surface	ESE	13/03/2012
111	Footbridge Over Junction Between E & W Voes	S	13/03/2012
112	Cobbled Surface Revealed At Base of W Voe	NE	13/03/2012
113	As Above	N	13/03/2012
114	As Above	NW	13/03/2012

Appendix 2: Discovery & Excavation in Scotland

LOCAL AUTHORITY:	East Ayrshire
PROJECT TITLE/SITE NAME:	Catrine Weir, Catrine
PROJECT CODE:	11072
PARISH:	Catrine
NAME OF CONTRIBUTOR:	Louise Turner
NAME OF ORGANISATION:	Rathmell Archaeology Limited
TYPE(S) OF PROJECT:	Building Recording
NMRS NO(S):	NS52NW 19.01
SITE/MONUMENT TYPE(S):	Weir
SIGNIFICANT FINDS:	None
NGR (2 letters, 6 figures)	NS 5353 2618
START DATE (this season)	12 th January, 2012
END DATE (this season)	13 th March, 2012
PREVIOUS WORK (incl. DES ref.)	None
MAIN (NARRATIVE) DESCRIPTION: (may include information from other fields)	<p>Archaeological works were required in support of emergency repair works undertaken to the historic fabric of Catrine Weir, a Scheduled Monument. The works comprised the recording of historic fabric revealed during the removal of intrusive sands and gravels from three major voids within the weir's fabric.</p> <p>The findings largely supported observations made during previous works on the monument carried out by Murdoch in 2006. However, some additional structural elements of the spillway were identified, in particular a basal platform composed of abutting timber planks, laid flat and apparently occurring only in those areas where the spillway was steeply angled. It is thought that this might reflect a stepped profile to the base of the structure in this location, creating a robust and level platform upon which the sandstone setts could be laid to form the surface of the spillway.</p>
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	None
SPONSOR OR FUNDING BODY:	Catrine Community Trust
ADDRESS OF MAIN CONTRIBUTOR:	Unit 8 Ashgrove Workshops, Kilwinning, Ayrshire KA13 6PU
E MAIL:	contact@rathmell-arch.co.uk
ARCHIVE LOCATION (intended/deposited)	Copies of report sent to Historic Scotland and the West of Scotland Archaeology Service and archive to RCAHMS Collections

Contact Details

43. Rathmell Archaeology can be contacted at our Registered Office or through the web:

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t.: 01294 542848

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44. West of Scotland Archaeology Service can be contacted through the details noted below:

West of Scotland Archaeology Service
Charing Cross Complex
20 India Street
Glasgow
G2 4PF

t.: 01412878330

f.: 01412879529

e.: enquiries@wosas.glasgow.gov.uk

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