

HISTORIC SCOTLAND PROPERTIES IN CARE
MINOR ARCHAEOLOGICAL WORKS 2011

Duff House: Watching Brief, August 2011.

HS PIC Index Number: 90104

SITE: Duff House, near Banff.

N.G.R.: NJ 6906 6334; NJ 6904 6331

DESCRIPTION: Watching Brief during the excavation of trenches to locate and repair a water leak.

PROJECT CODE: HSCO-90104-2011-01

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4 Western Terrace, Murrayfield, Edinburgh EH12 5QF.

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INTRODUCTION

Under the terms of its Properties In Care (PIC) call-off contract with Historic Scotland, Kirkdale Archaeology was asked to undertake an archaeological watching brief during the excavation of trenches to locate and repair a water leak at Duff House in Banffshire (Fig.1).

No water was reaching the house, and the water tanks were empty, but oddly there was no sign of the surface water that would be expected during a leakage episode. The excavations revealed that a failed collar joint was the reason for the leak but, more interestingly, that the reason that there was no surface sign of the leak was that the water being lost from the pipe had found its way into an original William Adam slabbed drain of the 173's which skirted the foundations of the house. This was exposed during the remedial works and was shown to have been breached and utilised during the installation of the water system, possibly in the 1990s.

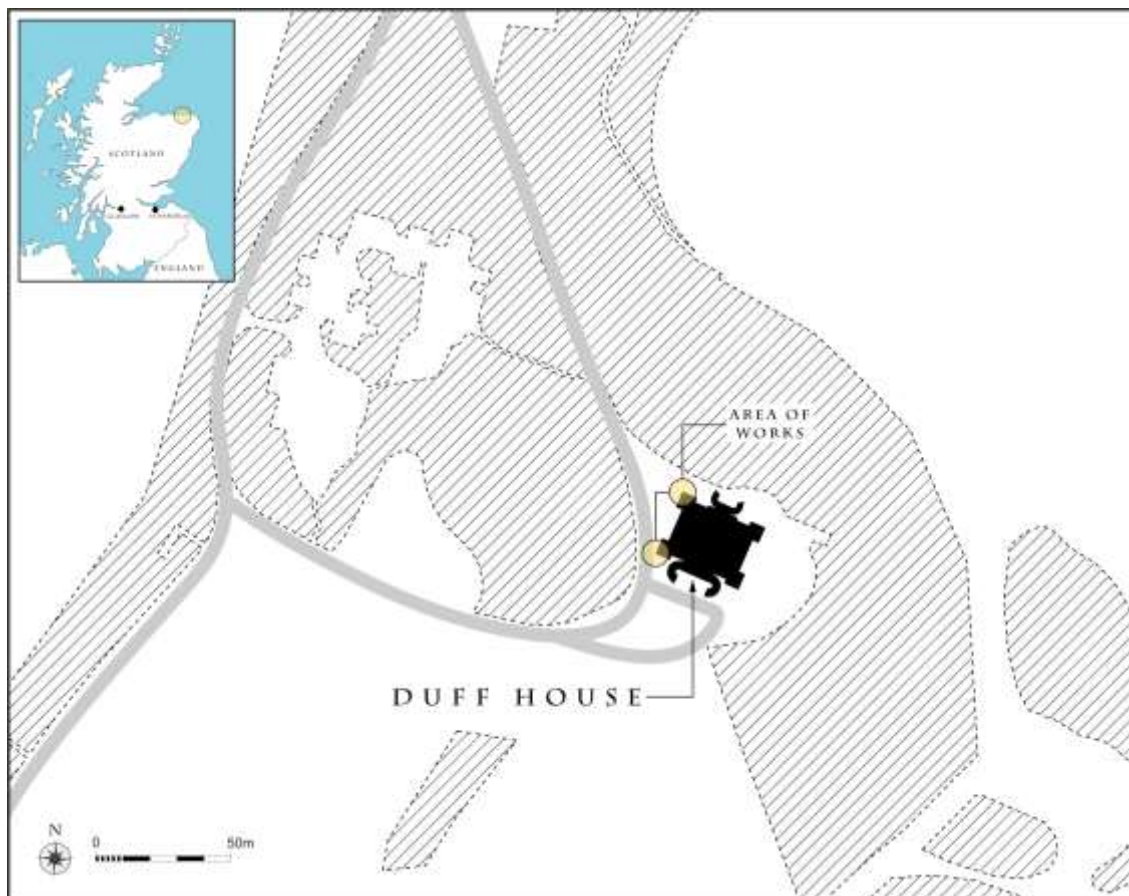


Figure 1: Plan showing the location of Duff House, along with the site of the present works.

The scale and nature of the excavations coupled with the pressing need to remedy the leak meant that the archaeological recording of the works was largely conducted photographically. Plans of both trenches were made at a scale of 1:50. The work was undertaken by Historic Scotland staff using a mechanical digger, with manual excavation closer to the services. The work was carried out on 1st August 2011.

DESCRIPTION

It was intended that trenches would be opened at the NW and SW angles of the house so that the water pipe could be located, cut and capped. If the water pressure returned to the house then it would indicate that the leak was between these two points; the pipes could then stay capped until the specific location of the leak could be established.

TRENCH 1A

This trench measured 3.6m E/W x (up to) 1.8m N/S x 1m deep. A series of electrical and water pipes **006** had been located at a depth of 0.7m – 0.85m with a cast iron waste pipe at 1m depth; these were all running N/S. To the E of the pipes, a breach had been made in a slabbed drain **003/004** some 0.4m below the ground surface, an original part of the William Adam design from the 1730s. The breach, 30cm x 30cm, allowed limited visual access to the drain. The drain was formed of two side walls consisting of coursed pieces of split horizontal basaltic bedrock bonded in a lime mortar. The drain was approximately 1m deep (although it was unclear how much sedimentation covered the actual base). The side walls were approximately 0.3m thick with a flush face to the drain cavity and a rough exterior face; they also had a splayed upper course which carried the large flat cover-slabs of the same stone, the slabs being up to 0.1m thick. The drainage channel itself was 0.75m wide. Having located the water pipe, it was decided to open the next trench at the SW angle of the house.

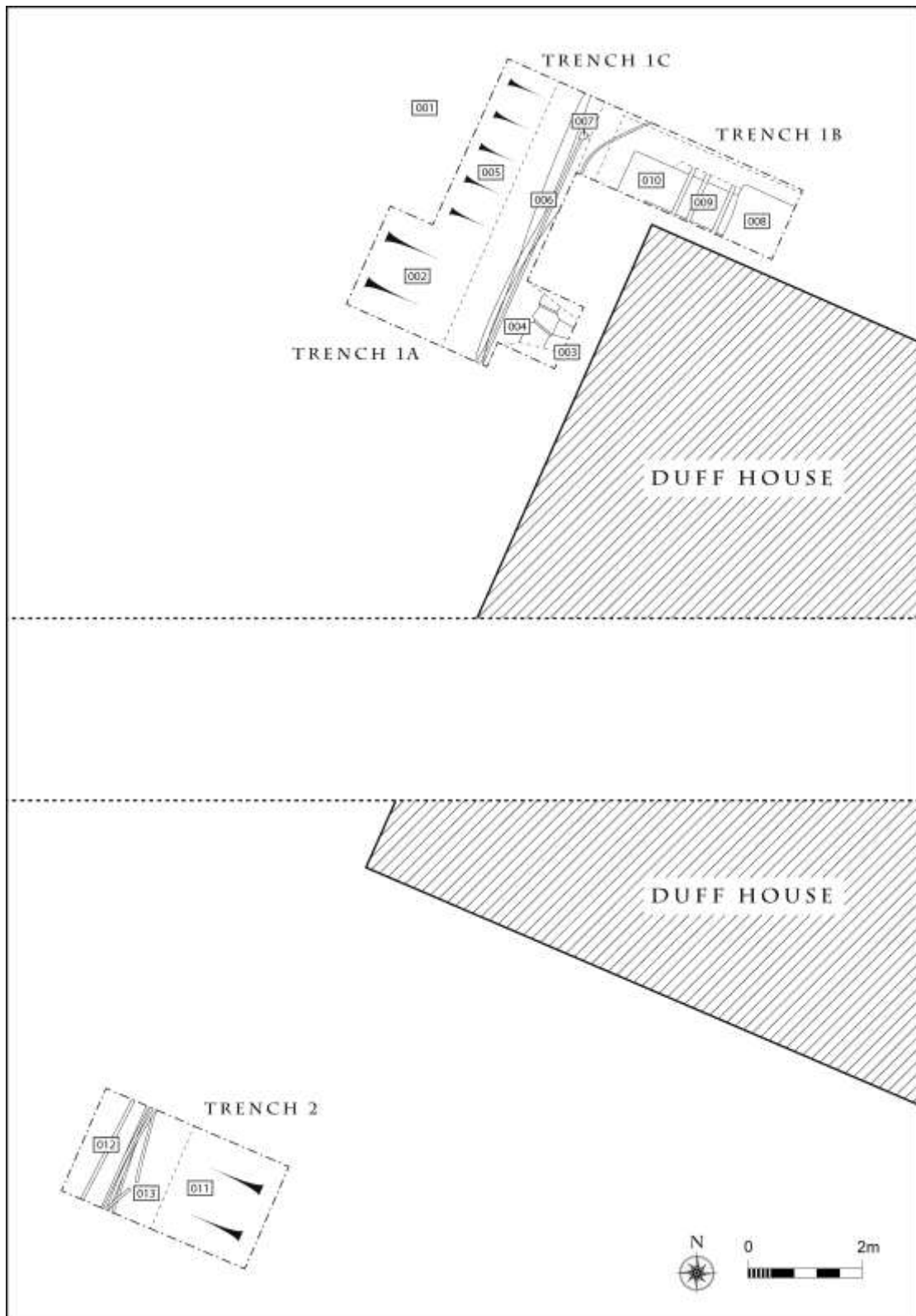


Figure 2: Post-excitation plan of Trenches 1A, 1B, 1C and Trench 2.

TRENCH 2

Trench 2 was located 5.40m from the SW angle of the house. The trench measured 3.5m E/W x 2m N/S x (up to) 1.25m deep. The water pipe **013** was located 1m from the W edge of the trench at a depth of 70cm. There were also several electrical cables **012** within the same pipe cut. The water pipe was cut and capped. The water was then turned on and could be heard flowing into the slabbed drain in Trench 1A. It was therefore clear that the leak was somewhere close to the area of the original trench. It was decided to open another trench to the N of the NW angle of the house in order to investigate the slabbed drain further, and locate the source of the leak.

TRENCH 1 B

Trench 1B measured 3.5m E/W x 1.3m N/S x (up to) 0.35m deep onto the slabbed drain. The drain **010** had previously been covered over in green plastic sheeting **015**. To the E of the trench was the original stone-slabbed cap **008** while an area 1.25m wide had been re-capped with concrete slabs **014**. Once lifted, these were shown to be supported on 0.1m thick concrete beams **009**. This arrangement presumably dates back to the 1990s when the drain was obviously discovered and exploited as part of the new water management scheme which saw the W wall of the drain breached to receive an outflow pipe. To the W of the concrete slabs, an area of the original stone slabbing had collapsed; although it was not clear whether this was a result of the recent water leakage. This whole corner of the slabbed drain was now exposed. When the water was turned on, it could be seen leaking not from the pipe within the slabbed drain, but to the rear where it was coming up and over the drain's side wall. This meant that a further excavation was required to find the source the leak.

TRENCH 1 C

Trench 1C measured 1.9m - 2.25m E/W x 3.2m N/S x (up to) 1.4m deep. This connected the W side of Trench 1B with the N side of Trench 1A. To the N of the trench, at a depth of 0.7m, the source of the leak was found. A 90 degree collar **007**, jointing two lengths of pipe, had a large split up and through its threaded portion. The pressure in the pipe had been forcing water up and over the drain wall where it was then

escaping. This flow of water had washed a lot of sediment into the drain cavity which was removed by Historic Scotland staff. The slabbed drain would be re-capped (and utilised to solve an internal damp problem) under the direction of the Historic Scotland architect. The pipe was re-jointed in Trench 1C, while a bridging joint reconnected the cut pipe in Trench 2.

CONCLUSIONS

No artefacts were recovered during the works. Most of the fills encountered appeared to be levelling layers of an un-attributable age. The most interesting aspect was the location and identification of the original drain, although it has clearly been exposed and utilised before - but to what extent is unclear.

Clearly this discovery demonstrates the high archaeological potential of the site, and it would therefore be appropriate to accompany any further ground-breaking works with an archaeological watching brief.

LIST OF CONTEXTS

No.	Description
001	Gravel and topsoil.
002	Graded silt in Trench 1A.
003	Slabbed caps of drain in Trench 1A.
004	Side wall of drain in Trench 1A.
005	Graded silt in Trench 1C.
006	Services in Trench 1A.
007	Failed jointing in water pipe in Trench 1A.
008	Stone slabs in Trench 1B.
009	Concrete struts in Trench 1B.
010	Drain in Trench 1B.
011	Banked silt in Trench 2.
012	Services in Trench 2.
013	Water pipe in Trench 2.
014	Concrete capping in Trench 1B.
015	Modern green plastic sheeting.

LIST OF DRAWINGS

No.	Type	Description	Scale
1	Plan	Trenches 1A, 1B and 1C.	1:50
2	Plan	Trench 2.	1:50

LIST OF DIGITAL PHOTOGRAPHS

No.	Description	From	Date
01	Trench 1A, S-facing section.	S	1/8/2011
02	Trench 1A, S-facing section.	S	1/8/2011
03	Trench 1A.	W	1/8/2011
04	Trench 1A, slabbed drain and pipes.	NW	1/8/2011
05	Trench 1A, N-facing section.	N	1/8/2011
06	Trench 1A, breached slabbed drain.	N	1/8/2011
07	Trench 1A, breached slabbed drain.	S	1/8/2011
08	Trench 1A, slabbed drain wall.	S	1/8/2011
09	Trench 1A, slabbed drain.	NE	1/8/2011
10	Trench 1A, location shot.	NE	1/8/2011
11	Trench 1A, location shot.	N	1/8/2011
12	Trench 2, pre-excavation location shot.	SE	1/8/2011
13	Trench ,2 pre-excavation location shot.	SE	1/8/2011
14	Trench ,2 pre-excavation location shot.	SE	1/8/2011
15	Trench 2, work in progress.	W	1/8/2011
16	Trench 2, work in progress.	W	1/8/2011
17	Trench 2, work in progress, N-facing section.	N	1/8/2011
18	Pipes in Trench 2.	W	1/8/2011

No.	Description	From	Date
19	Cutting pipe in Trench 2.	NW	1/8/2011
20	Pipes in Trench 1A.	W	1/8/2011
21	Trench 2, work in progress.	NE	1/8/2011
22	Trench 2, work in progress.	SW	1/8/2011
23	Trench 2, work in progress.	SW	1/8/2011
24	Trench 2, S-facing section.	S	1/8/2011
25	Trench 2, S-facing section.	S	1/8/2011
26	Trench 1B, pre-excavation location shot.	N	1/8/2011
27	Trench 1B, pre-excavation location shot.	N	1/8/2011
28	Trench 1B, plastic sheeting 015 over drain.	E	1/8/2011
29	Slabbed drain in Trench 1B.	N	1/8/2011
30	Slabbed drain in Trench 1B.	W	1/8/2011
31	Concrete slab over drain in Trench 1B.	N	1/8/2011
32	Collapsed stone slab over drain in Trench 1B.	E	1/8/2011
33	Collapsed stone slab over drain in Trench 1B.	E	1/8/2011
34	Pipe breaching drain wall in Trench 1B.	E	1/8/2011
35	Slabbed drain with concrete strut in Trench 1B.	NW	1/8/2011
36	Looking E down slabbed drain in Trench 1B.	W	1/8/2011
37	Looking E down slabbed drain in Trench 1B.	W	1/8/2011
38	Water flowing into slabbed drain in Trench 1B.	E	1/8/2011
39	Trench 1B, work in progress.	E	1/8/2011
40	Moving slabs to extend Trench 1B.	W	1/8/2011
41	Voided area over collapsed stone slab.	NW	1/8/2011
42	Voided area over collapsed stone slab.	NE	1/8/2011
43	Voided area over collapsed stone slab.	NE	1/8/2011
44	Voided area over collapsed stone slab.	NE	1/8/2011
45	Collapsed slab over drain.	N	1/8/2011
46	Collapsed slab over drain.	NE	1/8/2011
47	Water flowing into drain in Trench 1B.	NE	1/8/2011
48	Water flowing into drain in Trench 1B.	NE	1/8/2011
49	Water flowing into drain in Trench 1B.	E	1/8/2011
50	Location shot of Trench 1B.	NE	1/8/2011
51	Water flowing into drain in Trench 1B.	E	1/8/2011
52	Water flowing into drain in Trench 1B.	N	1/8/2011
53	Water flowing into drain in Trench 1B.	NE	1/8/2011
54	Trench 1C.	S	1/8/2011
55	Pipe located in Trench 1C.	SE	1/8/2011
56	Failed pipe joint in Trench 1C.	W	1/8/2011
57	Failed pipe joint in Trench 1C.	N	1/8/2011
58	Water leaking from failed pipe joint.	NE	1/8/2011
59	Slabbed drain.	N	1/8/2011
60	Slabbed drain.	N	1/8/2011
61	Slabbed drain.	NE	1/8/2011