PERTH & KINROSS HERITAGE TRUST and NORTHLIGHT HERITAGE

REPORT: 46

PROJECT ID: 4268161

DATA STRUCTURE REPORT

Glenshee Archaeology Project

2012 Excavation

Lair, Glenshee, Perth & Kinross

Perth and Kinross Heritage Trust

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Glenshee Archaeology Project 2012

Lair, Glenshee, Perth & Kinross
NGR: NN 48627 43132

Data Structure Report

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Abstract

The 2012 season of the Glenshee Archaeology Project focused on the partial excavation of a potential early medieval 'Pitcarmick' type building. The building was one of two similar south-east to north-west orientated rectangular structures defined by turf banks previously identified by the RCAHMS. They lay end to end and were located directly next to a prehistoric ring cairn. Further visible archaeology located immediately next to the excavation area included prehistoric round houses and another Pitcarmick type building while the wider landscape included various remains of post medieval settlement. The excavation revealed the remains of collapsed turf banks that would have formed the walls of the building. No clear sign of stone footings for the turf walls was located although areas of better preserved turf walling were noted. A probable entrance was uncovered at the south eastern end of the structure and an internal pit within this end of the building probably represents the location of an upright supporting timber. Significant finds included a flint arrowhead and a series of iron artefacts, including two knives and two buckles. Radiocarbon dating of the site indicates it was in use between the seventh and ninth centuries AD.

1. Introduction

1.1

This report outlines the results of a pilot year of archaeological survey and excavation at Lair, Glenshee, as part of a wider and developing Glenshee Archaeology Project (GAP). Both the Lair pilot and wider GAP programme seek to address a research agenda relating to upland archaeology of the area. More specifically this relates to the suggested Pictish 'Pitcarmick-type' longhouses found there and how they relate to sites from other periods which are often located nearby.

1.2

The Lair pilot was designed to answer questions about the nature and date of one such Pitcarmick-type structure including the character, age and extent of any buried archaeological deposits within, beneath and around what was visible on the surface. It was hoped that the results of the excavation, along with analysis of the wider geophysical and topographical surveys, would highlight areas to target in order to explore broader patterns of change in the upland archaeology of Glenshee.

1.3

The project was carried out through a community archaeology approach. This provided learning opportunities for participants through involvement in fieldwork/desk-based research and through the dissemination of the results. Active participation in the excavation involved both members of the local community and volunteers from further afield. In addition bespoke activities were provided for both primary and secondary schools. An 'open' excavation policy encouraged visits by the public with site tours being provided on demand.

1.4

The project was envisaged and instigated by Perth and Kinross Heritage Trust and delivered in partnership with Northlight Heritage.

Project background

1.5

This project aims to add some much needed depth to the available information on the Pitcarmick-type buildings of north-east Perthshire. While many of these elongated turf and timber houses of the late first millennium have been identified in this upland area, initially by the Royal Commission of Ancient & Historical Monuments Scotland during surveys in the late 1980's (RCAHMS 1990), their overall distribution and dating is still poorly understood. In addition to this very few have been excavated to date, the notable exception being the site-type itself (Barrett & Downes 1993 & 1994) which is currently being published (Barrett et al forthcoming). These turf and timber structures are particularly important given, with the exception of Viking settlement in the Outer Isles, early medieval buildings are rarely found elsewhere in Scotland.

1.6

Like Pitcarmick itself, the site at Lair (Figure 3) comprises a relatively dispersed settlement of long houses on the site of an earlier, prehistoric settlement of round houses of probable late Bronze Age or Iron Age date. At Lair these are located around a ring-cairn of probable earlier Bronze Age date. The Lair pilot aimed to date one of the turf structures in order to confirm or deny its potential early Medieval date and how it related to these earlier sites.

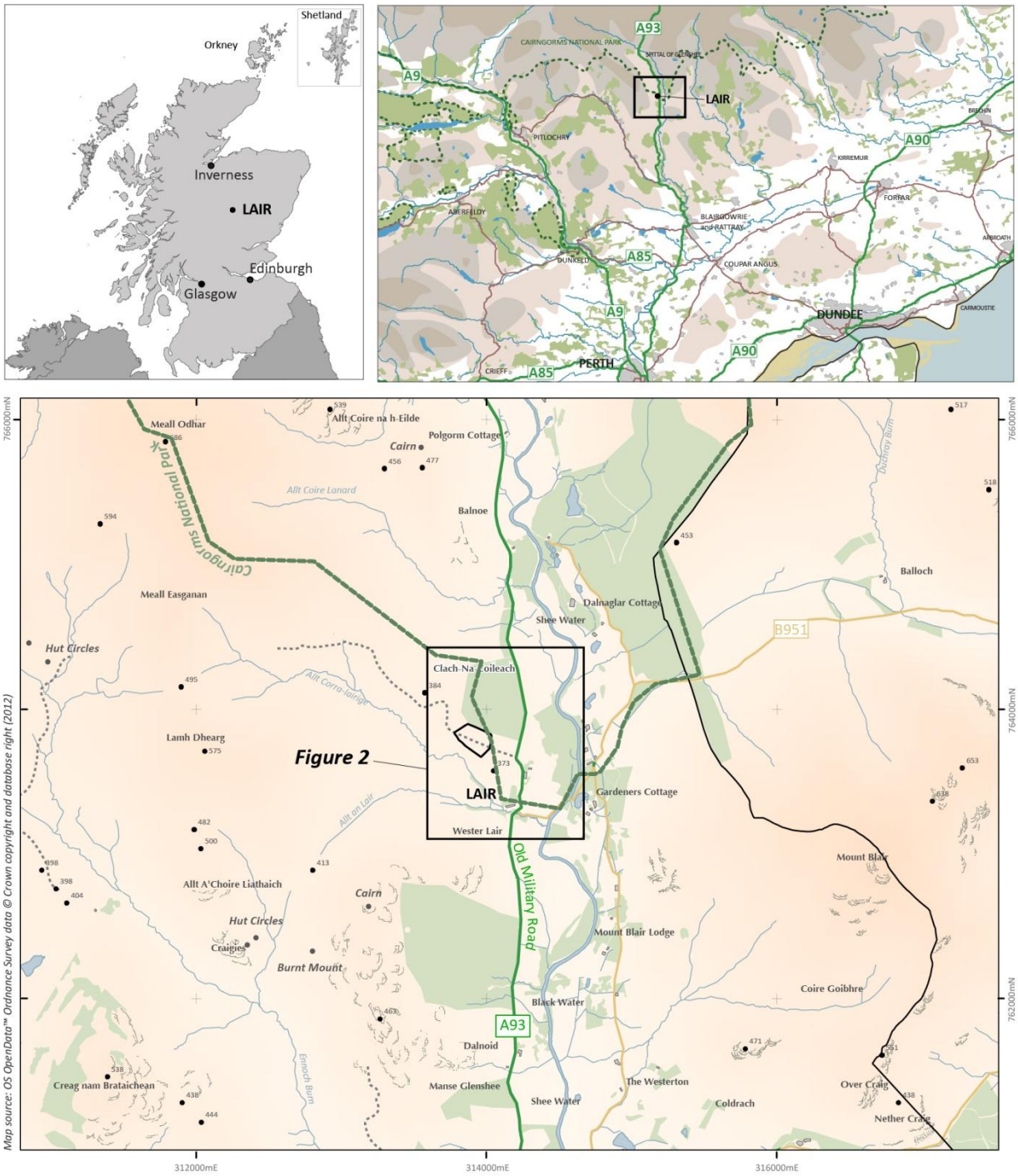

Figure 1: Site Location

1.7
The project was primarily funded by Perth and Kinross Heritage Trust with support of the Scottish Hydro Drumderg Community Benefit Fund, Cairngorms National Park and a small grant from the Society of Antiquaries of Scotland. Outreach work with Kirkmichael Primary School and Blairgowrie High School was commissioned by Perth and Kinross Council through the Living Communities project. In addition many parts of the local community contributed significantly to the success of the project. These included landowner David Houston, Mount Blair Community Council, The Glenshee Pottery, Philip Smith, formerly Glenshee Tourism Organisation, Gulabin Lodge Outdoor Centre Glenshee, The Clan MacThomas Society, Blairgowrie Area Roads Office, Perth and Kinross Council and The Spittal Inn, Glenshee.

2. Location, Geology and Topography

2.1
The site of Lair is located in Glenshee, Perth and Kinross (NGR: NO 1394 6378) and is situated on heather and grass covered terraces of a south facing slope (Figure 1-3). The elevated position, at a height of between c. 360 m and 380 m AOD, affords good views with the Shee Water running c. 600 m to the east. The site lies within the eastern limit of the Forest of Clunie SSSI and just within the southern boundary of Cairngorms National Park.

2.2
The underlying bedrock of the area consists of Mount Blair Psammite & Semipelite Formation (Metamorphic) while the superficial deposits consist of glacio-fluvial gravels, sands and silts (British Geological Survey 1:50000 digital data).

3. Archaeological and Historical Context

3.1
Lair and the wider landscape of Glenshee as a whole has an excellent range of well preserved upland archaeological sites examples of which can be found more widely across much of north-east Perthshire (Smith 1895; RCAHMS 1990).

3.2
The site at Lair comprises a complex of upstanding archaeological remains (Figure 2, Appendix 1 - Table 7). These include a series of prehistoric sites comprising a ring-cairn (HER no: MPK4457, see Table 7 for NMRS No's), a kerb-cairn (HER no: MPK4452), hut-circles (HER no: MPK4455, MPK4469 & MPK4461) and a burnt mound (HER no: MPK4470).

3.3
A series of the Pitcarmick-type structures, likely dating to the first millennium AD (Figure 2), have also been noted in the area. These are all located at Lair and include the main structures noted on Figure 3 (HER no: MPK4456 & MPK4384) along with another two positioned to the north-west (HER no: MPK4460) and south-east (HER no: MPK4442) of this.

3.4
The landscape also holds remains from later farming periods (Figure 2) which primarily comprise of a series of Farmsteads (HER no: MPK4435, MPK4445, MPK4440, MPK4454, MPK9114 & MPK4459) and individual buildings along with related enclosures of varying size (HER no: MPK4451, MPK4448-MPK4450, MPK4444, MPK4399 & MPK4443). Two areas containing shieling huts have been previously recorded (HER no: MPK4392 & MPK4400) along with a mill (HER no: MPK4410).

3.5

Other cultural records in the area relate to the Caulfields Military Road which runs up Glenshee (HER no: MPK5959) and a series of memorial stones (HER no: MPK15070, MPK16161 & MPK4489).

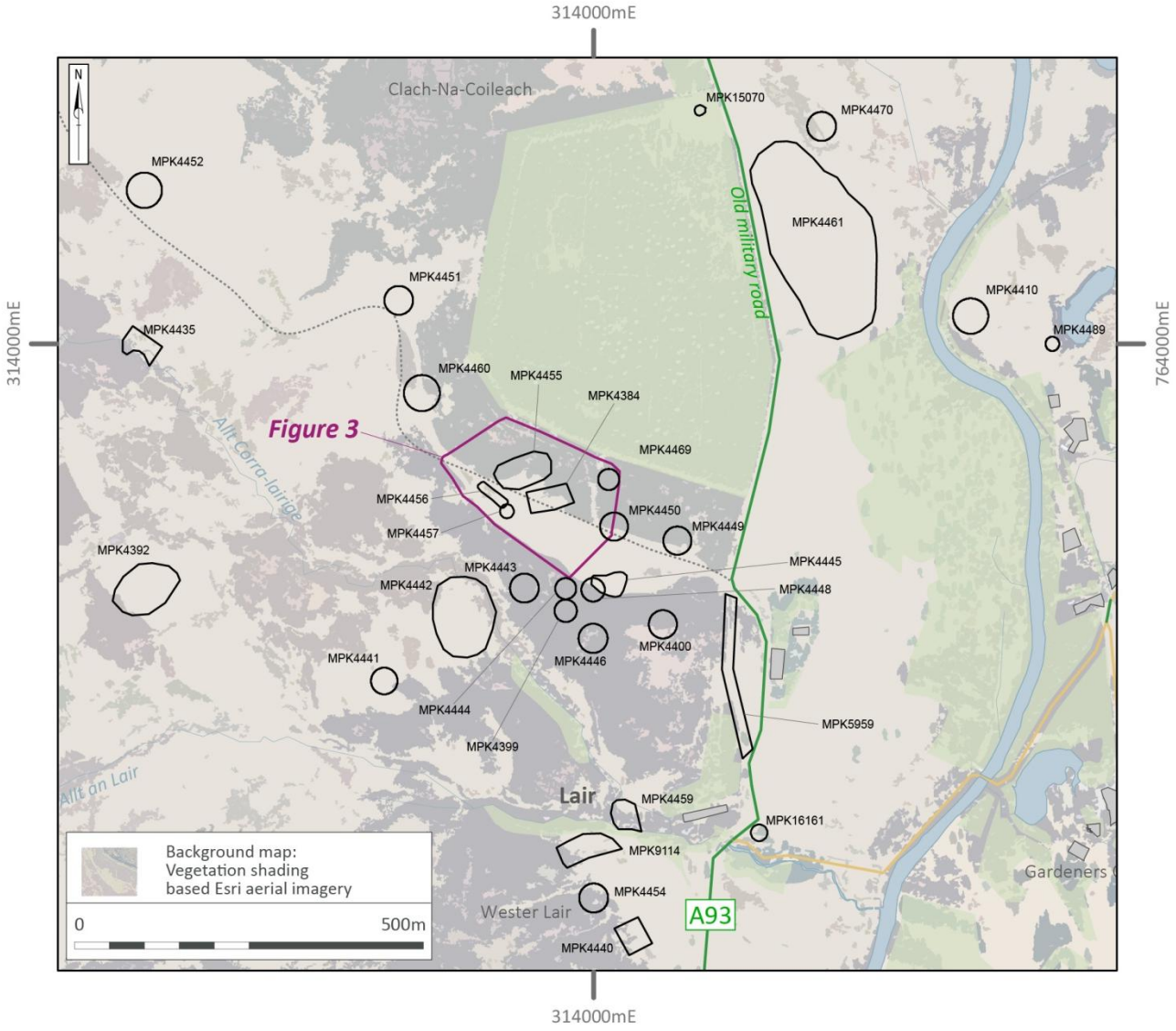

Figure 2: Location of archaeological sites at Lair and the surrounding landscape (MPK HER extract)

3.6

These remains clearly date to a number of different periods and exhibit the diverse range of archaeological sites present in this upland landscape.

4. Summary Objectives

The general aims of this season of the project were:

- To improve our understanding of the Pitcarmick-type structure;
- To provide opportunities for the participation and learning amongst the community and;

- To contribute to a wider awareness and understanding of the value of the archaeology and heritage of Glenshee.

The specific objectives of this season of the project were:

- To create a detailed survey plan of the archaeological remains at Lair;
- To clarify the sequence and manner of the construction of one Pitcarmick-type building;
- To recover palaeo-environmental and artefactual evidence that could be used to date the construction and use of the structure and to clarify how the spaces relating to the structure (internal and external) may have functioned;
- To take samples for geo-chemical and pedological analysis to aid interpretation of the use of the interior of the structure and, in combination with palaeo-environmental evidence, better understand its landscape and environmental context.
- To engage local schools and members of the Glenshee and wider community in the process of discovery and communicate the results of the work to them.
- to prepare post-excavation analysis in the form of a Post Excavation Research Design (PERD) which will propose a programme of work required to further analyse and disseminate the results of the Stage 2 excavation work.

5. Methodology

Survey

5.1
A topographic survey of all the archaeological sites visible above the ground surface at Lair was undertaken (Figure 3) and a site grid was also surveyed which provided the basis for locating all excavation results. A sub-cm Differential Global Positioning System with GNSS-RTK Network (Leica GS08) was employed with the results being processed with CAD and ArcGIS.

Excavation

5.2
The excavation comprised of three trenches (Trenches 1-3) which all related to the north-western most rectangular structure and it's immediate surroundings (Figure 3). The trenches were opened to target either end of the rectangular turf structure and the area to the north of its south-eastern corner where a linear feature had been identified by geophysical survey that appeared to run under the main structure (Morris 2012).

5.3
All archaeological features encountered within the excavation trenches were photographed, sampled and recorded in accordance with guidelines for best archaeological practice as set out by the Institute for Archaeologists (IFA). The written record of all archaeological features, deposits and finds was by means of conventional pro forma sheets. Scaled hand drawn plans were made at 1:20 or 1:50 and sections at 1:10. High resolution digital images were taken and all features were planned from a site grid which was established with a

sub-cm Differential Global Positioning System (see 5.1). Elevated aerial photographs were taken of the site during excavation from a photographic tower.

Environmental & Geo-chemical Sampling

5.4
Each excavated deposit was bulk sampled to allow for the recovery of environmental and botanical remains. Flotation of these samples was carried out during the excavation using a mobile flotation unit. Carbonised plant material was recovered as flots while retents were recovered in a 250 µm sieve and 1 mm mesh.

5.5
The University of Stirling recovered a variety of onsite samples employing a diverse range of techniques. Onsite xrf analysis was undertaken within the interior of the structure to try and distinguish different soil deposits not visible to the naked eye. In addition to standard monolith samples from specific sections soil samples were also taken over a 1 m interval grid within trench 1. These were retained for laboratory geo-chemical and pedological analysis. The results of these studies are in progress and due to be produced in 2013 (Adderley forthcoming). In addition, an assessment of peat deposits in the surrounding landscape was made with a view to pollen analysis (Tipping forthcoming).

6. Results

6.1
Three trenches were excavated over two weeks, all elated to the western most rectangular turf structure (Figure 3). The results of these excavations are outlined below.

6.2
A total of 11 small finds were recovered during the excavation which included coarse pottery (2), a perforated piece of slate (1), lithics (4) and iron objects (4). A further 22 general finds (some representing multiple objects) were recovered from specific contexts. These included iron objects (3), waterlogged bark and charcoal (6), flint (2), coarse stone (3) and bone fragments (8). A total of 25 bulk environmental samples were taken in addition to those taken by Stirling University. 174 digital photographs were taken during the course of the fieldwork. Summary concordance lists are provided in Appendix 1 while full details of individual contexts are contained in the site archive. In the following paragraphs numbers in square brackets indicate unique cut numbers issued in the field and those in round brackets represent deposit or fill numbers.

Trench 1

6.3
Trench 1 was opened over the south eastern end of the western most turf structure (Figure 3). It was positioned to investigate the interior of the higher more level end of the structure, the possible entrance identified by the RCAHMS (1990) and whether any stone foundation was present beneath the slumped turf walls.

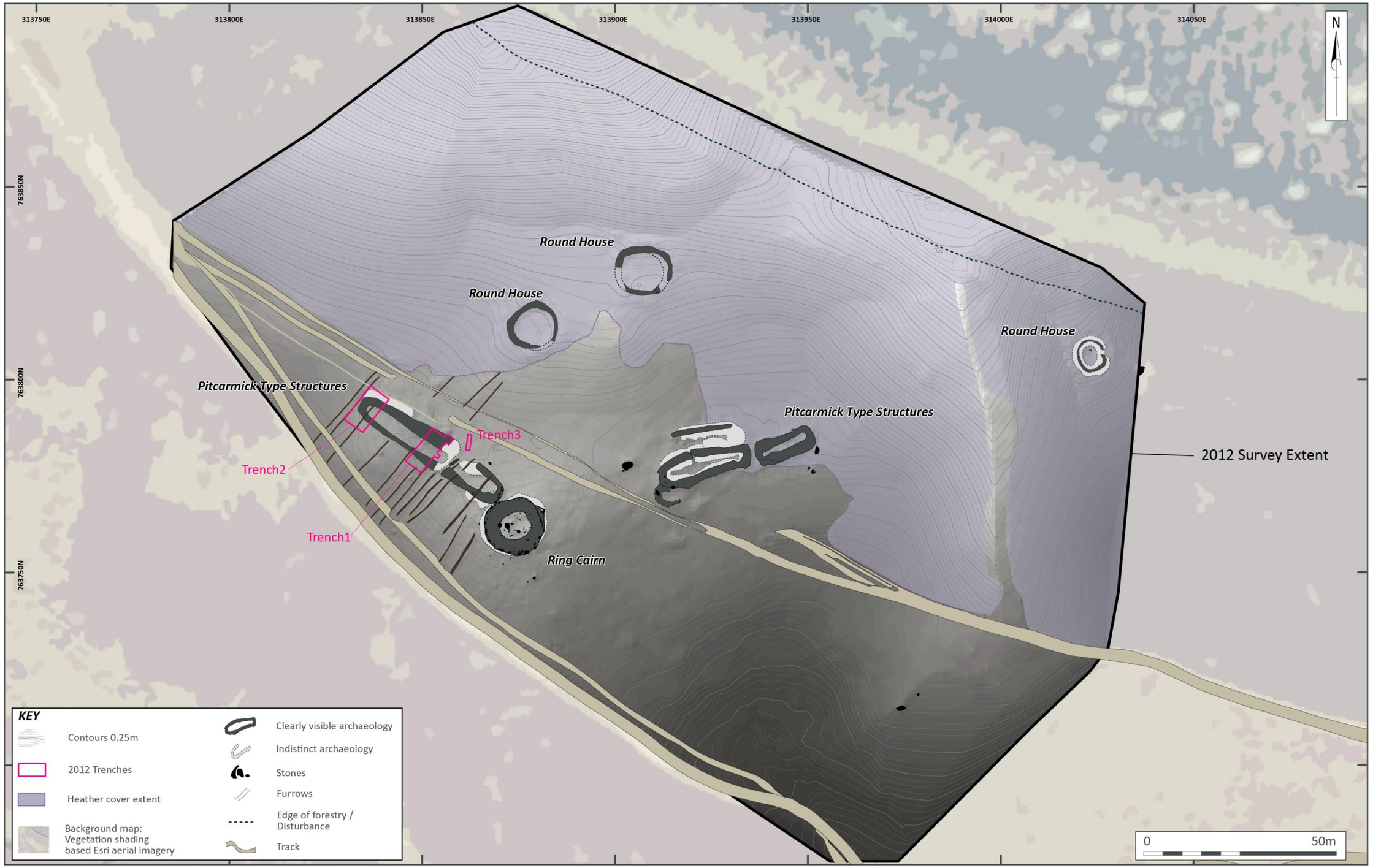

Figure 3: Trench location and topographic/site survey

6.4

The trench measured approximately 11 m north-east to south-west by 5 m north-west to south-east and had two small extensions (Figure 4 & Plate 1). One measured 1 m by 1 m off the south-eastern side of the main trench and was located to investigate a possible feature identified in the section of slot 1 (see section 6.9). Another measuring 2 m by 2 m was opened off the north-eastern corner of the main trench to investigate a linear feature identified by geophysical survey (see section 6.10, Figure 4, Appendix 3).

6.5

Approximately 0.05 m to 0.10 m of topsoil (001) was removed over the entire trench. It was then cleaned down to the top of the collapsed turf walls of the structure which lay immediately below the topsoil. The upper layers of collapsed and slumped turf walls had degraded down to a mid-brown silty sand containing only occasional sub angular gravels, pebbles and cobbles on both the southern side (002) and the northern (003). In the depression within the centre of the trench, created from the slumping of the two turf walls, a very dark grey/brown silty clay (005) had formed to 0.09 m in depth. This deposit had accumulated after the formation of the slumped turf banks and clearly post dated the use of the building. It was likely the result of water logging and animal disturbance within this low lying central area. Four finds consisting of flint and stone (SF1, 2, 4 & 5) were recovered from this clay deposit one of which was a retouched flint flake (SF1). These artefacts were not *in-situ* most likely as a result of bioturbation from animal disturbance in waterlogged/wet ground. One small body sherd of coarse pottery (SF6) was found in the upper layers of (004), the deposit lying beneath (005), whilst (005) was being removed.

Plate 1: Trench 1 nearing completion looking to the south-east

6.6

The trench was further investigated through a series of three smaller slot trenches (Slots 1-3, Figure 4) which served to explore the nature and make-up of deposits associated with the structure.

Figure 4: Post excavation plan of Trench 1

Slot 1

6.7

Slot 1 was opened along the length of the south-eastern edge of the trench and measured 12 m in length by 0.5 m in width. It was opened to obtain a section across the entire width of the structure. It was excavated through the archaeological deposits down to the sterile natural subsoil (022) which consisted of a yellow/brown silty sand with occasional sub rounded pebbles and cobbles.

6.8
Over the entire length of the slot the collapsed turf walls of the structure (002 & 003) existed to between 0.2 m and 0.3 m in depth and had slumped to cover all but a 3.2 m wide section in the centre of the structure (Figure 5). They lay directly over a deposit consisting of a mid-brown silty sand with occasional charcoal flecks (004). One possible flat shaped stone (SF3) was recovered from the surface of (004). This layer was very difficult to distinguish from the overlying degraded turf banks (002 & 003) and was only apparent by being slightly more compact and containing more charcoal flecks. Deposit (004) was present over all but the far north-eastern end of the slot (Figure 5) and lay directly on top of the natural sub soil (022) to a depth of 0.25 m. It appeared to represent the level on top of which the structure was constructed and may, therefore, represent what would have been the ground surface inside the structure.

6.9
In the central section of the slot, where the degraded turf walls (002 & 003) were not present, a circular pit [019] had been cut into (004) and the underlying natural subsoil (022). The trench was expanded here to uncover the entire feature. This showed that the pit was located in a central position within the south-western end of the structure and measured 0.61 m in diameter and existed to 0.28 m in depth. It was filled by a grey/brown silty sand with occasional sub rounded cobble and a moderate amount of small charcoal inclusions. One body sherd of coarse pottery was recovered from this fill (SF 11). It is likely this pit represents the location of an upright timber.

6.10
At the north-eastern end of the slot, where (004) was absent, a deposit consisting of a very dark brown/black silty sand containing moderate-frequent charcoal inclusions (including large charcoal round wood chunks) and patches of orange/red burnt silty sand (014) lay beneath the turf bank (003) and directly on top of the natural subsoil (022). The trench and slot were expanded in this area primarily to ascertain if this deposit corresponded to a linear anomaly revealed by geophysical survey (Morris 2012, see Appendix 3). Directly beneath this deposit the natural subsoil was very uneven and was heat scorched on its surface. Given the presence of large chunks of round wood charcoal, the uneven nature of the subsoil surface and the clear evidence of burning it is possible this deposit represents the burning of a hedge or similar feature (see section 7.2).

Slot 2

6.11
Slot 2 was initially opened over the possible gap in the south-western turf bank, originally identified as a possible entrance way (RCAHMS 1990). It was subsequently expanded to encompass an area measuring up to 3.2 m by 3.2 m in the south-eastern corner of the trench (Figure 4). A post abandonment layer (013) identical to (005) in slot 1 was uncovered lying directly beneath the topsoil in the gap where the entrance was proposed to be. Due to time & weather constraints the slot was not excavated down to the natural subsoil (022).

6.12
During the removal of the slumped turf bank material (002) a distinct layer was revealed directly beneath. It was created from a concentration of sub-rounded and sub-angular pebbles and gravels (Figure 4, Plate 2). This layer was not fully revealed or excavated but corresponded to the low lying area of (002) that was suggested to be an entrance. From what was revealed it appeared to lie on top of (004) which, in addition to the evidence in Slot 1 (section 6.8), suggests that the surface of (004) was the ground level when the structure was used. It is possible that this concentration of pebbles represents an attempt to firm up the ground at the entrance to the structure.

Plate 2: Concentration of pebbles (029) at possible entranceway, Trench 1, Slot 2

6.13

In the same area of Slot 2 as the layer of pebbles (029) a much higher concentration of larger cobbles were uncovered during the removal of (002) than elsewhere in Trench 1 (Figure 4). These cobbles lay within (002) itself but also lay directly on the pebble surface (029) and the possible original ground surface (004). There was no clear pattern in their location, however, given the original turf structure here has slumped heavily the concentration of stone may indicate that more stone was used in the wall of the structure here, at the possible entrance, compared to the other investigated areas in Trench 1. During the slumping of the turf walls any stone would be significantly moved from its original position resulting in only the general concentration of cobbles as seen in Slot 2.

Slot 3

6.14

Slot 3 was excavated through the north-eastern slumped bank of the structure (003) with the aim of investigating the make-up and construction technique used in this wall. The slot measured 3.6 m north-east to south-west and was 0.5 m in width. The slot was excavated down to the natural subsoil (022).

6.15

The collapsed turf bank deposit (003) existed to 0.15 m in depth within Slot 3. During the excavation of this one corroded iron object was recovered (SF8). At either ends of Slot 3 the collapsed turf (003) lay directly on top of the likely original ground surface (004), as seen in Slots 1 and 2. However, in the centre of the slot beneath (003), lay a dark brown/black silty sand (021) with a moderate amount of charcoal inclusions and charcoal staining (Figure 6, Plate 3). This deposit also contained a higher concentration of sub-angular and angular cobbles compared to the excavated sections of (003). It existed to 1.7 m in width and lay over deposit (004) at either side while in the centre, where it existed to 0.2 m in depth, it lay directly over the natural subsoil. Two pieces of corroded iron (SF 9 & 10) were recovered from (021) and it was interpreted as a better preserved section of the original turf walling when compared to (003) above.

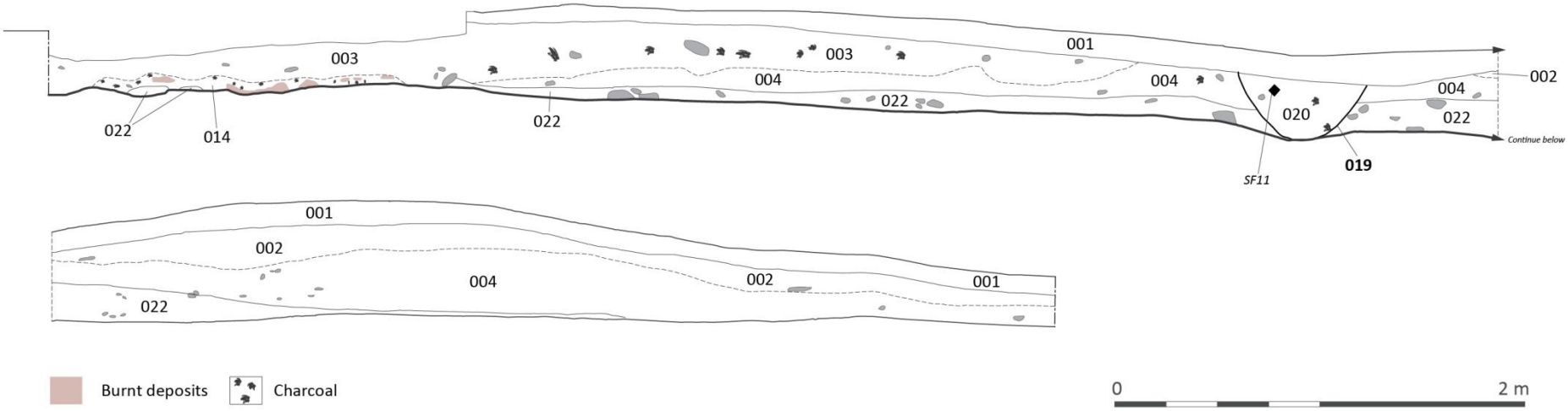

Figure 5: North-west facing section of Slot 1, Trench 1

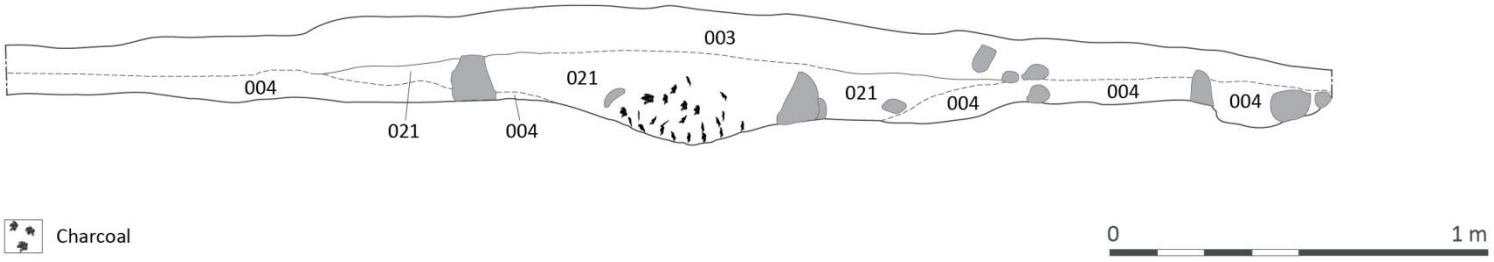

Figure 6: North-west facing section of Slot 3, Trench1

6.16

At the very base of (021), being partially mixed in with it, was a dense concentration of charcoal including large round wood chunks (Figure 6). The edges of the charcoal concentration were not clearly defined and merged with (021). It is likely, however, that the concentration of charcoal represents the same burning event as seen at the north-eastern end of Slot 1 (014, see section 6.10) and corresponds to eastern extent of the highly magnetic linear feature identified in the geophysical survey. This was further suggested by the fact that, similar to Slot 1, the natural subsoil was heavily heat scorched beneath the charcoal concentration.

Plate 3: Likely remains of turf wall in Trench 1, Slot 3

Trench 2

6.17

Trench 2 was opened over the north-western end of the western most turf structure (Figure 3). It was positioned to investigate this end of the structure which was clearly on a relatively steep north-west facing slope. This was very distinct when compared to the much more level south-eastern end of the structure where Trench 1 was located. The initial aim of opening the trench was to ascertain if any structural differences existed between either ends of the building and whether any internal features were present that would aid in determining whether each end differed in functionality.

6.18

The trench measured approximately 11 m north-east to south-west by 6 m north-west to south-east. It encompassed the entire width of the turf structure including all of the presumed location of the gable end (Figure 7 & Plate 4).

6.19

Approximately 0.05 m to 0.15 m of topsoil (001) was removed over the entire trench. It was then cleaned down to the top of the collapsed turf walls of the structure which lay immediately below the topsoil. The upper layers of collapsed and slumped turf walls had degraded down to a mid-brown silty sand containing only occasional sub angular gravels, pebbles and cobbles (006) on both the southern side and the northern. In the depression within the centre of the trench, created from the slumping of the two turf walls, a very patchy dark grey/brown silty sand (028) had formed to 0.05 m in depth. This deposit had accumulated after the formation of the slumped turf banks and clearly post dated the use of the building. It was likely the result of water logging and animal disturbance within this low lying central area. Unlike the similar deposit located in Trench 1 (005) no material culture was recovered from (028) although it was much more ephemeral than (005).

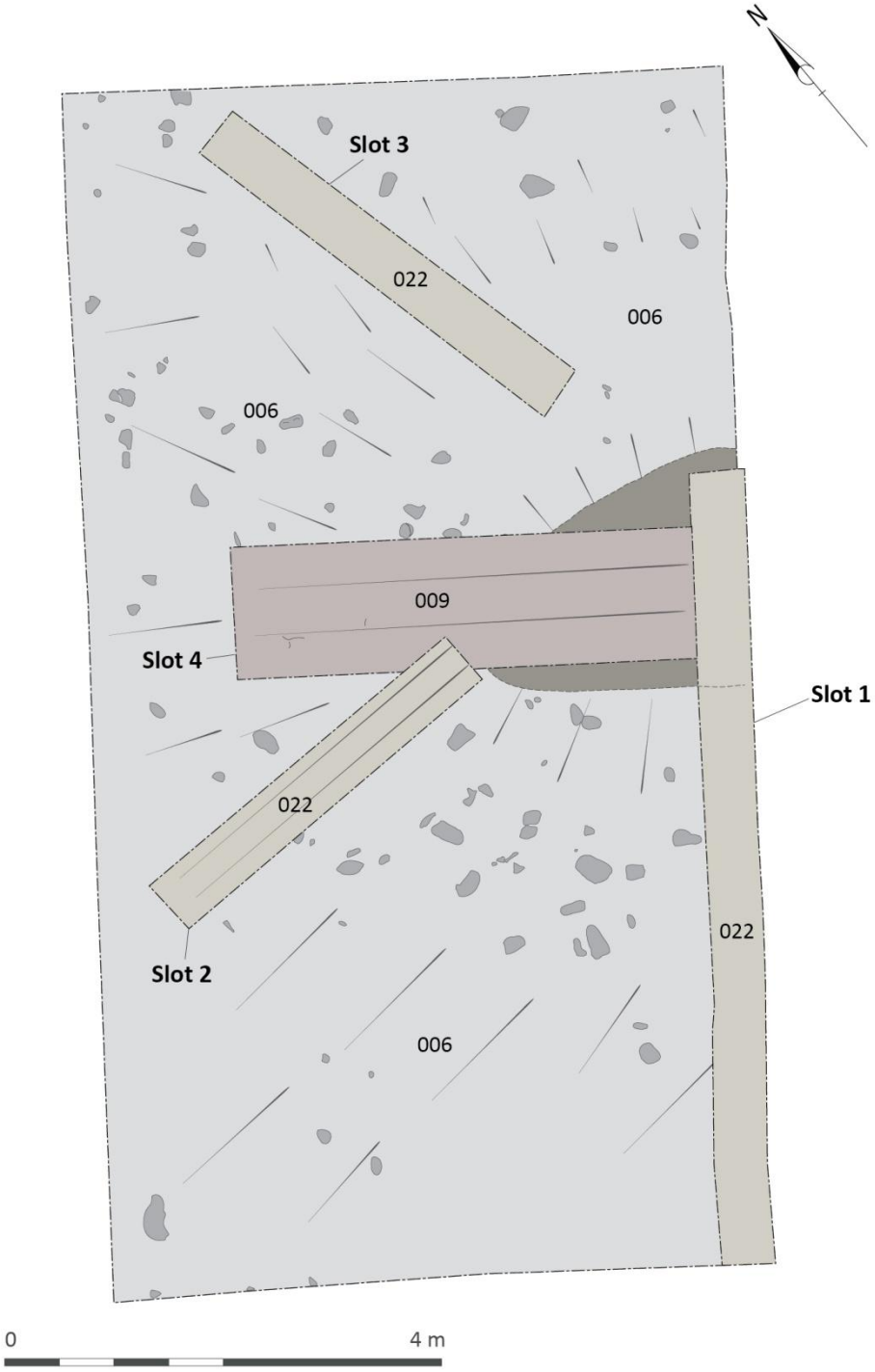

Figure 7: Post excavation plan of Trench 2

6.20

The trench was further investigated through a series of four smaller slot trenches (Slots 1-4, Figure 7) which served to explore the nature and make-up of deposits associated with the structure.

Plate 4: Post-excavation Trench 2 looking north-west

Slot 1

6.21
Slot 1 was opened along just over half the width of the trench along its south-eastern edge and measured 7.2 m in length by 0.5 m in width. It was opened to obtain a section across the south-western collapsed turf wall and part of the interior of the structure. It was excavated through the archaeological deposits down to the sterile natural subsoil (022) which consisted of a yellow/brown silty sand with occasional sub rounded pebbles and cobbles.

6.22
Over the entire length of the slot the collapsed turf wall of the structure (006) existed to between 0.05 m and 0.15 m in depth and had slumped to cover all of the slot. This lay directly over a deposit consisting of a mid-brown silty sand with occasional charcoal flecks (009). This layer was very difficult to distinguish from the overlying degraded turf banks (006) and was only apparent by being slightly more compact and containing more charcoal flecks. Deposit (009) was present over all of the slot and lay directly on top of the natural sub soil (022) to a depth of 0.1 m. It appeared to be the same as (004) in trench 1 which represented the level on top of which the structure was constructed and may, therefore, represent what would have been the ground surface inside the structure. No material culture was recovered during the excavation of Slot 1.

Slot 2

6.23
Slot 2 was opened in an approximate east-north-east to west-south-west direction over the collapsed turf wall of the structure (006) on the southern side of the gable end (Figure 7). It measured 3.5 m in length by 0.5 m in width. It was opened to obtain a section across part of the curved gable turf wall and part of the interior of the structure. It was excavated through the archaeological deposits down to the sterile natural subsoil (022).

6.24

The collapsed turf wall deposit (006) had heavily slumped in this area, primarily due to its location on a slope. It was spread relatively evenly to 0.1 m in depth (Figure 8). As in Slot 1, it lay directly on top of (009) which in turn lay to a depth of 0.25 m on top of the natural sub soil (022) along the entire length of the slot. No material culture was recovered during the excavation of Slot 2.

Slot 3

6.25

Slot 3 was opened in an approximate north-north-west to south-south-east direction over the collapsed turf wall (006) of the structure on the northern side of the gable end (Figure 7). It measured 4.0 m in length by 0.5 m in width. It was opened to obtain a section across part of the curved gable turf wall and part of the interior of the structure. It was excavated through the archaeological deposits down to the sterile natural subsoil (022).

6.26

The collapsed turf wall deposit (006) had heavily slumped in this area, primarily due to its location on a slope. It was spread between 0.15 m and 0.25 m in depth. Unlike in Slot 1 and Slot 2 it lay directly on top of the natural subsoil (022) and no clear sign of the intermediate deposit (009) was present. It was not clear whether the absence of (009) was due to it not being present or the fact that it was so similar to (006) that it was not visually detectable. No material culture was recovered during the excavation of Slot 3.

Plate 5: Concentration of stones within (006), Trench 2, Slot 4 during excavation

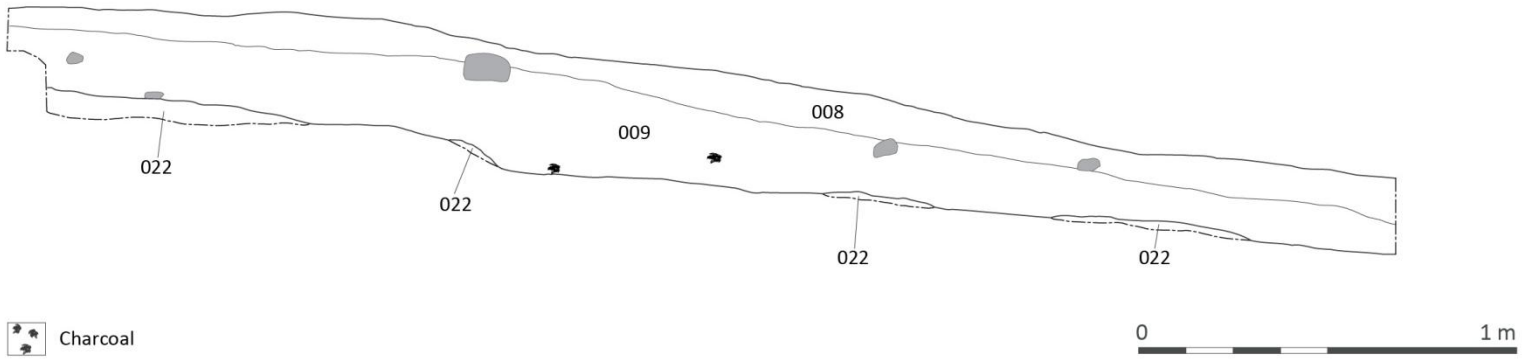

Figure 8: North-west facing section of Slot 2, Trench 2

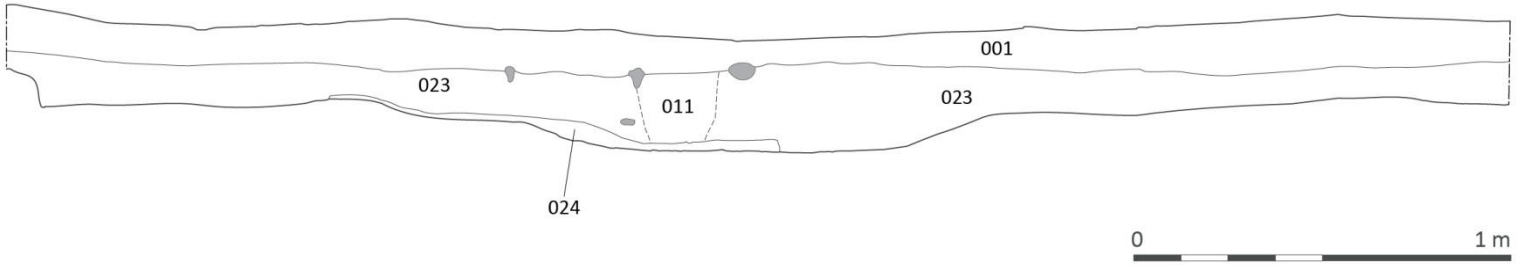

Figure 9: North-west facing section of Trench 3

Slot 4

6.27
Slot 4 was opened to explore the central section of the gable end of the structure and also the internal area next to this (Figure 7). It was orientated in a north-west to south-east direction and measured 4.2 m in length by 1.2 m in width. Due to time constraints the slot was not excavated down to the natural subsoil.

6.28
As with Slots 1-3 in Trench 2 the collapsed turf wall (006) was heavily slumped here and was spread over the entire length of Slot 4 to a depth of up to 0.1 m. One piece of corroded iron was recovered during the removal of (006). As in Slot 1 and 2 a deposit consisting of a mid-brown silty sand with occasional charcoal flecks (009) lay directly beneath (006).

6.29
During the removal of (006) it was clear that there was a concentration of sub-rounded and sub-angular cobbles within (006) itself but also lying on top of (009). They lay in a rough north-west to south-east linear fashion but it was unknown how much this was due to movement in association with the slumping of the turf walls (Plate 5). The slot was excavated down to the top of (009) but not any further. No features of archaeological interest were noted in the surface of (009) other than the concentration of cobbles mentioned above.

Trench 3

6.30
Trench 3 was opened to the east of the north-eastern end of Trench 1 (Figure 3). Its primary aim was to investigate the linear magnetic anomaly picked up by geophysical survey (Morris 2012, Appendix 3) that was also shown to exist in Trench 1 (see section 6.1). It was positioned at right angles to the linear feature initially identified by geophysics and measured 4 m north to south by 1 m east to west.

6.31
Beneath up to 0.15 m of topsoil lay a layer of mid-brown sandy silt (023). The removal of (023) showed it to exist up to 0.25 m in depth where it lay in a small hollow running at right angles to the trench. The deposit (023) appeared to have accumulated naturally in the small hollow as it also existed either side of it (Figure 9). The location of the small hollow also roughly corresponded to the linear geophysics anomaly. The deposit filling the centre of the small hollow consisted of a dark brown sandy silt with occasional charcoal inclusions (016). It was identical to (023) other than it contained charcoal and was darker in colour and no clear definition was visible between the two contexts. One flint arrowhead (SF 7) was recovered from (016) within Trench 3.

6.32
At the very base of Trench 3 and located within the small hollow was a layer, only 0.05 m in depth, that consisted of a mid-brown sandy silt with moderate-frequent charcoal flecks and chunks, some being well preserved round wood pieces. The natural subsoil was scorched orange and red beneath this layer which clearly represented an episode of burning and corresponded to the high magnetic reading recorded by the geophysics. An identical charcoal deposit (014) and evidence of scorching was present in Slot 1, Trench 1 (Section 6.10) and, given the presence of large chunks of round wood charcoal and scorching in Trench 3, the burning episodes identified in each trench are clearly linked and correspond to the linear feature identified in the geophysics. The additional presence of the small hollow again suggests that these deposits relate to the burning of a hedge or similar feature (see section 7.2).

Radiocarbon Dates

6.33

Fragments of carbonised Betula (birch) from pit 019 and from the burning at the base of the linear feature indentified by the geophysics (014) along with Pinus Sylvestris (Scot's Pine) from the well preserved section of turf wall (021) in Trench 1 were submitted to the Scottish Universities Environmental Research Centre (SUERC) for AMS radiocarbon dating. The calibrated date ranges were determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1. The results of this are outlined in table 1 below which indicates activity relating to this structure was taking place between the mid seventh to mid ninth centuries AD.

Table 1: Radiocarbon Dates

Laboratory Code	Sample	Years BP	1 Sigma Cal	2 Sigma Cal	$\delta^{13}C$
SUERC-42419 (GU28430)	Betula (Birch) charcoal from base of linear feature, Slot 1, Trench 1 (014).	1247±29	688-804 AD	680-870 AD	-26.1‰
SUERC-42420 (GU28431)	Pinus Sylvestris (Scot's Pine) charcoal from well preserved turf wall, Trench 1, Slot 3 (021).	1464±29	576-633 AD	553-646 AD	-25.7‰
SUERC-42424 (GU28432)	Betula (Birch) charcoal from pit 019, Trench 1 (020).	1269±29	688-771 AD	665-854 AD	-25.6‰

7. Discussion and Summary

7.1

The site excavated at Lair, Glenshee is of high archaeological significance and requires a programme of post-excavation analysis to more fully understand the results of excavation as presented here. However, several key observations can be made about the site at this early stage which will help to inform post-excavation strategy.

Summary

7.2

The excavations confirmed that the earthwork feature was a turf long house dating to 7^{th}-9^{th} cent AD. With the exception of a south-west facing pebble-paved entrance, at the south-eastern end of the long house and a large pit at the same end of the structure, presumably there to secure a roof supporting timber, little other structural evidence was uncovered. The linear feature (014) indentified by the geophysics and running under the building at an acute angle would appear to have been a stretch of hedge-like boundary burned and cleared directly prior to construction of the building.

7.3

While the finds assemblage is limited, parts of it are potentially very significant. Some material, such as the prehistoric flint, reflects the presence of the nearby sites suggesting possible early medieval re-use, or at least interaction with, the adjacent round-houses. The assemblage of iron artefacts, some of which are secured as being contemporary with the building, are potentially very significant as low status domestic metalwork of this period is rare, primarily due to so few sites having been excavated (Mark Hall pers comm.). Interestingly no metal work was recovered from the Pitcarmick buildings (Barrett et al forthcoming) and only three broadly contemporary metal objects were recovered from the Pictish farmstead at Easter Kinnear, Fife (Driscoll 1997,

104). Other contemporary metalwork has come from the high status hillforts such as Dundurn, some of which is 'low status'. At Dundurn this included a variety of nails, fragments of barbed-bolt padlocks, a knife suggested as being of ninth century date and various other objects including an awl, a possible scriber and two pins or needles (Alcock, Alcock and Driscoll 1987). Further evidence of broadly contemporary metal-working has also been confirmed at the monumental Iron Age stone roundhouses in north-west Perthshire (Strachan forthcoming).

Discussion

7.4

From what can be gleaned from the partial excavation of the turf long house at Lair the general sequence of events appears to be relatively straight forward. At some point between the 7th and 9th centuries AD a linear hedge like feature (that was detected by the geophysics and excavated as context 014) was burnt to clear an area most likely for the construction of the longhouse. The area was de-turfed to create a solid surface and, in all probability, to provide the turf for construction of the longhouse. The longhouse was then constructed on this de-turfed area which involved the building of turf walls, presumably around wooden upright timbers supporting the roof, evidence of which may survive in the large pit at the south-eastern end of the structure. It is possible that the supporting timbers in the long house were assembled in a similar fashion to later cruck-framed buildings.

7.5

Given that this structure was most likely constructed from turf walls around a wooden frame, with possibly a turf roof, the gradual decomposition of these biodegradable materials over the years results in the very ephemeral remains seen on the surface today. This was also reflected in the archaeological deposits uncovered during the excavation where the remains of collapsed and slumped roof, walls and timber frame had merged in most areas into one homogenous deposit. It was only in specific areas, for example the better preserved remains of the turf wall in slot 3, Trench 1, where any type of stratigraphic relationships within slumped material could be discerned.

7.6

A striking discovery at Lair was that there were clearly no substantial stone foundations used in the excavated long house construction with the turf for the walls being placed directly onto the natural subsoil, although a light stone foundation may have been used at the north-eastern sloped end. This is not consistent with the broadly contemporary site-type example excavated at Pitcarmick (Barrett et al forthcoming) where relatively substantial stone foundations were uncovered beneath the slumped and degraded turf walls. However, this variation in construction may also relate to the fact that so few of these turf longhouses have been excavated and re-emphasises the significance of the results from Lair in relation to the wider understanding of these structures as a group.

7.7

The absence of stone foundations may also hint at the use of the building. It is entirely feasible that the smaller, similarly aligned turf structure to the south-east of the excavated site (Figure 3) had stone footings, particularly given stone visible on the surface has been rolled from the kerb of the ring cairn onto the end of this building. This may suggest that the construction of the excavated long house was less well built than its smaller neighbour intimating that the smaller example may have been for human habitation while the excavated example was used as a byre or barn. The presence of these stones, so clearly from the kerb of the cairn, also raises the issue of potential reuse of the ring cairn on a larger scale during the lifetime of the longhouses.

7.8
Questions are also raised over the relationship between the excavated turf longhouse, its smaller neighbour and the other example of a Pitcarmick-type structure located some 40 m to the east (Figure 3). This second Pitcarmick-type structure appears much more visible on the surface compared to the westerly two. It also exhibits more of the 'classic' Pitcarmick-type structural layout (RCAHMS 1990) having more than two parallel walls and the presence of a small external structure, in the case of Lair located off the south-western corner.

7.9
A series of agricultural furrows were clearly visible truncating the south-eastern end of the excavated structure and the smaller turf structure immediately to the south-east (Figure 3 & cover plate). This has obviously accentuated the degrading and merging of the deposits relating to the turf structures as the furrows post date them. Presuming the furrows are Medieval in date their presence indicates that the area was still farmed after the early-medieval period at a time when the excavated structure had gone out of use. If the furrows do not relate to the second, eastern Pitcarmick type structure (which would suggest it is later in date than the excavated long house) where is the farm to which the furrows are related?

8. Future work

8.1
Excavation has recovered environmental material form bulk samples and finds which may require further processing and analysis as part of a broader scheme of post-excavation work. A post-excavation research design (PERD) will be produced by Perth & Kinross Heritage Trust and Northlight Heritage as part of the ongoing project which will provide a recommended programme of analysis.

8.2
Further phases of the Glenshee Archaeology project pilot would revolve around continuing research through outreach and community involvement. Some of the areas that could be investigated in order to build up a better understanding of the chronology and use of the landscape at Lair and beyond include:

- further keyhole excavation at the partially excavated long-house in order to answer specific research questions, for example, is there any clear evidence for a timber cruck-frame or other construction technique?;

- Keyhole excavation at the immediately adjacent turf longhouse to ascertain if it is of similar or different construction and to test the 'house and byre' theory for the pair;

- Keyhole excavation at the prehistoric long house, the cairn and the likely other Pitcarmick-type structure with the aim of obtaining dateable material to aid in understanding the relationship between all the monuments along with any evidence for the potential reuse of the prehistoric sites during the early-Medieval period;

- Further topographical and geophysical survey (Appendix 3) on the wider area to identify targets to test for evidence of wider landscape use, such as areas of cultivation and clearance.

9. List of Sources

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Plate 6: Week 2 team prior to backfilling

10. Appendices

APPENDIX 1: Tables / Concordances

Table 2: Context Information

Context No.	*Type*	*Length (m)*	*Width (m)*	*Depth (m)*	*Description/Interpretation*	*Stratigraphy and/or phasing info*
001	Deposit	unknown	n/a	0.2	Turf & Topsoil.	Overlies entire site including all three trenches.
002	Deposit	unknown	5.5	0.2	Trench 1: Mid-brown silty sand containing occasional sub rounded gravel, pebble & cobble inclusions. Collapsed and slumped S turf wall of structure.	Lies immediately below the topsoil & above 004.
003	Deposit	unknown	5.5	0.3	Trench 1: Mid-brown silty sand containing occasional sub rounded gravel, pebble & cobble inclusions. Collapsed and slumped N turf wall of structure.	Lies immediately below the topsoil & above 004 & 022.
004	Deposit	unknown	unknown	0.1-0.3	Trench 1: Mid-brown silty sand with occasional charcoal flecks. Possible floor level of structure.	Lies below 002 & 003 while sits above 022.
005	Deposit	2.4	1.1	0.09	Trench 1: Very dark grey/brown silty clay. Deposit built up in wet conditions in hollow created by slumped turf banks of structure.	Lies below topsoil and above bank material 002 & 003 along with 004 in the centre.
006	Deposit	unknown	5.5	0.2	Trench 2: Mid-brown silty sand. Collapsed and slumped S turf wall of structure.	Lies immediately below the topsoil & above 009.
007	Deposit	unknown	5.5	0.2	Trench 2: Mid-brown silty sand. Collapsed and slumped S turf wall of structure.	Lies immediately below the topsoil & above 009. Same as 006. Represents 006 in slot 2.
008	Deposit	unknown	5.5	0.2	Trench 2: Mid-brown silty sand. Collapsed and slumped S turf wall of structure.	Lies immediately below the topsoil & above 009. Same as 006. Represents 006 in slot 1
009	Deposit	unknown	unknown	0.1	Trench 2: Mid-brown silty sand with occasional charcoal flecks. Possible floor level of structure.	Lies below 006, 007 & 008 while sits above 022. Same as 027.
010	Deposit	unknown	unknown	0.25	Trench 3: Mid-brown sandy silt. Natural accumulation of material in linear hollow. Upper layer to N of 026/016/011	Lies below topsoil and above burnt material 024 & natural 022. Same as 012, 015, 017 & 023.
011	Deposit	unknown	0.2	0.17	Trench 3: Dark brown sandy silt with occasional charcoal inclusions. Likely the same as 023 but with more charcoal. Possibly represents location of small burrow/plant.	Lies below topsoil & above/within 023. Same as 016 & 026.
012	Deposit	unknown	unknown	0.25	Trench 3: Mid-brown sandy silt. Natural accumulation of material in linear hollow. Upper layer to S of 026/016/011	Lies below topsoil and above burnt material 024 & natural 022. Same as 012, 015, 017 & 023.
013	Deposit	4.0	3.0	0.1	Trench 1: Very dark grey/brown silty sand. Deposit built up in wet conditions in hollow created by slumped turf banks of structure at possible entrance.	Lies below topsoil and above bank material 002.

Context No.	*Type*	*Length (m)*	*Width (m)*	*Depth (m)*	*Description/Interpretation*	*Stratigraphy and/or phasing info*
014	Deposit	Unknown	1.4	0.15	Trench 1: Very dark brown/black silty sand with moderate-frequent charcoal inclusions & large charcoal chunks. Also includes lenses of orange/red burnt silty sand. Possibly represents remains of a burnt hedge and corresponds to highly magnetic linear feature identified in the Geophysics survey.	Lies below bank material 003 and above natural 022. Likely same material as 018/021 in Trench 1 Slot 3
015	Deposit	unknown	unknown	0.25	Trench 3: Mid-brown sandy silt. Natural accumulation of material in linear hollow. Upper layer to N of 026/016/011.	Lies below topsoil and above burnt material 024 & natural 022. Same as 010, 012, 017 & 023.
016	Deposit	unknown	0.2	0.17	Trench 3: Dark brown sandy silt with occasional charcoal inclusions. Likely the same as 023 but with more charcoal. Possibly represents location of small burrow/plant.	Lies below topsoil & above/within 023. Same as 011 & 026.
017	Deposit	unknown	unknown	0.25	Trench 3: Mid-brown sandy silt. Natural accumulation of material in linear hollow. Upper layer to S of 026/016/011.	Lies below topsoil and above burnt material 024 & natural 022. Same as 010, 012, 015 & 023.
018	Deposit	unknown	1.7	0.23	Trench 1: Dark brown/Black silty sand with moderate charcoal inclusions & staining. Possibly represents better preserved turf bank 'core'.	Lies below 003 and above 004. Upper layer of 021.
019	Cut	0.61	0.61	0.28	Trench 1: circular cut of pit/post hole in a central eastern position within the structure.	Cut is filled by 020 and cut into 004.
020	Fill	0.61	0.61	0.28	Trench 1: Grey/brown silty sand with occasional sub rounded cobble inclusions (possible packing stones). Fill of pit/post hole 019.	Fill of 019. Lies below topsoil.
021	Deposit	unknown	1.7	0.23	Trench 1: Dark brown/Black silty sand with moderate charcoal inclusions & staining. Possibly represents a better preserved section of turf bank 'core'. Contains a dense lens/patch of large charcoal chunks at its base where the natural was also scorched orange/red. This likely represents the same events seen in 014, Slot 1 i.e. possibly represents the remains of a burnt hedge and corresponds to highly magnetic linear feature identified in the Geophysics survey.	Lies below 003 and above 004. Upper layer of 021 was also called 018.
022	Deposit	unknown	unknown	unknown	Yellow/brown silty sand with occasional sub rounded pebbles and cobbles. Natural glacial subsoil.	Natural base layer on top of which all archaeology lies.
023	Deposit	unknown	unknown	0.25	Trench 3: Mid-brown sandy silt. Natural accumulation of material in linear hollow.	Lies below topsoil and above burnt material 024 & natural 022. General number given to 010, 012, 015 & 017.
024	Deposit	unknown	unknown	0.05	Trench 3: Mid-brown sandy silt with moderate-frequent charcoal flecks & chunks. Natural subsoil is scorched orange red beneath 024. This likely represents the same events seen in 014, Trench 1, Slot 1 & at the base of 021, Trench 1, Slot 3 i.e. the remains of a burnt hedge and corresponds to highly magnetic linear feature identified in the Geophysics survey.	Lies below 023 and above natural 022.

Context No.	*Type*	*Length (m)*	*Width (m)*	*Depth (m)*	*Description/Interpretation*	*Stratigraphy and/or phasing info*
025	n/a	n/a	n/a	n/a	Voided context	Voided context
026	Deposit	unknown	0.2	0.17	Trench 3: Dark brown sandy silt with occasional charcoal inclusions. Likely the same as 023 but with more charcoal. Possibly represents location of small burrow/plant.	Lies below topsoil & above/within 023. Same as 011 & 016.
027	Deposit	unknown	unknown	0.1	Trench 2: Mid-brown silty sand with occasional charcoal flecks. Possible floor level of structure.	Lies below 006, 007 & 008 while sits above 022. Same as 009.
028	Deposit	patchy	patchy	0.05	Trench 2: Very dark grey/brown silty sand. Deposit built up in wet conditions in hollow created by slumped turf banks of structure.	Lies below topsoil and above bank material 006, 007 & 008.
029	Deposit	unknown	unknown	unknown	Trench 1: Slot 2, surface created by sub rounded and sub angular pebbles in a slight brown silt matrix. Not fully excavated but appears to represent a surface in the likely entranceway to the structure.	Lies beneath bank material 002 and above possible floor surface 004.

Table 3: Finds

Find No.	*Context No.*	*Trench*	*No. of Pieces*	*Material*	*Description*
1	005	1	1	Flint	Retouched Flake
2	005	1	1	Flint	Burnt fragment
3	004	1	1	Stone	Perforated fragment
4	005	1	1	Flint	Small fragment
5	005	1	1	Stone	Flat stone – possible pot lid
6	004	1	1	Pottery	Small body sherd
7	016	3	1	Flint	Small arrowhead
8	003	1	1	Iron	Corroded object
9	021	1	1	Iron	Corroded object
10	021	1	1	Iron	Corroded object – possible knife
11	020	1	1	Pottery	Small body sherd

Table 4: Samples

Sample No.	*Context No.*	*% of deposit*	*Volume (l)*	*No./Size Bucket*	*Reason for sampling*				*Application/comments*
					Pot	*Lithic*	*Bone*	*Botanics*	
1	001	Unknown	10	1 x L	✓	✓	✓	✓	Standard bulk sample
2	002	Unknown	30	3 x L	✓	✓	✓	✓	Flotation – from upper bank material in S half of Slot 1, Tr1.
3	002	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – from mid bank material in S half of Slot 1, Tr1.
4	002	Unknown	40	4 x L	✓	✓	✓	✓	Flotation – from lower bank material in S half of Slot 1, Tr1.
5	003	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – from upper bank material in S half of Slot 1, Tr1.
6	002	Unknown	40	4 x L	✓	✓	✓	✓	Flotation – S end of Slot 1, Tr1 outside of main bank.
7	006	Unknown	40	4 x L	✓	✓	✓	✓	Flotation – from upper bank material in S end Slot 1, Tr2.
8	007	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – from upper bank material Slot 2, Tr2.
9	005	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – post abandonment deposit.
10	005	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – post abandonment deposit.
11	007	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – second spit of Slot 2, Tr2.
12	006	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – second spit of Slot 1, Tr2.
13	008	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – lower bank material Slot 1, Tr2.
14	005	Unknown	40	4 x L	✓	✓	✓	✓	Flotation – post abandonment deposit.
15	013	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – post abandonment deposit in possible entrance.
16	004	Unknown	40	4 x L	✓	✓	✓	✓	Flotation – possible floor surface.
17	014	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – layer of burning at NE end Slot 1, Tr1.
18	013	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – lower layer of post abandonment deposit in possible entrance. May be partly 002.

Sample No.	*Context No.*	*% of deposit*	*Volume (l)*	*No./Size Bucket*	*Reason for sampling*				*Application/comments*
					Pot	*Lithic*	*Bone*	*Botanics*	
19	016	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – Central area Tr3.
20	018	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – Upper layer of 021 Slot 3, Tr1.
21	016	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – Central area Tr3. Lower deposit including red scorched earth.
22	021	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – charcoal rich layer in Slot 3, Tr1 – Possible turf bank.
23	026	Unknown	20	2 x L	✓	✓	✓	✓	Flotation – Lower area in central section of Tr3.
24	020	50	50	5 x L	✓	✓	✓	✓	Flotation – fill of pit 019
25	008	Unknown	10	1 x L	✓	✓	✓	✓	Flotation – bank material in Slot 4, Tr2.

Table 5: Drawings

Drawing No.	*Sheet No.*	*Context*	*Subject*	*Scale*
1	1	002 & 003	Pre-excavation plan of Trench 1 after removal of topsoil.	1:20
2	2	006	Pre-excavation plan of Trench 2 after removal of topsoil.	1:20
3	3	005	Pre-excavation plan of 005 Slot 1, Tr1.	1:20
4	3	002 – 004	Plan of turf edge 002 & 003 Tr1.	1:10
5	3	005	SW facing section through 005.	1:10
6	4	003	Pre-excavation plan of Trench 1 extension after removal of topsoil.	1:20
7	6	003	Mid-excavation plan Slot 3, Tr1.	1:20
8	5	010 – 012	Pre-excavation plan of Trench 3 after removal of topsoil.	1:20
9	5	015 – 017	Mid-excavation plan Tr3.	1:20
10	1	003	Mid-excavation plan Slot 3, Tr1.	1:20
11	1	003 & 021	Mid-excavation plan Slot 3, Tr1.	1:20
12	4	003 & 004	Plan of Slot 2 & bank.	1:20
13	5	022 & 023	Post-excavation plan Tr3.	1:20
14	5	023 & 011	E facing section Tr3.	1:10
15	4	021	Pre-excavation plan of 021 Slot 3, Tr1.	1:20
16	6	022 – 004	NW facing section Slot 1, Tr1.	1:10
17	7	008	NW facing section Slot 1, Tr2.	1:10
18	7	021	Post-excavation plan Slot 3, Tr1.	1:20
19	7	003, 004 & 021	NW facing section Slot 3, Tr1.	1:10
20	8	006 & 009	Mid-excavation plan Slot 4, Tr2.	1:20
21	3	019 & 020	Plan of Pit/Posthole Tr1.	1:20
22	9	008 & 022	SW facing section Slot 3, Tr2.	1:10

Drawing No.	*Sheet No.*	*Context*	*Subject*	*Scale*
23	10	003, 004, 022 & 029	Post-excavation plan Tr1.	1:20
24	5	022	Post-excavation plan Slot 1, Tr1, N. End.	1:20
25	11	006 & 022	Post-excavation plan of Slots 1-4, Tr2.	1:20
26	8	008 & 009	NW facing section Slot 2, Tr2.	1:10

Table 6: Digital Photographs

Photo No.	*Area & Context No.*	*Description*	*Taken From*	*Format*
1	Tr1, 001	Pre-excavation	S	.jpeg & .raw
2	Tr1, 001	Pre-excavation	S	.jpeg & .raw
3	Tr1, 001	Pre-excavation	SE	.jpeg & .raw
4	Tr2, 001	Pre-excavation – N arrow pointing NE	SW	.jpeg & .raw
5	Tr2, 001	Pre-excavation – N arrow pointing NE	SW	.jpeg & .raw
6	Tr2, 001	Pre-excavation	S	.jpeg & .raw
7	Tr1, 001 & 002	During first clean	W	.jpeg & .raw
8	Tr1, 001 & 002	During first clean	W	.jpeg & .raw
9	Tr2, 001	Deturfing	E	.jpeg & .raw
10	Tr2, 001	Deturfing	E	.jpeg & .raw
11	Tr1, 001 & 002	During first clean	W	.jpeg & .raw
12	Tr2, 001	Deturfing	E	.jpeg & .raw
13	Tr1, 002	After removal of topsoil	W	.jpeg & .raw
14	Tr1, 002	After removal of topsoil	W	.jpeg & .raw
15	Tr1, 002	After removal of topsoil – N arrow pointing W	S	.jpeg & .raw
16	Tr1, 002	S facing section Slot 1, S half of slot	S	.jpeg & .raw
17	Tr1, 002	S & E facing section Slot 1, S half of slot	SE	.jpeg & .raw
18	Tr1, 003	Slot 1, location of bark find	N	.jpeg & .raw
19	Tr1, 003	Slot 1, location of bark find	N	.jpeg & .raw
20	Tr1, 002 & 005	Water gathering in trench	NE	.jpeg & .raw
21	Tr1, 002 & 005	Water gathering in trench	E	.jpeg & .raw
22	Tr2, 001 & 006	After first clean	E	.jpeg & .raw
23	Tr2, 001 & 006	After first clean	E	.jpeg & .raw
24	Tr1, 002 & 003	After second clean	W	.jpeg & .raw
25	Tr1, 002 & 003	After second clean	W	.jpeg & .raw
26	Tr2, 001 & 006	After first clean	W	.jpeg & .raw
27	Tr2, 001 & 006	After first clean	W	.jpeg & .raw
28	Tr2, 001 & 006	After first clean	W	.jpeg & .raw
29	Tr1, 002 & 022	Slot 1 – S end – excavated to natural subsoil	S	.jpeg & .raw
30	Tr1, 005	Slot 1 during excavation	S	.jpeg & .raw
31	Tr1, 005	Slot 1 during excavation	E	.jpeg & .raw
32	Tr1, 003 & 004	Slot 1 – mid excavation – N end	SE	.jpeg & .raw
33	Tr1, 003 & 004	Slot 1 – mid excavation – N end	S	.jpeg & .raw
34	Tr1, 003 & 004	Slot 1 – mid excavation – N end incl. possible feature	E	.jpeg & .raw
35	Tr1, 003 & 004	Slot 1 – mid excavation – N end incl. possible feature	E	.jpeg & .raw
36	Tr1, 002 & 003	After second clean	W	.jpeg & .raw
37	Tr1, 002 & 003	After second clean	W	.jpeg & .raw
38	Tr1, 002 & 003	Rig/ploughing to E of trench	WNW	.jpeg & .raw

Photo No.	*Area & Context No.*	*Description*	*Taken From*	*Format*
39	Tr1, 002 & 003	Rig/ploughing to E of trench	WNW	.jpeg & .raw
40	Tr1, 002 & 003	Rig/ploughing to E of trench	W	.jpeg & .raw
41	Tr1, 002 & 003	Rig/ploughing to E of trench	W	.jpeg & .raw
42	Tr1, 002 & 004	Possible turf lens in slot 1	N	.jpeg & .raw
43	Tr1, 002 & 004	Possible turf lens in slot 1	N	.jpeg & .raw
44	Tr1, 002 & 004	Possible turf lens in slot 1	N	.jpeg & .raw
45	Tr2, 006/007	Slot 2 – Mid-excavation	SW	.jpeg & .raw
46	Tr2, 006/009	Slot 1 – Mid-excavation	S	.jpeg & .raw
47	Tr2, 006/009	Slot 1 – Mid-excavation – N end	W	.jpeg & .raw
48	Tr2, 006/009	Slot 1 – Mid-excavation – Mid	W	.jpeg & .raw
49	Tr2, 006/009	Slot 1 – Mid-excavation – S end	S	.jpeg & .raw
50	Tr2, 006/009	Slot 1 – Mid-excavation	S	.jpeg & .raw
51	Tr1, 002 & 004	Slot 1 – Mid-excavation	S	.jpeg & .raw
52	Tr1, 002 & 004	Slot 1 – Mid-excavation	S	.jpeg & .raw
53	Tr1, 003	Trench extension after removal of topsoil	E	.jpeg & .raw
54	Tr2, 009	Slot 2 – Mid-excavation	SW	.jpeg & .raw
55	Tr2, 009	Slot 1 – Mid-excavation	S	.jpeg & .raw
56	Tr2, 009	Slot 1 – Mid-excavation	N	.jpeg & .raw
57	Tr2, 008 & 009	Slot 1 – north-west facing section through bank	W	.jpeg & .raw
58	Tr3, 023 & 011	Trench after removal of topsoil	SE	.jpeg & .raw
59	Tr3, 023 & 011	Trench after removal of topsoil	SE	.jpeg & .raw
60	Tr3, 023 & 011	Trench after removal of topsoil	SE	.jpeg & .raw
61	Tr3, 023 & 011	Trench after first clean	NW	.jpeg & .raw
62	Tr3, 023 & 011	Trench after first clean	NW	.jpeg & .raw
63	Tr1, 005 & 004	South-west facing section through 005	S	.jpeg & .raw
64	Tr1, 005 & 004	South-west facing section through 005	S	.jpeg & .raw
65	Tr1, 002	Pre -excavation Slot 2 - Possible entrance	SW	.jpeg & .raw
66	Tr3, 023	Southern end of trench after removal of topsoil	NE	.jpeg & .raw
67	Tr3, 011	Partial excavation of 011	SW	.jpeg & .raw
68	Tr1, 002	Partial excavation of Slot 2	SW	.jpeg & .raw
69	Tr1, 002	Partial excavation of Slot 2	SW	.jpeg & .raw
70	Tr1, 003	Slot 3 – Mid-excavation	N	.jpeg & .raw
71	Tr3, 023 & 011	Mid-excavation	NE	.jpeg & .raw
72	Tr3, 023 & 011	Mid-excavation	NE	.jpeg & .raw
73	Tr3, 023 & 011	Mid-excavation	NE	.jpeg & .raw
74	Tr3, 023 & 011	Mid-excavation	NE	.jpeg & .raw
75	Tr1, 003 & 021	Slot 3 – Mid-excavation	SW	.jpeg & .raw
76	Tr1, 002 & 029	Possible surface in entrance – Slot 2	SW	.jpeg & .raw
77	Tr1, 002 & 029	Possible surface in entrance – Slot 2	SW	.jpeg & .raw
78	Tr1, 002 & 029	Possible surface in entrance – Slot 2	NE	.jpeg & .raw
79	Tr1, 002 & 029	Possible surface in entrance – Slot 2	SE	.jpeg & .raw
80	Tr1, 002 & 029	Possible surface in entrance – Slot 2	SE	.jpeg & .raw
81	Tr3, 023 & 024	North-east facing section	NE	.jpeg & .raw
82	Tr3, 023 & 024	North-east facing section	NE	.jpeg & .raw
83	Tr1, 002 & 003	Mid-excavation	W	.jpeg & .raw
84	Tr1, 002 & 003	Mid-excavation	W	.jpeg & .raw
85	Tr1, 002 & 003	Mid-excavation	W	.jpeg & .raw

Photo No.	*Area & Context No.*	*Description*	*Taken From*	*Format*
86	Tr1, 002 & 003	Mid-excavation	SW	.jpeg & .raw
87	Tr2, 006	Mid-excavation	E	.jpeg & .raw
88	Tr2, 006	Mid-excavation	E	.jpeg & .raw
89	Tr1, 002 & 004	West facing section – S end	W	.jpeg & .raw
90	Tr1, 002 & 004	West facing section – S end	W	.jpeg & .raw
91	Tr1, 002 & 004	West facing section – Mid 1	W	.jpeg & .raw
92	Tr1, 002 & 004	West facing section – Mid 1	W	.jpeg & .raw
93	Tr1, 002 & 004	West facing section – Mid 2	W	.jpeg & .raw
94	Tr1, 002 & 004	West facing section – Mid 3	W	.jpeg & .raw
95	Tr1, 002 & 004	West facing section – Mid 4	W	.jpeg & .raw
96	Tr1, 003 & 004	West facing section – Mid 5	W	.jpeg & .raw
97	Tr1, 003 & 004	West facing section – Mid 6	W	.jpeg & .raw
98	Tr1, 003 & 004	West facing section – Mid 7	W	.jpeg & .raw
99	Tr1, 003 & 004	West facing section – N end	W	.jpeg & .raw
100	Tr1, 003 & 004	West facing section – N end	W	.jpeg & .raw
101	Tr1, 003 & 004	West facing section – N end	W	.jpeg & .raw
102	Tr1, 003	West facing section – Slot 3 – Mid-excavation	W	.jpeg & .raw
103	Tr1, 003	West facing section – Slot 3 – Mid-excavation	W	.jpeg & .raw
104	Tr3, 023 & 024	North-east facing section	NE	.jpeg & .raw
105	Tr3, 023 & 024	South-west facing section	SW	.jpeg & .raw
106	Tr1, 021	Slot 3 – Mid-excavation	N	.jpeg & .raw
107	Tr1, 021	Slot 3 – Mid-excavation	W	.jpeg & .raw
108	Tr1, 021	Slot 3 – Mid-excavation	W	.jpeg & .raw
109	Tr2, 006/008	Slot 1 – West facing section – S end	W	.jpeg & .raw
110	Tr2, 006/008	Slot 1 – West facing section – N end	W	.jpeg & .raw
111	Tr2, 006/008	Slot 3 – Mid-excavation	NW	.jpeg & .raw
112	Tr1, 021	Slot 3 – Mid-excavation	W	.jpeg & .raw
113	Tr2, 006/008	Slot 4 – Mid-excavation	E	.jpeg & .raw
114	Tr2, 006/008	Slot 4 – Mid-excavation	E	.jpeg & .raw
115	Tr2, 006/008	Slot 4 – Mid-excavation	S	.jpeg & .raw
116	Tr2, 006/008	Slot 4 – Mid-excavation – W end	S	.jpeg & .raw
117	Tr2, 006/008	Slot 4 – Mid-excavation – W end	W	.jpeg & .raw
118	Tr1, 019 & 020	Pre-excavation	W	.jpeg & .raw
119	Tr1, 019 & 020	Pre-excavation	W	.jpeg & .raw
120	Tr1, 019 & 020	Pre-excavation	W	.jpeg & .raw
121	Tr1, 021	Slot 3 – Charcoal lens at base of 021	E	.jpeg & .raw
122	Tr3, 011 & 023	Darker deposit 011 in centre of slot	SW	.jpeg & .raw
123	Tr1, 021	West facing section	E	.jpeg & .raw
124	Tr1, 021	East facing section	E	.jpeg & .raw
125	Tr1, 021 & 022	Slot 3 post-excavation	N	.jpeg & .raw
126	Tr1, 021 & 022	Slot 3 post-excavation	W	.jpeg & .raw
127	Tr2, 006/008	Slot 4 – Mid-excavation	E	.jpeg & .raw
128	Tr2, 006/008	Slot 4 – Mid-excavation	W	.jpeg & .raw
129	Tr2, 006/008	Slot 4 – Mid-excavation	W	.jpeg & .raw
130	Tr1, 019	Post-excavation	E	.jpeg & .raw
131	Tr1, 019	Post-excavation	W	.jpeg & .raw
132	Tr2, 006 & 022	Slot 3 – Post-excavation	W	.jpeg & .raw

Photo No.	*Area & Context No.*	*Description*	*Taken From*	*Format*
133	Tr2, 006 & 022	Slot 3 – South-west facing section – N end	SE	.jpeg & .raw
134	Tr2, 006 & 022	Slot 3 – South-west facing section – SE end	SW	.jpeg & .raw
135	Tr2, 006 & 022	Slot 3 – South-west facing section – SE end	NW	.jpeg & .raw
136	Tr2, 006/008	Slot 2 – Mid-excavation	SW	.jpeg & .raw
137	Tr2, 006/008	Slot 2 – Mid-excavation	W	.jpeg & .raw
138	Tr2, 006/008	Slot 2 – Mid-excavation	NE	.jpeg & .raw
139	Tr2, 006/008	Slot 2 – Mid-excavation	E	.jpeg & .raw
140	Tr1, 002 & 003	Elevated shot in the rain	W	.jpeg & .raw
141	Tr1, 002 & 003	Elevated shot in the rain	W	.jpeg & .raw
142	Tr2, 006	Elevated shot in the rain	E	.jpeg & .raw
143	Tr2, 006/008	Slot 3 – possible turf line in section	SW	.jpeg & .raw
144	Tr2, 006/008	Slot 3 – possible turf line in section	SW	.jpeg & .raw
145	Tr2, 006/008	Slot 3 – possible turf line in section	SW	.jpeg & .raw
146	Tr2, 006/008	Slot 3 – possible turf line in section	SW	.jpeg & .raw
147	Tr2, 006	Slot 4 – Eastern end – Mid-excavation	E	.jpeg & .raw
148	Tr1, 002 & 003	Post-excavation – Elevated shot	W	.jpeg & .raw
149	Tr1, 002 & 003	Post-excavation – Elevated shot	W	.jpeg & .raw
150	Tr2, 006	Post-excavation – Elevated shot	E	.jpeg & .raw
151	Tr2, 006	Post-excavation – Elevated shot	E	.jpeg & .raw
152	Tr2, 006	Post-excavation – Elevated shot	E	.jpeg & .raw
153	n/a	Team shot prior to backfilling	-	.jpeg & .raw
154	n/a	Team shot prior to backfilling	-	.jpeg & .raw
155	n/a	Team shot prior to backfilling	-	.jpeg & .raw
156	n/a	Team shot prior to backfilling	-	.jpeg & .raw
157	Tr2, 009	Slot 4 after removal of 006	W	.jpeg & .raw
158	Tr2, 009	Slot 4 after removal of 006	W	.jpeg & .raw
159	Tr2, 022	Slot 2 – Post-excavation	SW	.jpeg & .raw
160	Tr2, 022	Slot 2 – Post-excavation	SW	.jpeg & .raw
161	Tr2, 006	Slot 2 – North-west facing section – W end	NW	.jpeg & .raw
162	Tr2, 006	Slot 2 – North-west facing section – E end	NW	.jpeg & .raw
163	Tr1, 004 & 029	Slot 2 extension at possible entrance	W	.jpeg & .raw
164	Tr1, 004 & 029	Slot 2 extension at possible entrance	E	.jpeg & .raw
165	Tr1, 004 & 029	Slot 2 extension at possible entrance	E	.jpeg & .raw
166	Tr1, 004 & 029	Slot 2 extension at possible entrance	E	.jpeg & .raw
167	Tr1, 004 & 029	Slot 2 extension at possible entrance	N	.jpeg & .raw
168	Tr2	After backfilling & returfing	N	.jpeg & .raw
169	Tr2	After backfilling & returfing	W	.jpeg & .raw
170	Tr2	After backfilling & returfing	W	.jpeg & .raw
171	Tr1	After backfilling & returfing	E	.jpeg & .raw
172	Tr1	After backfilling & returfing	NE	.jpeg & .raw
173	Tr1 & Tr2	After backfilling & returfing	N	.jpeg & .raw
174	Tr1 & Tr2	After backfilling & returfing	N	.jpeg & .raw

Table 7: NMRS & MPK HER sites previously recorded at Lair

Site name	*Site Type*	*MPK no.*	*NMRS no.*
LAIR	PITCARMICK SETTLEMENT	MPK4384	NO16SW 127
LAIR	ENCLOSURE, SHIELING HUT	MPK4392	NO16SW 134
LAIR	AGRICULTURAL BUILDING, FIELD BOUNDARY	MPK4399	NO16SW 140
LAIR	AGRICULTURAL BUILDING, SHIELING HUT	MPK4400	NO16SW 141
CLACHAVOID	MILL	MPK4410	NO16SW 150
ALLT CORRA-LAIRIGE / LAIR	FARMSTEAD	MPK4435	NO16SW 30
WESTER LAIR / LAIR	FARMSTEAD	MPK4440	NO16SW 33
LAIR	PITCARMICK SETTLEMENT	MPK4442	NO16SW 35
LAIR	AGRICULTURAL BUILDING, ENCLOSURE	MPK4443	NO16SW 36
LAIR	AGRICULTURAL BUILDING	MPK4444	NO16SW 37
LAIR	FARMSTEAD	MPK4445	NO16SW 38
LAIR	AGRICULTURAL BUILDING	MPK4448	NO16SW 40
LAIR	AGRICULTURAL BUILDING, ENCLOSURE	MPK4449	NO16SW 41
LAIR	AGRICULTURAL BUILDING	MPK4450	NO16SW 42
LAIR	BUILDING, CULTIVATION MARKS, CAIRNFIELD	MPK4451	NO16SW 43
CORRA-LAIRIG	ROUND CAIRN	MPK4452	NO16SW 44
LAIR	FARMSTEAD, KILN	MPK4454	NO16SW 46
LAIR	HUT CIRCLE	MPK4455	NO16SW 47
LAIR	PITCARMICK SETTLEMENT	MPK4456	NO16SW 48
LAIR	RING CAIRN	MPK4457	NO16SW 49
WESTER LAIR / LAIR	FARMSTEAD	MPK4459	NO16SW 50
LAIR	PITCARMICK BUILDING	MPK4460	NO16SW 51
TORR LOCHAIDH	HUT CIRCLE SETTLEMENT	MPK4461	NO16SW 52
LAIR / TORR LOCHAIDH	HUT CIRCLE	MPK4469	NO16SW 6
TORR LOCHAIDH	BURNT MOUND	MPK4470	NO16SW 60
CLACH A'MHOID	NATURAL FEATURE	MPK4489	NO16SW 8
COUPAR ANGUS - BRAEMAR - CORGARFF - FORT GEORGE	MILITARY ROAD	MPK5959	NO16SW 159
ALLT AN LAIR	ENCLOSURE, SHEEP FOLD	MPK9114	NO16SW 163
CLACH NA COILEACH; COCKSTANE	NATURAL FEATURE	MPK15070	n/a
LAIR / CRAY JUNCTION MEMORIAL CROSS	COMMEMORATIVE STONE	MPK16161	n/a

APPENDIX 2: DES

LOCAL AUTHORITY:	Perth & Kinross
PROJECT TITLE/SITE NAME:	Glenshee Archaeology Project, Lair
PROJECT CODE:	4268 (Northlight Heritage Code)
PARISH:	Kirkmichael
NAME OF CONTRIBUTOR:	David Strachan and David Sneddon
NAME OF ORGANISATION:	Perth and Kinross Heritage Trust & Northlight Heritage
TYPE(S) OF PROJECT:	Survey & Excavation
NMRS NO(S):	NO16SW.48, NO16SW.49, NO16SW.127
SITE/MONUMENT TYPE(S):	Pitcarmick Type Building(s), Ring Cairn, Hut Circles
SIGNIFICANT FINDS:	Turf constructed building & Metal Artefacts
NGR (2 letters, 8 or 10 figures)	NO 1387 6376
START DATE (this season)	18th June 2012
END DATE (this season)	30th June 2012
PREVIOUS WORK (incl. *DES* ref.)	Walkover & topographic survey
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	During June 2012 this project was initiated with the aim of exploring and researching the prehistoric and early medieval archaeology of Glenshee for the benefit of both residents and visitors to the area. The 2012 season focused on the excavation of three trenches across a potential medieval 'Pitcarmick' type building and the area immediately outside it. The building was one of two similar south-east to north-west orientated rectangular structures defined by turf banks previously identified by the RCAHMS. They lay end to end and were next two and aligned with a prehistoric ring cairn. Further visible archaeology located immediately next to the excavation area included prehistoric round houses, and another Pitcarmick type building. The excavation trenches were located at either end of the south eastern most of the two adjacent buildings. The north western most trench revealed the remains of collapsed turf banks that would have formed the rounded end of the building. This end of the building, constructed on a slight slope, contained no sign of stone footings for the turf wall although the frequent stone mixed in with the slumped turf material may indicate a former footing that has been incorporated into the bank material as it decomposed and worked its way down slope. The south eastern trench revealed similar collapsed turf walls with no evidence for stone footings, although areas of well preserved turf banking were noted. A probable entrance was located along with a pit inside the south eastern end of the structure, possibly representing the location of an upright supporting timber. A roughly east to west running linear depression containing evidence *in-situ* burning at its base was located running beneath the east of the structure and appeared to immediately pre date the construction of the turf walls of the main structure.
PROPOSED FUTURE WORK:	Post excavation analysis along with continued seasons of excavation & survey
CAPTION(S) FOR ILLUSTRS:	A birds-eye view of the site with Mount Blair in the distance (© George Logan/Cairngorms National Park).
SPONSOR OR FUNDING BODY:	Perth and Kinross Heritage Trust, Drumderg Wind Farm Community Benefit Fund, Cairngorms National Park, Aviva and the Society of Antiquaries of Scotland.
ADDRESS OF MAIN CONTRIBUTOR:	Perth and Kinross Heritage Trust, 4 York Place, Perth, PH2 8EP.
EMAIL ADDRESS:	dsneddon@yorkat.co.uk, dlstrachan@pkc.gov.uk
ARCHIVE LOCATION (intended/deposited)	RCAHMS (intended)

APPENDIX 3: Geophysical Survey

Geophysical Survey of the excavation site at Lair, Glenshee (2012)

Peter Morris, Geophysicist.

Prior to the start of excavations at Lair in 2012, geophysical surveying was carried out to examine the target area. A magnetic gradiometer survey of 0.7 hectares was recorded covering the Pitcarmick House to be excavated, two nearby hut circles, a cairn and three or four other Pitcarmick houses A small resistivity survey was also carried out over the immediate area of the proposed excavation. In addition, a variety of magnetic susceptibility measurements were made during the course of the excavation which provide further information about some of the features seen on the magnetic anomaly map.

Fig 1 shows the magnetic results. Measurements of magnetic field gradient were made using a Bartington type 601 magnetic gradiometer. The survey lines were orientated roughly NW-SE with a spacing of 1m and an in-line sampling distance of 0.25m. After some destriping the data was gridded to a spacing of 0.25m and then displayed using the 'Surfer' computer package. The outlines of the buildings shown overlain on the colour plot are from RCAHMS topographic surveys.

- From the plots it can be seen that:
- The hut circles (Bronze Age?) are well delineated.
- The cairn (Bronze Age?) shows significant magnetic anomalies.
- There are some anomalies associated with the Pitcarmick buildings but these tend to be rather subtle.
- There is a very strong linear anomaly cutting at an angle across the wall line of the excavated house.

There are a variety of other weak anomalies which hint at being due to fragments of structures, boundaries, tracks, or cultivation. The significance of these might be better understood if the survey was extended, so that they could be seen in a more regional context.

Magnetic Interpretation

The best situation for the magnetic detection is often when the target is a ditch dug in weakly magnetic subsoil which has been later filled in with more magnetic topsoil. This is not the case in the Lair site. The structures we see were mostly built straight on the surface without much excavation of foundations. In order that they can be detected it obviously helps if strongly magnetic material was employed in their construction. At Lair the boulders used to build the walls of the hut circles and the cairn were presumably picked up locally from the glacial drift which covers the area. These mostly derive from the Highlands and contain a reasonable percentage with magnetic lithologies. Burnt features can also be remarkably magnetic. Probable hearth stones can often be detected within hut circles (though not, apparently, in the examples mapped). If the hut was set alight at any time and the roof with its wooden supports burnt down, the magnetisation of the hut circle area could well have been enhanced. The anomalies we observe might be due to a combination of naturally magnetic boulders in the hut walls plus the effects of burning.

The turf walls of the excavated Pitcarmick house are virtually non-magnetic. There is some indication that the magnetic anomaly within the area of the house is more negative than outside but the magnetic anomaly map alone would be of little use for detecting the presence of the structure.

The most striking feature on the magnetic map is a linear feature some 25m long which runs roughly E-W crossing the N wall of the excavated building. The trend of the feature appears to bear no relation to anything else seen on the map and originally it was thought that it was due to a geological feature of some sort. Excavation proved, however, that it was a zone of burning and contained reddened sediment and rocks. The significance of this remains to be established but abundant charcoal is present so it should be possible to establish a date for the conflagration.

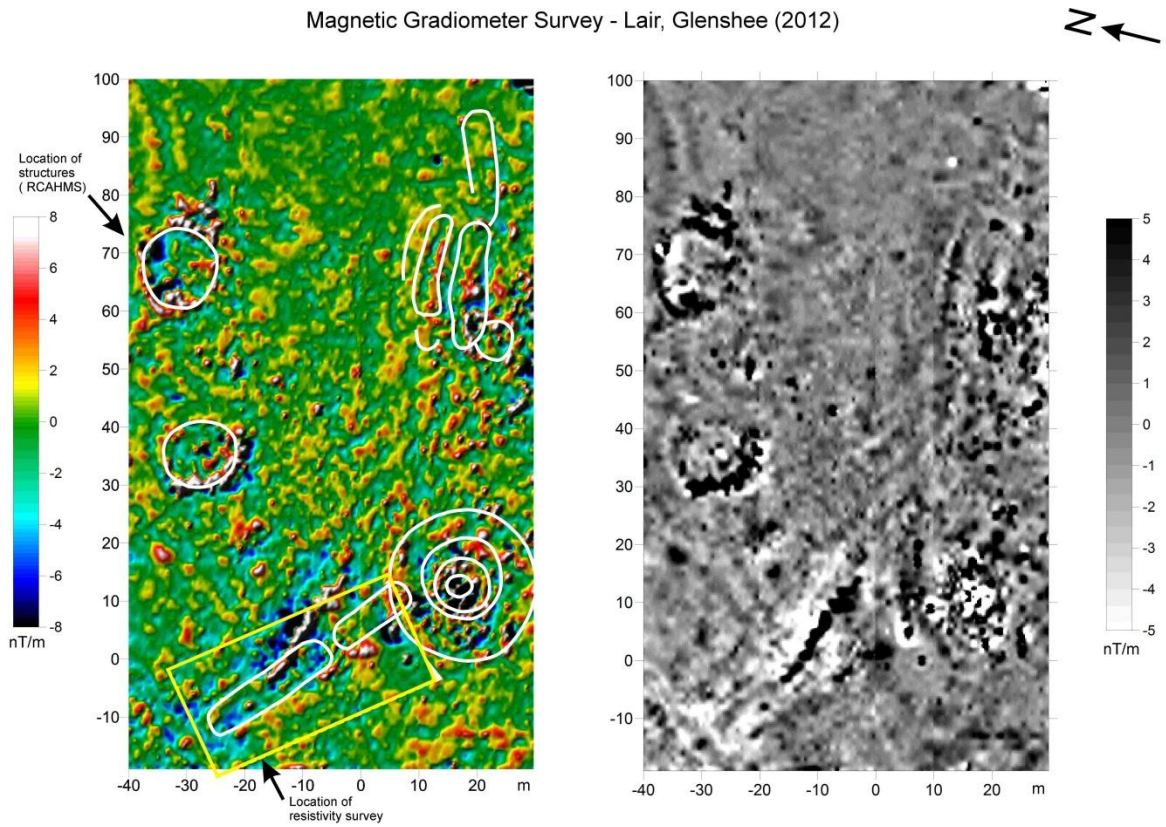

Fig 1

Magnetic Susceptibility Data

A number of magnetic susceptibility measurements were made in the trenches during the course of the excavation. In all cases an SM30 magnetic susceptibility meter was used. Three profiles were recorded across the two main trenches soon after the turf had been removed. These are shown as A-C on fig 2a. Line C was repeated at the end of the excavation when the trench was at its deepest (profile D). Finally measurements were taken, at maximum depth along the small trench opened up over the line of the strong magnetic anomaly found during the magnetic survey (profile E).

The readings in the NW trench (A) are fairly constant and low. The readings in the SE trench (B and C) show a definite increase towards the east. The more southerly line of this pair (C) shows the greater variation along it.

In fig 2b shallow line C is compared with the line measured when the excavation was at its deepest (D). There are some striking differences between the eastern half of the profiles. Two peaks in C (at about 8m) have been lost whereas D shows some significantly high peaks at 11-12m. Obviously some shallow magnetic feature has been removed during excavation at about 8m along the profile whilst strongly magnetic material has been encountered at depth at the end of line D. This latter is, of course, the burnt material which appears to produce the strong linear anomaly referred to above. Similar burnt material is found in the small SE trench, as is well shown by profile E (fig2c). A number of spot susceptibility readings were taken in the burnt deposit. Some pinkish sands showed susceptibilities in the range 15-20x10-3 SI; a reddened rock gave a reading of 10x10-3 SI. These are certainly magnetic enough to account for the observed anomaly. The fact that shallow profiles B and C show a steady increase in susceptibility as they approach the burnt feature suggest that magnetic material is leaching out in some fashion and making its way to the near surface.

There is a slight peak on profile D at a post-hole (at 6m) but this is by no means the most obvious peak on this line and suggests that magnetic susceptibility would be of little diagnostic use in searching for this type of feature locally.

A final set of measurements were made on the stones around the Bronze Age cairn. These are plotted in Fig 3. Of the 25 boulders measured 23 were only weakly magnetic whereas two were strongly magnetic. This suggests, (with extremely low statistical robustness!), that 5-10% of the local boulders might be capable of producing an anomaly detectable during a magnetic survey.

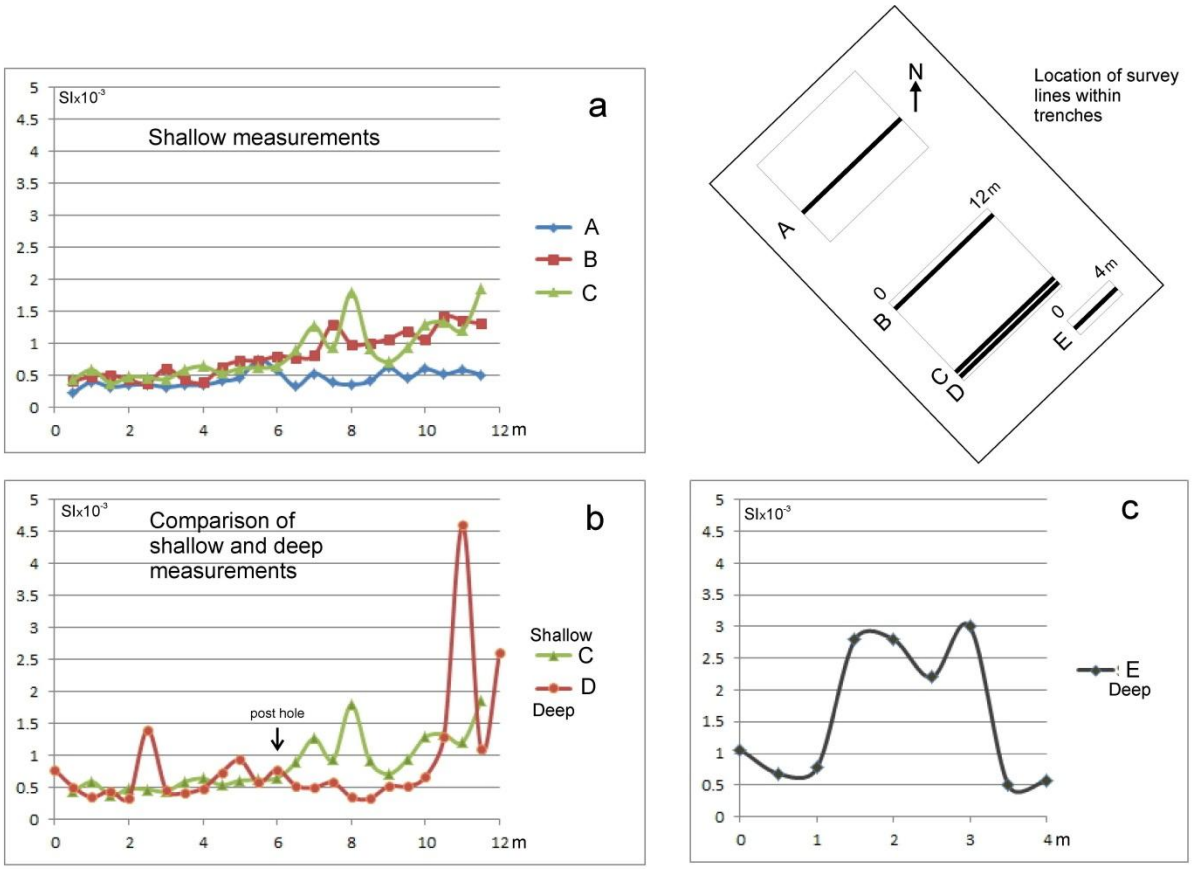

Fig 2 Magnetic Susceptibility Profiles Lair, Glenshee (2012)

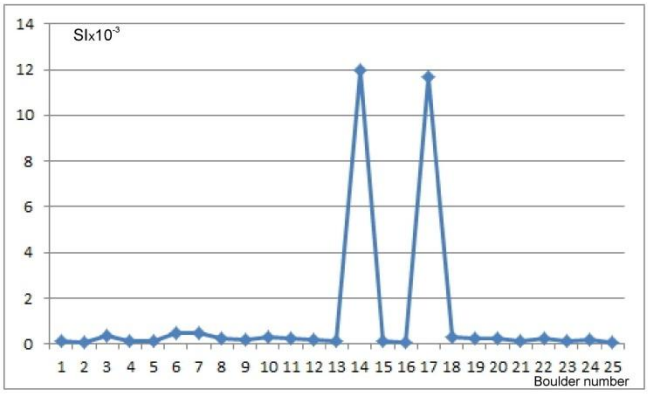

Fig 3 Magnetic susceptibility measurements of boulders around cairn - Lair (2012)

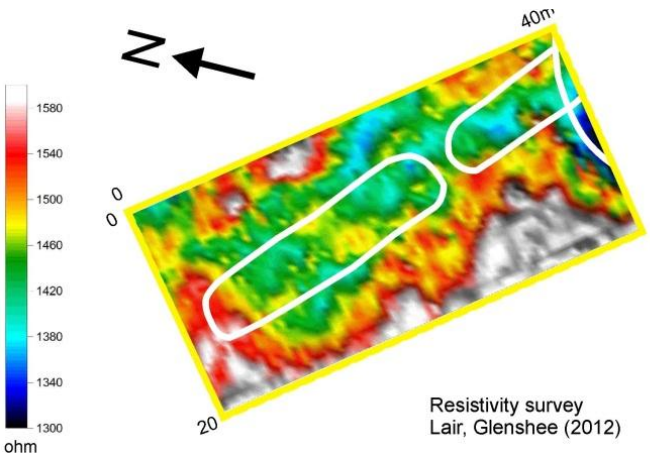

Fig 4

Resistivity Survey

A resistivity survey was made over the site of the Pitcarmick house which was to be excavated. The work was carried out using a TR Systems resistivity meter with a 0.5m probe spacing. Survey lines, orientated roughly NW – SE, were spaced 1m apart. Readings were taken every 0.5m. A colour plot of the data is shown in fig 4. The house outlines are not at all obvious and it seems probable that what is represented is mostly the general moisture variation in the topsoil. The house site is on a flattish terrace which may be damper (lower resistivity) than the steeply sloping hillside to the south which is better drained and drier (higher resistivity). In view of these results no further resistivity surveys have been attempted in the area.

APPENDIX 4: Conservation Assessment of metal finds

Conservation Assessment of Metal Artefacts, M Felter (York Archaeological Trust)

York Archaeological Trust Conservation Laboratory report 2012/28

Introduction

Five artefacts were delivered to the York Archaeological Trust Conservation Laboratory for assessment. The group consists entirely of four iron artefacts and one composite iron and copper alloy artefact. There was no organic or non-metallic material within the collection.

Aims and objectives

This report aims to meet the requirements of MAP2 (English Heritage, 1991) to produce a stable site archive. This has involved X-radiography and an assessment of the condition, stability and packaging of the finds. Standard YAT procedures were followed; 5 metallic small finds were assessed and X-rayed on one plate (X8078). An assessment of each find is presented in the table in the Appendix.

The condition of the material is summarised and indicators of unusual preservation (if any) are noted. The potential of the assemblage for further analysis and research is discussed, and recommendations made for investigative conservation and long term storage.

Procedures

The metal finds were X-rayed (Figure 1) using standard YAT procedures and equipment. One sheet of film was used (as opposed to two for a dublicate image), and given a reference number in the YAT conservation laboratory series. The X-ray number was written on each small find bag. Each image on the radiograph was labelled with its small finds number. The plate was packaged in an archival paper pocket.

All finds were examined under a binocular microscope at x20 magnification. The material identifications were checked and observations made about the condition and stability of the finds, and recorded in the Appendix below.

Condition assessment summary

The five iron objects which include two buckles (SF8 with buckle plate intact and SF9) two knife blades (SF from context 008 and SF10) and one iron/copper alloy composite object (SF from context 001), are all in relatively good condition. They are stable with no active corrosion at present. This is due to the fact that the majority of the metal within the cores of the objects has become mineralised as shown by the X-ray. The large corrosion blisters and lack of metal within the cores indicate rapid corrosion of the objects within the burial environment. The knife blade from context 008 shows some minerally preserved wood on the tang. However further investigation of the mineralised wood is unlikely to reveal wood species due to the small amount and level of preservation.

Statement of potential

Indicators of Preservation: There were no indicators of specific burial environments, the corrosion products present indicating damp, well aerated, aggressive conditions.

Evidence of dating: The angle back knife blade is similar to those from the Anglo-Scandinavian deposits at 16-22 Coppergate in York (Ottaway, 1992, 562).

Evidence of technology, craft or industry: There were no indicators of specific technology, craft or industry.

Recommendations

Recommendations have been made following the examination of the objects and their X-rays and are not based on knowledge of the site or research objectives.

Further investigation to aid identification or interpretation has been suggested for the following object and is highlighted in the assessment table below:
SF10 (knife blade).

Further investigation has been suggested for the following objects for illustration or publication (highlighted in the table below, together with time estimates).
SF from context 008 (knife blade),
SF8 buckle.

Packing and long-term storage

All materials used are archive stable and acid-free. The metal finds are stored in a desiccated environment at less than 15%RH. The desiccated environment will need to be maintained.

References

English Heritage, Management of Archaeological Projects, 1991.
Ottaway, P, 1992, Anglo-Scandinavian Ironwork form 16-22 Coppergate, The Archaeology of York, ***The Small Finds*** *17/6, Council for British Archaeology, York.*

Appendix

Table 1 Conservation assessment – Iron objects

X-ray	SF	Context	Assessment
8078	n/a	001	Labelled as 'Fe object with copper alloy banding'. Undiagnostic fragment of iron with a copper alloy strip running around one edge. The object is in good to fair condition, with not active corrosion but with a fragile edge to the copper alloy. X-ray shows the metal core of the iron to be completely mineralised, and the copper alloy to be very thin, possibly with a rivet near the centre. **Recommendations: no further action.**
8078	n/a	008	Labelled as 'Fe object'. Complete small iron whittle tang knife blade in three pieces. The breaks appear relatively fresh. The object is in good condition with no active corrosion visible. The tang shows some evidence of mineral preserved wood beneath the outer layer of soil, but probably not enough to warrant further investigation. X-ray shows the metal core to be completely mineralised and this is confirmed by the broken cross-sections. There are also several large, now stable, corrosion blisters indicating an aggressive burial environment for iron. **Recommendations: no further action unless needed for illustration or publication.**
8078	8	003	Labelled as 'metal'. Complete iron oval buckle with buckle plate that is recessed for the frame. The object is in good condition, with a thick stable corrosion crust. X-ray shows the metal core to be almost completely mineralised with large corrosion blisters on one side. The image also shows a rivet hole at the end of the buckle plate. **Recommendation: no further action unless needed for illustration or publication.**
8078	9	021	Labelled as 'Fe'. Complete iron buckle frame with intact pin. The object is in good to fair condition, with no active corrosion at present. One patch shows evidence of past active corrosion but this looks stable. The surface is covered with soil of over medium thick dark

			red corrosion products. X-ray shows the metal core to be completely mineralised with large corrosion blisters to the buckle frame. The view at 90° shows the looped attachment of the pin. **Recommendation: no further action.**
8078	10	021	Labelled as 'Fe object ?knife'. Almost complete whittle tang knife blade with angled back. A very small portion of the tip is missing. The object is in good, stable condition, covered with thick soil layers of a medium thick dark red corrosion crust. X-ray shows the metal core to be completely mineralised on the cutting edge, even voided near the tang, but with some metal surviving towards the back where the shape is thicker. **Recommendations: a cross-section could be investigated to show the shape of the blade and tang.**

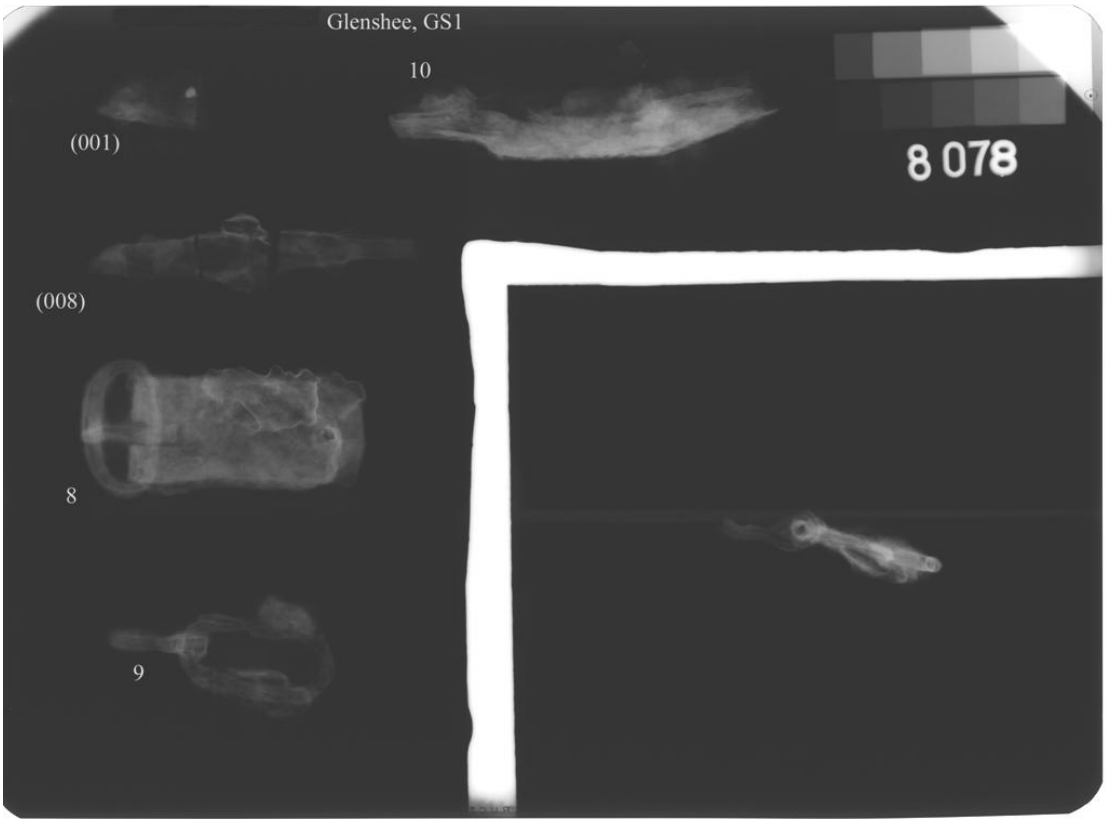

Figure 1: X-ray image of Glenshee Iron finds