

**A9 Loaninghead Junction, Perth & Kinross:
Post-Excavation Analyses**

Addendum Report

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Introduction

1. This report presents the findings from the post-excavation analyses undertaken on the material recovered from the archaeological works required by Muir Homes in respect to the proposed plan for the A9 Loaninghead Junction Development, Auchterader. Cognisance of past reports are assumed within this document and as such it should be read as an addendum to the pre-existing Data Structure Report (Gordon 2008, Gordon 2009)
2. This programme of works was designed to mitigate the adverse impact on the archaeological remains within their proposed development area. It commenced with an evaluation (Gordon 2008) and concluded on-site with the excavation of targeted areas (Gordon 2009). The scope and remit of these on-site works were agreed with Perth and Kinross Heritage Trust and Perth and Kinross Council through a Written Scheme of Investigation (Matthews 2008) which was subsequently amended to agree the post-excavation analyses.

Summary of excavation

3. The excavation area (NGR: NN9210 0964) which was located to the immediate north of Peterhead Standing Stone (AMH 4061), covers the footprint of the proposed roadway in the area of Evaluation Trenches 11 and 12. It ran for a distance of 120m along the proposed roadway and was 7m wide, giving a total area of 840m².
4. The excavation revealed a series of negative features consisting of a possible ring groove, a curving post row of prehistoric date and linear ditches which showed evidence of prehistoric activity within close proximity to the Peterhead Standing Stone.

Pottery

Ann MacSween

5. Two undecorated body sherds from different vessels were recovered from the excavations at Loaninghead Junction, from the fill of pit/posthole (34). They were interpreted as possibly of late Neolithic/Early Bronze Age date but this is not conclusive from their form and fabric and they could equally be of later prehistoric date.

Catalogue

Context 35; Find 2A

6. Body sherd. The fabric is fine sandy clay with c70% rock fragments which has fired hard and is grey with a red exterior margin. Interior surface sooted. Th 15mm; Wt 13g

Context 35; Find 2B

7. Body sherd. The fabric is fine sandy clay with c60% of rock fragments which has fired hard and is grey. Coil-constructed – there is an unsmoothed coil junction on the exterior surface. The exterior surface is sooted. Th 10mm; Wt 7g

Palaeo-environmental Analysis

Jackaline Robertson

8. Ten bulk samples were subject to environmental processing at AOC Archaeology, for the extraction and identification of material suitable for AMS dating. The samples were wet sieved in laboratory conditions using a standard flotation technique through a 1mm and 300 µm mesh (Kenward *et al*, 1980). Both the residues and flots were collected and slowly dried before being sieved. Charcoal 4mm and larger was removed for further analysis.
9. The results are presented in Table 1. Charcoal fragments were present in all ten samples but were only collected from six samples as the remaining four contexts contained fragments that were smaller than 4mm. *Quercus* sp (oak) was the only species identified

from the six samples. No bark was present on the charcoal fragments. The only other find consisted of a poorly preserved charred cereal caryopsis from sample 2.

Table 1: Charcoal

Sample	Context	Species	Weight (g)	Modern Contaminants	Comments
2	008 (slot 1)		N/A	Yes	Not suitable for dating
3	008 (slot 3)		N/A	Yes	Not suitable for dating
6	18	<i>Quercus</i> sp	4.0g		
7	31	<i>Quercus</i> sp	2.7g		
8	45	<i>Quercus</i> sp	5.2g		
9	59	<i>Quercus</i> sp	6.3g		
13	33	<i>Quercus</i> sp	0.1g	Yes	Not suitable for dating
15	51		N/A	Yes	Not suitable for dating
16	35		N/A	Yes	Not suitable for dating
20	47	<i>Quercus</i> sp	0.1g	Yes	Not suitable for dating

Key: N/A too small to weigh

Discussion

10. Of the six samples which contained identifiable charcoal fragments, two should be discounted for dating as they contain only small fragments which did not exceed 0.1g, and are considered most taphonomically insecure. Samples 2, 3, 13, 15, 16 and 20 also contained large quantities of modern contamination such as *Chenopodium album* L (fat hen), *Galeopsis* sp (nettle), *Polygonum aviculare* L. (knotgrass), *Persicaria lapathifolia* L. (pale persicaria), *Raphanus raphanistrum* L. (wild radish), spores, roots, insects and insect eggs. This indicates that the charcoal recovered from these six contexts was probably redeposited material. There is noticeably less modern contamination present in samples 6, 7, 8 and 9 which also contained the greatest quantities of charcoal.
11. Only oak (*Quercus* sp) charcoal was recovered from the processed material. As oak is a long lived species it is not ideal for radiocarbon dating unless the outer tree rings can be isolated; which was not possible in these samples. Of the ten contexts submitted for analysis the most suitable for dating are samples 6, 7, 8 and 9. The fragments of oak charcoal most suitable for dating have been isolated as single entities from these samples.

Radiometric Dating

12. All material for dating was identified and submitted to Scottish Universities Environmental Research Centre for radiocarbon dating. Calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
13. The availability of reliable material for dating was limited by the small number of features which contained suitable charcoal fragments and also by the species type retrieved being that of oak. This is a long-lived material which is better suited for dating when the outer tree rings can be isolated; unfortunately this could not be done in this case. Despite this however, the samples selected gave good coverage across the line of postholes and the aim was to give a coarse guide as to the date of the postholes giving us at least a broad idea of their period.

Table 2: Radiometric Dates

Lab Code	Context	Material	$\delta^{13}C$	BP	2 σ Calibrated Date Range
SUERC-26427 (GU-20131)	(018) Fill of posthole	Charcoal: Quercus sp. (oak)	-27.9%	5060 \pm 35	3960BC – 3770BC
SUERC-26428 (GU-20132)	(031) Fill of posthole	Charcoal: Quercus sp. (oak)	-25.2%	4980 \pm 35	3930BC (11.0%) 3870BC 3810BC (84.4%) 3650BC
SUERC-26429 (GU-20133)	(059) Fill of posthole	Charcoal: Quercus sp. (oak)	-26.1%	5010 \pm 35	3950BC – 3700BC

14. The results of this evidence give a 2 σ Calibrated Date Range spanning between 3950BC and 3705BC. This places the postholes as being of broadly early Neolithic date. This was a time when a number of large ceremonial enclosures were constructed, some of which were post-defined, and it may support the idea that this was part of a ritualistic complex of the same nature.

Discussion

The linear features and area of burning

15. The series of linear features which were present on the site were mostly judged to be modern in date with the exception of two, [007] and [011], which were undateable. Also seen as undateable was the area of burning (068). During the post-excavation works samples from linear feature [007] were sent for processing and found to contain a high concentration of modern contaminants. This would infer the date of the feature to be potentially modern. No further works were carried out with regard to feature [011] or (068).

The alignment of postholes

16. The row of pits/postholes at Loaninghead Junction can be placed as broadly early Neolithic in date through radiometric dating of wood charcoal samples which are spread along the alignment. While the pottery fragments recovered have proven to be undiagnostic, they can still be placed within the prehistoric period. Hence it is reasonable to infer that the character of the inclusions within the pits/postholes are broadly contemporaneous and derive from early Neolithic activity.
17. The presence of a post pipe in feature [050] and stone packing in others suggests that at least some of these features contained upright timber posts, some of which rotted *in situ*. The asymmetrical form of some of the features ([017][036]) may suggest that posts were removed, with the post base damaging the posthole on extraction. Certainly these features appear to be hand dug and potentially all were excavated for the settings of posts or uprights. The coherent form of the row is highly suggestive of this being a contemporaneous feature or structure (Gordon 2009).
18. The interpretation of the features is made difficult by the limited extent of the excavation area which only gives a narrow insight into what could possibly be present there. This therefore means that interpretation has to remain highly speculative.
19. Possibly of most significance to the interpretation of the site is the close proximity of the alignment to the Peterhead Standing Stone which is roughly 30m to the southeast and also to the Loaninghead Symbol Stone located roughly 435m to the northeast. Set within a gently rolling landscape the posthole alignment runs roughly WSW-ENE and sits fairly

level with the Peterhead Standing Stone on a gentle slope heading uphill from it. While an early Bronze Age date would normally be ascribed to the Peterhead Standing Stone, it is possible that the stone may have an earlier origin, possibly contemporary with the posthole alignment or, if not, shows a continuity or deliberate reuse of the site across different periods.

20. The prehistoric site at Meldon Bridge, Peeblesshire (Speak & Burgess 1999), which included a large Neolithic enclosure, also had evidence of three standing stones. Speak & Burgess refer to the idea of replacing timber structures with permanent stone settings, quoting the term "lithicization" (1999, 104). This is taken from Wainwright (1979) whose site at Mount Pleasant, Dorset featured an earlier timber structure which was later replaced by a stone 'cove' around 1700 BC, a phenomenon he stated to be widespread in Britain at that time. An increasing range of sites from early prehistoric Scotland exhibit this trend of the replacement of timber with stone such as at Machrie Moor, Arran (Haggerty 1991) and at Cairnwell, Portlethen (Rees 1997). It is possible that the standing stones nearby to the posthole alignment at Loaninghead Junction also represent a need to permanently mark this site in some way; perhaps due to a change in use of the site or in order to commemorate earlier significance.
21. The Neolithic enclosure at Meldon Bridge was also created through timber posting and it is possible that the alignment at Loaninghead Junction may be part of a larger enclosure similar to what is found there. At Cowie Road, Bannockburn (Rideout 1997), a post-defined enclosure dating to the mid fourth to early third millennium cal BC was excavated. The irregular boundary of the enclosure gave the appearance of having been constructed in "short, slightly curved rows of between six and eight post-holes" (1997, 40), a construction style similar to what can be seen along the posthole alignment at Loaninghead Junction. This site, which also included a pit-defined enclosure dating to the late fifth to mid fourth millennium cal BC, was believed to belong to the tradition of Neolithic rectilinear monuments including cursuses and long mortuary enclosures. Other sites which also have timber defined enclosures that may present parallels include Douglasmuir, Angus (Kendrick 1995) and Balfarg/Balbirnie, Glenrothes (Barclay and Russell-White 1993).
22. While similarities can be drawn between the posthole alignment of Loaninghead Junction and other Neolithic enclosures such as that at Meldon Bridge and Cowie Road, it is still difficult to be sure of the nature of the alignment when so little of the site is visible. The enclosures mentioned above are all of a substantial size, Cowie Road for example is 90m long and 27.5m wide, and it is possible that the alignment at Loaninghead Junction, which measures approximately 29.5m long, merely shows a small section of an enclosure which may extend to much larger dimensions. Without further information however, this has to remain speculative.
23. Timber monuments during the Neolithic are starting to be viewed as being vital to the studies of the period (Brophy 2005) and their existence at other sites show them to be substantial features set within larger ritualistic and ceremonial complexes. The presence of the standing stones in the surrounding landscape at Loaninghead Junction could potentially reflect a similar instance here and may show the posthole alignment to be of wider significance than can be seen. Perhaps the excavation work at Loaninghead Junction also reflects a need to recognise the potential that standing stones are not always solitary features, as is often implied in their Scheduling, but in fact could sit within areas of significant associated buried archaeology.

Conclusion

24. Archaeological excavation works were carried out at the Loaninghead Junction, Auchterarder in response to the development of a greenfield site. Aside from a series of either modern or undateable features, these works uncovered a series of 26 possible postholes and one stakehole forming an irregular alignment orientated roughly ENE-WSW. The radiometric dating taken from some of the postholes gave the feature an early Neolithic date of between 3950BC and 3705BC. It is probable that the alignment may represent a larger site which extends outwith the narrow area of the excavation.

25. The posthole alignment drew some parallels with timber defined enclosures present on other sites from around this period and it is also notable that standing stones are present within the surrounding landscape. By looking at the alignment within both its physical setting and in the larger setting of what was happening elsewhere at the time, it may be possible to see it as potentially being part of a larger ritual complex than what can be seen within the small area which has been excavated. However, as only a narrow insight into the area has been achieved any views on this will have to remain highly speculative.

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