

**M3 Clonee-North of Kells Motorway Scheme
Lismullin National Monument (A042 & E3074)**

Director's Excavation Progress Report 4

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Summary

Quadrant A

Excavation in Quadrant A is complete and digitization of post excavation plans is also nearing completion.

Quadrant C

Excavation in Quadrant C, which commenced on 14th September, has to date concentrated on the inner enclosure and on the linear field ditch, which bisects the post enclosure. Excavation of the field ditch was prioritized in order to assist in keeping excess water away from the inner enclosure. 25m of the 36m length of this ditch in Quadrant C has been excavated with two baulks left *in-situ* in order to collect samples for possible OSL dating. Seventeen of the sixty inner enclosure postholes have been excavated to date. Postpipes are visible in a large proportion of the postholes and the current interpretation is that, similar to the outer enclosure, the posts appear to be driven. The postholes vary in maximum diameter between 0.13m-0.28m with an average of 0.22m and between 0.15m-0.24m in depth with an average of 0.21m. In addition to being slightly larger than the outer enclosure posts it would appear that the construction of the inner enclosure was more regular than the two outer rings, the spacing between the posts was closer and there were fewer gaps between posts. No artefacts have been recovered from the inner enclosure to date.

A further two postholes have been excavated in the area between the inner enclosure and the slot trench at the end of the funnel shaped avenue. These have smaller dimensions than the inner enclosure postholes (average 0.11m diameter by 0.09m deep). It is not currently possible to relate these features to the enclosure.

A range of additional features have been excavated at the west and south of the inner enclosure. These include five pits, three spreads, five postholes and seven stakeholes. Currently there are no apparent spatial patterns that could aid with the interpretation of these features. The spreads are located directly west of the linear field ditch and one of them contained some small fragments of later Bronze Age pottery.

Geoarchaeological sampling

Dr. Steven Lancaster (Headland Archaeology Ltd) and Dr. Helen Lewis (School of Archaeology, UCD) visited the site on the 20th September to review ongoing sampling strategies and to examine the sectioned palaeosoil over the inner enclosure. They examined a slot-trench excavated through the palaeosoil in the inner enclosure. They both concurred that the base of an ancient soil survives in this area, which may contain chemical signatures of activities that were taking place on the interior. Geoarchaeological samples have been collected from the palaeosoil on a grid interval of 2m. The section through this soil has been recorded and a kubiena thin section sample has been collected for further analysis.

Dr. Lancaster also carried out a geoarchaeological assessment of the western landtake section to ascertain whether or not a greater depth of archaeological deposits may have been present in the interface between the modern ploughsoil and the archaeological deposits as visible and exposed on site. His assessment concluded that only the overlying ploughsoil had been removed and that mechanical stripping has not impacted on the underlying archaeological deposits. A record of Dr Lancaster's site visit and findings is provided.

Site Conditions

Intermittent heavy rainfall from 20th-24th September caused some flooding on site. It was noted that the sandbag cordon was keeping excessive silt from accumulating inside the enclosure and that the excavated field ditch that bisects the post enclosure was retaining most of the water from flowing into the inner enclosure from the northeast. The sump hole allowed for the pumping of surface water collecting at the lowest point of the enclosure. However there was a strong flow of water down slope into the inner enclosure from the southeast of the site. In order to ameliorate this the silted up field ditch to the south of the post enclosure was re-excavated. It is now anticipated that a combination of the sandbag bund, the sump hole, the excavated ditches and the use of barrow boards will assist in avoiding any further rain related damage to the site.

Introduction

Site works commenced on 7 August 2007, following approval to commence from the Minister's Advisory Committee on 2 August.

As per standard procedure all works on site are recorded by reference to a grid, which divides the site into 10m² areas. In addition the site has been divided into four separate areas or quadrants: Quadrant A at NE, Quadrant B at SE, Quadrant C at NW and Quadrant D at SW (Fig 1¹).

The initial site clean-back and supplementary pre-excavation plan was carried out from 7–13 August in Quadrant A. Following additional geophysical survey and soil sampling for geoarchaeological study, as described below, excavation of the planned features in Quadrant A commenced on 15 August and is now complete. Following the same sequence of trowel clean-back, supplementary pre-excavation planning, magnetic susceptibility survey and control soil sampling, excavation commenced in Quadrant C on 14 September and is ongoing.

The excavation is being carried out by twenty-eight archaeologists divided into four teams, each led by a senior supervisor. Supervisory staff attend weekly site meetings to review the ongoing works.

Topographic Survey

Prior to excavation an aerial topographic survey was carried out by BKS. The results of this survey have been produced as digital terrain models onto which the motorway landtake has been superimposed along with the preliminary excavation plan of the enclosure, the souterrain and the ringditch, and the new ringditch identified by geophysical survey outside the landtake to the SW of the enclosure.

¹ Figure 1 Site grid and quadrant layout with preliminary pre-excavation plan of site (in blue) and supplementary pre-excavation plan of Quadrants A & C (in black), ACS Ltd.

Geophysical Survey

Magnetic Gradiometer Survey

The magnetic gradiometer survey identified a pear-shaped anomaly in Quadrant A, which is labeled 'A' on the interpretive drawing. It was interpreted as being likely to represent a ditch, which appears to act as an enclosure adjacent to a large linear ditch. The potential pear-shaped enclosure measures 31m N-S and 23m E-W. In addition a small number of isolated circular anomalies, which could represent pits or postholes, were identified at the southern end of the pear-shaped enclosure.

No trace of a pear-shaped or similar enclosure has been identified through excavation in this area. Following post excavation recording it is proposed to excavate a box section through the edge of the identified geophysical anomaly in an attempt to identify the origin of this anomaly. The correlation between the anomalies identified on the magnetic gradiometer survey and the features confirmed as archaeological during excavation is ongoing, however excavators have reported that in general features close to the anomalies identified by the gradiometer survey have tended to be slightly richer in charcoal.

Magnetic Susceptibility Survey

A magnetic susceptibility survey of Quadrant A was undertaken by Earthsound on 13 August. This detected a number of discreet zones, which appear to relate to natural geology.

Under examination on site in the northeastern corner the high readings appear to relate to an area of underlying boulder clay, while at the northwestern corner and along the eastern side of Quadrant A the low readings refer to underlying gravels and sand respectively. At the southwestern corner, the high reading may be due to the presence of the palaeosoil that is located around the inner enclosure. This soil has been left *in situ* to be excavated and recorded as part of the 'key area' identified around the inner enclosure.

The magnetic susceptibility survey of Quadrant C was undertaken by Earthsound on 13 September and the preliminary results are attached. In summary the combined surveys to date appear to suggest that there is a moderate degree of MS enhancement around the outside of the Outer Enclosure. In Quadrant C to the south of the later field ditch another zone of high MS data

corresponds to previous magnetometer responses, which suggest burning. This area corresponds to a number of pit features surrounded by an arc of postholes as visible pre-excavation. The inner enclosure contains some moderate MS enhancement with a concentration in the northern half which corresponds with the previous magnetometer survey responses and the features visible on the ground pre-excavation. There is strong MS enhancement just outside the inner enclosure on its NE side which corresponds very well with the enhanced patch identified in the magnetometer data. This may be associated with the slot trench identified on site, which curves around this part of the inner enclosure. The enhancement funnels out in a NE direction. This may represent human activity on this axis or enhanced material may have been ploughed out in this direction.

Geoarchaeological sampling

Dr. Steven Lancaster (Headland Archaeology Ltd) and Dr. Helen Lewis (School of Archaeology, UCD) visited the site on the 20th September to review ongoing sampling strategies and to examine the sectioned palaeosoil over the inner enclosure. They examined a slot-trench excavated through the palaeosoil in the inner enclosure. Dr Lancaster concluded that the base of an ancient soil survives in this area, which may contain chemical signatures of activities that were taking place on the interior. Geoarchaeological samples have been collected from the palaeosoil on a grid interval of 2m. The section through this soil has been recorded and a kubiena thin section sample has been collected for further analysis.

Dr. Lancaster also carried out a geoarchaeological assessment of the western landtake section to ascertain whether or not a greater depth of archaeological deposits may have been present in the interface between the modern ploughsoil and the archaeological deposits as visible and exposed on site. His assessment concluded that only the overlying ploughsoil had been removed and that mechanical stripping has not impacted on the underlying archaeological deposits. A record of Dr Lancaster's site visit and findings is provided.

On completion of the clean-back and geophysical survey in Quadrant A and in advance of the commencement of excavation, geoarchaeological samples of approximately 200g (1 small bag) were collected from the subsoil at 5m grid intervals, on 14-15 August. Approximately 100 samples were collected from Quadrant A. The grid samples are registered in a separate

geoarchaeological sample register and are being retained on site for future assessment and analysis.

Dr Lancaster visited the site on 21 August to review the sampling methodology. A supervisor has been assigned to specifically coordinate sampling on site in accordance with the methodology agreed with Dr Lancaster, to ensure consistency of approach. In addition to grid samples, small sub-samples of all excavated archaeological deposits are being retained for geo-chemical analysis. The sampling strategy was reviewed to ensure that sufficient and appropriate samples were being retained for each requirement.

During this visit the excavated features in Quadrant A were examined. This included a box section excavated through two enclosure postholes, described below. This section had revealed a thin deposit layer between the postholes which was interpreted as a thin layer of palaeosoil and subsoil which had survived in a natural hollow. It was proposed that this palaeosoil would be sampled using a kubiena tin.

Additionally, a proportion of half-sectioned enclosure postholes were examined in order to establish their formation process. It was proposed that post-hole F3323 would be box-sectioned and sampled using a kubiena tin to include subsoil, primary and secondary posthole fills for geo-chemical analysis.

The potential buried soil within the interior is located around the inner enclosure and has not been cleaned back yet although a small portion of it extends into the quadrant currently under excavation. This soil will be sampled at a smaller grid interval of 2m. Some additional localized patches or areas of darker soil were noted in Quadrant A and it was agreed on site that these would be planned and sampled for geo-chemical analysis.

The control geoarchaeological sampling of Quadrant C took place between 13-17 September. The methodology was identical to that in Quadrant A except over the inner enclosure where the sampling frequency was reduced from 5m to 2m intervals.

Palaeoenvironmental sampling

In accordance with the method statement, a sample of all deposits and 100% of the fill material from each cut feature in Quadrant A is being retained for dating and palaeoenvironmental

purposes. These samples will be processed through a flotation tank and sieves to extract suitable material for analysis.

Due to the large quantity of material being generated as a result of this extensive sampling exercise, a supervisor has been appointed, in addition to two assistants, to supervise the archiving of samples and finds.

Excavation

Two hundred and forty features or possible features have been excavated in Quadrant A. One hundred and three of these have been found to be non-archaeological including a modern geotechnical pit. One hundred and thirty-seven features are interpreted as archaeological - eighty are enclosure postholes, thirty-two are postholes off the line of the enclosure, fourteen are small pits inside the enclosure, eight are small pits outside the enclosure, one field ditch, one hearth, and one furrow.

Quadrant C

Excavation in Quadrant C, which commenced on 14th September, has to date concentrated on the inner enclosure and on the linear field ditch, which bisects the post enclosure. Excavation of the field ditch was prioritized in order to assist in keeping surface water away from the inner enclosure. 25m of the 36m length of this ditch in Quadrant C has been excavated with two baulks left *in-situ* to collect samples for possible OSL dating. Seventeen out of a total of sixty postholes have been excavated from the inner enclosure. Postpipes are visible in a large proportion of the postholes and the current interpretation is that, similar to the outer enclosure, the posts appear to be driven. The postholes vary in maximum diameter between 0.13m-0.28m with an average of 0.22m and between 0.15m-0.24m in depth with an average of 0.21m. In addition to being slightly larger than the outer enclosure posts it would appear that the construction of the inner enclosure was more regular than the two outer rings, the spacing between the posts was closer and there were fewer gaps between posts. No artefacts have been recovered from the inner enclosure to date.

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Quadrant A

Excavation is complete in Quadrant A and post-excavation plans are currently being digitized.

Part of this quadrant corresponds with ‘the northwestern segment of the outer enclosure’, which was identified as one of three key excavation areas in the Supplemental Method Statement for Lismullin National Monument (02 August 2007). In the northwestern segment key area, the pattern of postholes is more complex and there are a number of additional features clustered around the outer enclosure. Excavation of these features is complete and analysis is ongoing. No stratigraphic relationship has been recorded between the enclosure and these features. Their size, shape and fills are broadly similar to the range of size, shape and fills of the enclosure postholes, however these are not distinctive enough for this to be meaningful. One of these features however, in Grid 12, has produced sherds of what has been preliminarily identified as later Bronze Age coarse ware pottery (Eoin Grogan pers comm.).

One of the additional features identified in this key area included a pit from the surface of which numerous sherds of what has been identified as middle Bronze Age domestic cordoned urn pottery (Eoin Grogan pers comm.) have been collected. Preliminary investigations indicated that this pit did not appear to be stratigraphically related to the outer enclosure. Considering the early Iron Age C14 date received for the stakeholes, it was considered important to verify this and attempt to establish the relationship between this pit and the site as a whole. Excavation of the pit has been completed and has confirmed that it is not possible to stratigraphically relate the pit to the post enclosure. The excavated feature is an extremely shallow depression from the fill of which further sherds of identical pottery have been recovered. It would appear that this feature had been heavily truncated.

A range of dispersed small features including fourteen pits or postholes and a hearth have been recorded inside the enclosure. No distinct spatial patterns have been identified. Three small shallow pit features in Grid 3 have produced sherds of what has been preliminarily identified as later Bronze Age pottery (Eoin Grogan pers comm.). In addition a furrow and a modern square-shaped geotechnical pit have been excavated inside the enclosure in this quadrant.

Eight small pits or postholes have been excavated outside the enclosure.

To date none of the enclosure postholes have produced any artefacts, however their fills remain to be sieved. The current evidence of a number of apparently dispersed features producing bronze age pottery of different periods, and the early iron age C14 dates from a selection of enclosure postholes appears to indicate that these dispersed features represent earlier activity and are not directly related to the enclosure.

Enclosure Postholes

Excavation of the enclosure postholes in Quadrant A is complete. A total of eighty enclosure postholes have been recorded, sampled and fully excavated in Quadrant A. A further thirty-two postholes off the line of the enclosure ring have been excavated. The postholes have dimensions ranging between 15-23cm in diameter and between 15-23cm in depth. The postholes are generally arranged at 0.4-1m intervals and the enclosing rings 1.5-2.5m apart with apparent localized variations in their spacing.

Preliminary examination of the half sectioned postholes on site by Dr Steven Lancaster, as described above, concurs with the excavator's interpretation that the posts were most likely driven into the ground (rather than being placed into a prepared posthole) and that the clay fill surrounding the postpipe has resulted from half driven posts being manually moved to gain more purchase in the ground before being driven further. As described above, a thin section sample from a specific posthole has been proposed in order to investigate this theory further.

A thin clay layer c. 2cm deep was recorded in the box section, between the two postholes. Three possible interpretations were initially considered for this deposit:

- That it is the remains of an earthen bank, revetted by the two concentric outer rings of posts – this might imply that there was a timber facing between the posts.

- That it is a trampled ground surface - this might imply that the outer concentric rings delineated a processional routeway.
- That it is a localized concentration of buried topsoil/palaeosoil similar to the layer recorded around the inner enclosure.

However, preliminary examination of this deposit on site by Dr Steven Lancaster, as detailed above, suggests that it is unlikely to be a trampled surface or bank material. A thin section sample of both this deposit and the underlying subsoil is to be taken for further analysis. An additional box section has been excavated through two postholes in Grid 12 in order to test if the palaeosoil recorded in Grid 11 extends through this area. No evidence of a similar deposit has been identified.

Linear Ditch (F3611)

Excavation of the east-west aligned ditch is complete in Quadrant A. The ditch is cut by a figure-of-eight cereal drying kiln outside the enclosure on the basis of which a date range of late Iron Age to early medieval is currently suggested. Within Quadrant A it is 33m long by 0.95m wide by 0.4m deep and contains between 2 and 4 fills. The basal fills appear to have silted up over time indicating that this feature may have functioned as a drain. A ditch terminal has been identified adjacent to the eastern boundary of Quadrant A in Grid 11 representing a short break or causeway. A corresponding terminal is visible in Quadrant B where the ditch continues its course. The intersection between this ditch and a north-south aligned linear feature (F2724) in Grid 2 are being investigated. Quarter sections have been excavated at the point of intersection between these features however the stratigraphic relationship has not yet been confirmed due to the similarity of the fills. The quarter sections have been left open to the elements in an attempt to improve their visibility.

Site Conditions

Intermittent heavy rainfall from 20th-24th September caused some flooding on site. It was noted that the sandbag cordon was keeping excessive silt from accumulating inside the enclosure and that the excavated field ditch that bisects the post enclosure was retaining most of the water from flowing into the inner enclosure from the northeast. The sump hole allowed for the pumping of surface water collecting at the lowest point of the enclosure. However there was a strong flow of

water down slope into the inner enclosure from the southeast of the site. In order to ameliorate this the silted up field ditch to the south of the post enclosure was re-excavated. It is now anticipated that a combination of the sandbag bund, the sump hole, the excavated ditches and the use of barrow boards will assist in avoiding any further rain related damage to the site.