

Summary

- An archaeological watching brief was undertaken during the groundworks for a development of eight houses on land off Willow Drive, North Muskham, Nottinghamshire.
- The development site lies near the centre of the village, and 220m from the modern west bank of the River Trent.
- A previous geophysical survey observed marked striations running roughly east-west across the site: these were initially interpreted as the sub-surface remnants of medieval ridge-and-furrow ploughing.
- The excavation of house plots at the eastern and western ends of the site showed the geophysical anomalies to be caused by natural irregularities in the water-lain geological gravels, and the watching brief was discontinued.



Figure 1: Location map at scale 1:25 000.
The development site is shown in red.
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1.0 Introduction

Pre-Construct Archaeology (Lincoln) was commissioned by Whittaker Homes Limited to undertake an archaeological watching brief during the groundworks for a residential development on land off Willow Drive, North Muskham, Newark, Nottinghamshire.

These works were undertaken to fulfil the requirements of the Planning Archaeologist of Nottinghamshire County Council, and were based on a project specification prepared by Pre-Construct Archaeology (Lincoln). This approach is consistent with the recommendations of *'Archaeology & Planning: Planning Policy Guidance Note 16'* (Department of the Environment, 1990), *Management of Archaeological Projects* (English Heritage, 1991) and *Standards and guidance for archaeological watching briefs* (IFA, 1999).

Copies of this report will be deposited with the commissioning client, the Local Planning Authority (LPA), the Planning Archaeologist of Nottinghamshire County Council and the County Sites and Monuments Record. Reports will also be deposited at the Newark Museum, along with an ordered project archive for long-term storage and curation.

2.0 Site Location and Description (Figs. 1 & 2)

The village of North Muskham is situated to the west of the River Trent, to the immediate east of the A1 trunk road and 4km to the north of the town of Newark upon Trent. The development site is located in the central area of the village, and on land off Willow Drive. It is approximately 0.4 hectares in extent, and is surrounded by other residential developments to the east, south and west and to the north by pastoral land.

The development site lies on coarse loamy soils of the Arrow Association, typically gleyic brown earths and cambic gley soils that have developed on river gravels that in turn overlie deposits of Permo-Triassic Keuper Marl (BGS 1966, Hodge *et al* 1984). The village lies on an island of gravel at heights of between c10-12mAOD, while the development site lies at an average height of 9.50mAOD.

National Grid Reference: SK 7944 5905.

3.0 Planning background

Planning permission was granted for the construction of eight new dwellings with garages (planning ref. 04/00294/FUL). This permission was granted subject to the undertaking of an archaeological watching brief on all groundworks.

4.0 Archaeological and historical background

A number of Neolithic lithic artefacts that include stone axes and flint tools and arrowheads have been found within a 1km radius of the village.

North Muskham is situated in an area where dense concentrations of cropmarks (visible on aerial photographs) typically occur on the aforementioned gravel islands in the flood plain of the River Trent. Most of the cropmarks are undated, but may indicate settlement enclosures and field systems that may be attributed to the prehistoric through to the Romano-British period. The area was thus probably extensively settled during these times. Some such remains may have already been destroyed or masked by development within the village itself. However, a series of ditches, including a ring ditch and small enclosures have been recorded to the west of the site. To the south, various other cropmarks include linear features, enclosures, a pit alignment and a further ring ditch (fig. 3).

In addition, there are cropmarks of mostly undated field systems to the south-west and north-west of the site, as well a number of isolated ring ditches (Bunn, 2004).

The Domesday Survey of AD 1086 lists four landowners in the parish of North Muskham. The largest part of the parish was owned by the Archbishop of York, associated with his manor of Southwell: this land parcel is referred to only as 1½ carucates of ploughland, and no occupants are listed. The other three landholdings all comprise both ploughland and meadow. Peterborough Abbey also owned three mills, of which two paid taxes and one was 'waste', and half the profits of a fishery; Geoffrey Alselin's small estate also included a mill, as did that of the thegn Siward. Since windmills were not in use at this period, all these estates must have lain next to the Trent, probably indicating that the meadows listed were water-meadows. A total population of 23 taxable households is recorded across these three estates (Williams and Martin, 1992).

The extract from the First Edition Ordnance Survey (O.S.) map of 1884 (fig. 4) shows the development site to be surrounded on all sides by open fields with a Wesleyan Methodist Chapel situated to the north-east.

A fluxgate gradiometer geophysical survey and landscape assessment was undertaken by Pre-Construct Geophysics at the site in 2004. This did not locate any cropmark features. However, a series of linear anomalies were identified, which were interpreted as possible traces of ploughed out medieval ridge and furrow (Bunn, 2004).

5.0 Methodology (fig. 5)

The watching brief began on 25th May, 2006. The site had previously been partially levelled: as it sloped slightly from south to north, the topsoil was reduced to a remnant on the south site edge, while grass roots were still visible on the northern edge. House plots 1-3 had already been excavated and concreted, and only the upper portions of the trenches, which were already weathered, could be inspected (plate 2).

House plot 4 was excavated on 1st June, 2006. The area of the house plot was further levelled by roughly 0.5m, removing all remaining topsoil and a portion of the subsoil. The foundation trenches were then dug using a wheeled 180° excavator, fitted with a 0.5m bucket with small, flared teeth for the exterior trenches, and a 0.45m bucket with fewer and smaller teeth for the interior trenches (plate 4). Spoil was piled on the site. The excavation of house plot 7, which took place on 7th -8th June 2006, was similar, but the levelling strip for this house plot was much shallower, no more than 0.1m deep (plates 7 and 8).

Sections were hand cleaned and examined for archaeological material: all deposits observed were recorded on standard watching brief record sheets. Sample sections were drawn at scale 1:20, and located on an overall site plan. Two long sections were drawn perpendicular to the direction of the striations appearing on the geophysical survey results, in order to identify any possible remnant ridge-and-furrow. A colour photographic record of all groundworks monitored was also maintained: a selection from this record is reproduced in Appendix 1. The watching brief was carried out by R. D. Gardner.

As no archaeological material had been encountered during the excavation of house plots 4 and 7, which were considered to represent an adequate sample of the area under development, the watching brief was discontinued after consultation with the Planning Archaeologist for Nottinghamshire County Council.

6.0 Results (figs. 5-7)

The underlying natural geological deposits in the development area were recorded as context 003. They consisted of loose, water-rounded gravel and pebbles in a sand matrix, generally light grey to light yellowish-grey in colour, but with areas of mineral staining. The surface of these deposits was undulating, forming a series of gullies of irregular size running roughly east-west.

Natural 003 was sealed by a clayey sand subsoil, 002, which was up to 0.56m deep and displayed patches of mineral discolouration similar to those in 003, but less strongly marked. No archaeological material was noted in layer 002.

The overlying topsoil, 001, was friable and sandy, up to 0.40m deep where it remained to full depth. Fragments of clay pipe stems and glazed earthenware were noted, but not retrieved. Towards the eastern edge of the site, 001 contained a heavy growth of tree roots, which came up to the surface of the topsoil, indicating that this field had not been ploughed for many years.

7.0 Discussion and conclusions

The linear anomalies identified by the geophysical survey were seen not to be sub-surface remains of medieval strip ploughing: the horizon between the topsoil and the subsoil showed no traces of the shallow, regularly spaced furrow bases which form the last remnants of ploughed-out ridge-and-furrow. The geophysical anomalies seem most likely to have been caused by the undulations in the natural gravel, formed when

it was laid down as part of the bed of the Trent: the strong mineralization of the natural deposits was certainly capable of producing a geophysical signature through up to 1.0m of overlying deposits (D. Bunn, *pers. comm.*).

The Domesday Survey states that three of the four landholdings comprising 11th century North Muskham had water-mills, and so must have bordered on the Trent: unlike the fourth landholding, which had no mill and cannot be shown to have been adjacent to the river, all of these also had meadow land. It seems most likely that this meadow land would have been water-meadow, adjacent to the river and periodically flooded. The position of the site, no more than 220m from the modern bank of the Trent, indicates that it probably lay within the medieval meadow land, and was never ploughed, being too wet for arable cultivation. This theory may be supported by the findings of the earlier test-pit study, which noted a high water table on the site (Bunn, 2004).

8.0 Effectiveness of methodology

The methodology employed was entirely adequate to the requirements of the archaeological record, allowing the project to be reassessed after a representative sample had been monitored with little result.

9.0 Acknowledgements

Pre-Construct Archaeology (Lincoln) would like to thank Whittaker Homes Ltd. for this commission, and for their co-operation during the watching brief.

10.0 References

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IFA, 1999, *Standards and Guidance for Archaeological Watching Briefs.* Institute of Field Archaeologists, Birmingham.

Williams, A. and Martin, G. H. (eds.), 1992, *Domesday Book: A Complete Translation.* Penguin Books, London.

11.0 Site archive

The documentary archive for the site is currently in the possession of Pre-Construct Archaeology. This will be deposited with the Newark Museum within six months from the completion of the project.