

Archaeology on the Lincoln Eastern Bypass

Progress Newsletter: January to March 2017



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Introduction

This newsletter is the second in a series of quarterly documents highlighting the archaeological findings along the Lincoln Eastern Bypass route and the various outreach activities relating both to the archaeology and to the construction scheme. The next newsletter, covering April-June, is due out in July 2017.

Background to the road scheme

The A15 Lincoln Eastern Bypass is a 7.5km road designed to improve Lincoln's infrastructure, encourage growth, minimise traffic congestion and enhance the inter-city environment (**Plate 1**). When complete, it will start at a new roundabout on the A15 Sleaford Road and finish at the A158 Wragby Road, connecting with the existing northern relief road and becoming the next step towards creating a complete ring road around the city. The bypass is being built by UK firm Carillion Construction and will see new roundabouts built at Greetwell Road, Washingborough Road, Lincoln Road, Branston and the A15 Sleaford Road. A rail bridge between Washingborough Road and the River Witham is being constructed for Network Rail by Bam Nuttall. Local outfit Network Archaeology is conducting the archaeological investigations.

The project is backed by Lincolnshire County Council, the Department for Transport, and the three district authorities (City of Lincoln Council, West Lindsey and North Kesteven District Councils).

The aims and benefits of the scheme are: to support Lincoln's growth, reduce congestion in and around Lincoln, enhance the inter-city environment, open up land for new housing, reduce carbon emissions, improve air & noise quality, form the penultimate step towards creating a complete ring road around the city of Lincoln, and incorporate a future-proofed design where possible so that dualling of the bypass can be considered in the future.

A timeline for the project is as follows:

Dec 2012	Planning permission submitted
Jun 2013	Planning permission granted
Aug 2015	Public inquiry takes place
Feb 2016	Legal Orders granted by Secretary of State
May 2016	Diggers arrive on-site to build 130m track for access
Sep 2016	Archaeologists arrive on-site
Nov 2016	Funding confirmed by Department for Transport
Dec 2016	Network Rail begins work to build railway bridge under Lincoln-Spalding Railway embankment
Jun 2017 *	Main construction works begin
Oct 2017 *	Network Rail Lincoln to Spalding Railway line embankment closure works
Apr 2018 *	Washingborough railway bridge complete
Oct 2019 *	Bypass officially opens

*All future dates are projected and subject to change dependant on external factors.

The road scheme and the cultural heritage of Lincolnshire

Construction work is well underway at the site of the new rail bridge west of Washingborough by Bam Nuttall. The archaeological works are being conducted in the same areas, alongside the rail bridge works. Bringing in the archaeologists early means that, even with the substantial archaeological findings being made, this work will not cause any delays to the road construction programme.

Protection and enhancement of the cultural heritage of Lincolnshire is an important part of the project, and there are planning conditions that have to be implemented to ensure that any archaeological remains affected by the road are excavated and fully recorded if they cannot be avoided or protected. As

well as playing an important role in making the road network of Lincolnshire fit for the twenty-first century, the archaeological scheme is providing an exciting opportunity to look back and learn about the history of this part of the city and county.



Plate 1: Route of Bypass

come to light while the road is being built, so that these too can be properly investigated and recorded should anything be found.

Before the start of work on site

During the years of planning for the road, a programme of archaeological investigations was carried out, so that the impact of the bypass route on known archaeological sites could be minimised.

This identified archaeological sites from the last 12,000 years, spanning scatters of flint tools from Mesolithic hunter-gatherers, Bronze Age barrows or burial mounds, Iron Age and Roman settlements, a high status Roman building - perhaps a villa -, an Anglo-Saxon settlement, and a medieval monastic grange, founded by Kirkstead Abbey during the twelfth century, and continuing in use as a farm after the dissolution of the monasteries in the sixteenth century.

Many of the known sites were on the land either side of the River Witham, drawing attention to the importance of the river as a transport route in the past, especially where it crosses the drier land of the Lincoln Cliff.

A programme of work was drawn up to investigate all of the sites that were known before the start of work, so that they do not delay the construction work. All other areas of construction will be monitored in order to identify any archaeological remains that may

Overview: September-December 2016 & January-March 2017

The archaeological work has been concentrated for the entire period September 2016-March 2017 in the area between the River Witham and Washingborough Road. Initially the archaeologists had this area to themselves, but for most of the time construction works for the rail bridge has meant that careful coordination has been necessary to clear specific parts of the site of archaeology before they are needed for construction work relating to the rail bridge which is due to be installed in October 2017.

The previous Newsletter, covering the period from the start of work in September to the end of December provided a summary of the findings:

‘The archaeological evidence included concentrations of Mesolithic and Neolithic flint tools; part of a Bronze Age barrow cemetery; possible Iron Age roundhouses and burials; high status Roman buildings, field systems, pottery kilns and a potential vineyard; a medieval monastic grange comprising a boundary wall, a potential stone tower, other substantial stone buildings, stone-lined wells and metalled trackways; and finally, the remains of post-medieval farm buildings, yards, and a water management system.’

The continuing excavations (covered in more detail in the sections that follow) have characterised these remains more fully and have extended and added to them. Between the railway line and Washingborough Road, the entire scheme footprint has now been stripped of topsoil and zones of archaeological interest continue to be excavated or have been demarcated in readiness for investigation. To the north of the railway, drainage of the land has allowed the excavation area to be extended northwards, closer towards the banks of the Witham. This area is crossed by two ancient infilled river channels, one that filled up in the Bronze Age and the other in the medieval period. These have been permanently waterlogged and have the potential to preserve wood and other organic materials.

Mesolithic hunter-gatherers (12,000 to 6,000 years ago)

Stripping topsoil across the area north to the river has uncovered further struck flints (**Plate 2**).

Altogether so far, twenty-two concentrations of flints have been identified, each of which may be the site of an old working area. The majority of these areas have flints of the later Mesolithic period, but there are also areas more typical of the early to middle Mesolithic and of the early Neolithic periods.



Plate 2: Each piece of struck flint is given a numbered and its position is marked by a small flag. The flags are then surveyed, using differential GPS, to produce an accurate three-dimensional plan of the flint distribution. This is used to target squares for more intensive sampling, through the full depth of the alluvial sand.

A selection of these areas, considered to have greatest research potential and including the range of the periods represented on the site, are being targeted for more intensive sampling. This should allow a more detailed picture to be created of the life of the transient communities that used the banks of the Witham in the millennia after the last Ice Age.

Neolithic farmers (6,000 to 4,500 years ago)



Plate 3: Neolithic polished stone axe-head

have been specially brought here for use in making this axe-head. There was a steady trade in stone axe-heads in the Neolithic period and fragments of two other stone axes found on the site are made from stones from North Wales.

Other flints of this period that have been found include a leaf-shaped arrowhead, from the early Neolithic, probably before 3000 BC (**Plate 4**), and a later oblique arrowhead, of a type that was used around 2800 to 2400 BC (**Plate 5**).

The Neolithic period is the time when farming began to replace the nomadic hunting and trapping, fishing and foraging as the predominant way of life. With this change, new kinds of flint tools came into use. Very characteristic of the period are stone axe-heads, skilfully shaped by knapping flakes from a flint nodule or other suitable stone, and then smoothing and polishing the surface, to form a sharp cutting edge. The axe-head shown here (**Plate 3**) was found alongside one of the old river channels crossing the north part of the area north of the railway. It is made from a flint nodule originating in the hills of the Lincolnshire Wolds. This nodule could have been dumped in the Witham valley by glaciers during Ice Ages, but it could



Plate 4: Early Neolithic leaf-shaped arrowhead



Plate 5: Later Neolithic oblique arrowhead

Bronze Age: burials and beliefs (4,500 to 2,700 years ago)

Bronze Age burial mounds, between the railway and the river, had been eroded and ploughed almost flat over the years, but showed up as crop marks on aerial photographs and could just about be seen as slightly raised areas on the ground. Three of these are directly affected by the bypass route and are being excavated. Initially, trenches were excavated through them in a cross-shape to establish their depth and profile before the dark peaty soil layers overlying them were machined away (**Plate 6**).



Plate 6: Aerial view, in late February 2017, of the three Bronze Age barrows partly excavated. The topsoil has been stripped from around the two southern barrows, revealing the dark peaty subsoil, and quadrants excavated through the mounds (Plate 10). The course of the old river channel is shown by the waterlogged ground above the yellow excavators. This has now been drained, and excavation of the third barrow and flint scatters is underway.

In the easternmost barrow (on the right-hand side in Plate 6), a burial urn containing cremated human remains has been found (**Plate 7**). This type of pottery vessel, with a wide collar below the rim, was used in the Early to Middle Bronze Age, around 2,000 to 1,500 BC.

Although the Bronze Age saw the first use of metals for tools and weapons, flint tools continued to be used for more mundane tasks. New types of tools and methods of working often allow Bronze Age flints to be distinguished from those of earlier periods. Barbed and tanged arrowheads (**Plate 8**) are typical of the Early Bronze Age and were in use from around 2200 BC to 1800 BC, or perhaps slightly later.



Plate 7: Early Bronze Age cremation urn

Rivers are thought to have had a religious significance at this time and weapons may have been deliberately dropped into them as a votive offering. The bending and breaking of the end of this weapon could therefore, perhaps, be interpreted as an act of sacrifice, symbolically killing the weapon before offering it up to the river.



Plate 9: Bronze rapier blade (scale = 20cm)

However, another recent find, from the lip of one of the old,



Plate 8: Early Bronze Age barbed and tanged flint arrowhead

infilled river channels and just to the east of the most northerly of the Bronze Age barrows, was a bronze dagger or rapier blade.

The end of this narrow tapering blade had been bent and the point broken off (**Plate 9**). This damage could have occurred in use, but a high proportion of the weapons that have been found from this period are often in watery places, with their ends broken off.



Plate 10: South-east quadrant of the south-western barrow, partly excavated, looking westward toward the Cathedral

Iron Age (2,700 to 2,000 years ago)

Part of the area to the north of Washingborough Road was occupied in the later Iron Age, but subsequent disturbance, described in the following sections, has removed much of the evidence from this period. One recent find, however, seems likely to positively confirm the presence of an Iron Age phase pre-dating the Roman conquest of the middle of the first century AD: a large pottery jar, containing a range of artefacts (**Plate 11**). This vessel was in a fragile condition when it was found and is currently being carefully conserved.

Roman (AD 43 to 410)

The Roman conquest, in AD 43 and the years following, brought a much richer material culture to Britain. This is apparent in the finds from the site to the north of Washingborough Road. This area was already suspected of being the site of a large Roman building, from the range and quantity of finds found there over the years, and from the preliminary archaeological work carried out in 2003.

The foundations of a complex of late Roman buildings have now been exposed. The walls were built of stone, but the large



Plate 11: Pottery vessel, provisionally dated to the Iron Age, being excavated



Plate 12: Fragment of box-tile from a Roman hypocaust

quantities of Roman tiles show that it would have had a tiled roof. The tiles include box flue tiles, which would have been part of a hypocaust system (**Plate 12**), whereby the hot gases from a fire below the building were channelled up through the walls, acting as a very effective central heating system.

Since the start of 2017, excavations have shown that these buildings extend further than was revealed in the closing months of 2016, emphasising that this was an important site, possibly a villa, that would have formed the heart of a large estate. In addition to wall foundations, stone-lined wells and a sunken tank have been uncovered, the latter provisionally interpreted as a fishpond.

These discoveries add to the lime kiln, and the two well-preserved pottery kilns, found at the end of 2016. Piles of rejected or misfired 'wasters' found around the kilns include a high proportion of 'fine wares' showing that the kilns were used for table-ware rather than for more utilitarian vessels such as cooking or storage pots.

The incorporation of the southern part of Britain into the Roman Empire allowed exchange with the rest of Europe, and several of the finds provide evidence of this trade. The foot of a Samian ware bowl (**Plate 13a**), for instance, would have been from a vessel made in an area of Gaul, now southern France, which specialised in mass production of moulded pottery vessels, imitating the style of Greek pottery from the Island of Samos. These vessels are often stamped with the name of the potter (**Plate 13b**), allowing their place of origin to be precisely located.



Plate 13a: Upturned base of Samian ware bowl, imported from Gaul, with (left, Plate 13b) the maker's stamp

Among the Roman tile fragments found are some with hoof- or paw-prints (**Plate 14**), presenting a picture of the moulded tiles left out in the open to dry, where animals could easily stray over them.



Plate 14 Roman tiles with footprints of deer (left) and cat

Several more Roman graves have been uncovered, to add to those found in late 2016 (**Plate 15**).

There is a large area beneath and to the west of the power lines that has been stripped of topsoil but not excavated yet. This area has a number of features showing in the stripped surface which align with the Roman remains already excavated, suggesting that they are of the same period and so holding the promise of revealing more information about the structures and workings of the Roman settlement.



Plate 15: Pottery vessels found in Roman graves

Middle Saxon graveyard (AD 680-900)

Towards the end of 2016, a group of at least eighteen graves, aligned east-to-west in the Christian tradition, were uncovered in the eastern part of the area to the south of the railway (**Plate 16**). These were initially thought to be medieval. However, bones from two of the skeletons were radiocarbon dated and returned results, with over 95% confidence, that both were from the period AD 680 to 890, in the middle years of the Anglo-Saxon period.

As excavations proceeded, another, much larger group of graves was uncovered, further to the west. This second group may well be part of the same graveyard as the Middle Saxon group. So far, around thirty of the skeletons from the western group have been uncovered (**Plate 17**), but there are indications that there could be 300 or more. Two bones from skeletons in the eastern group have been submitted for radiocarbon dating and the results are expected in early April 2017.

If this confirms that these skeletons date to the same period of time, it would imply that this was an important religious site in the first couple of centuries of English Christianity. One possibility is that one of the Roman buildings on the site might have survived and been pressed into use as a church or chapel. The presence of an early Christian graveyard at this location could have also influenced the subsequent siting of the medieval grange in this same location.



Plate 16: Mid-Saxon skeleton, with coffin remains



Plate 17: excavating one of the skeletons from the more westerly group

Medieval monastic grange, and associated buildings

A medieval monastic grange was known to have been established close to Washingborough by the Cistercian monastery of Kirkstead Abbey in the twelfth century AD. The grange would have included a working farm, probably concentrating on raising sheep for wool, which could be sold to provide income for upkeep of the abbey. The documents that refer to it do not give its exact location, but areas of raised land, either side the railway, were thought to be a prime candidate for the site of this grange. This has now been confirmed by the excavations, which have uncovered extensive foundations of stone buildings.

South of the railway, these foundations show a range of buildings, set roughly at right angles to Washingborough Road. These foundations overlap the Roman buildings to the west, so that in places the foundations of the grange buildings can be seen to cut through the Roman foundations. This shows

little or nothing of the Roman buildings was visible above ground when the medieval buildings were planned and built. Nevertheless, the Roman remains would have provided a ready source of stones for the grange, the re-use of which would account for dressed stones used in the grange foundations.



Plate 18: Remains of the malthouse of the medieval grange

Beneath one of the grange buildings, two pits with sloping sides, revetted with stone slabs, have been investigated. Both have signs of heating, especially at their western ends, where flues seem to have entered (**Plate 18**). These have been interpreted as the substructures of malthouses. These would have been covered by a wooden malting floor, where the germinating barley would have been warmed by hot

air circulating beneath. One of the adjacent buildings would have probably been a brewhouse. At a time when drinking water would have been of dubious purity, beer, in moderation, would have been a regular mealtime drink for the monks and their guests in the grange. Another structure in this complex has been interpreted as a bakehouse, and stone-lined wells from the period have also been excavated.

The area north of the railway included the foundations of stone walls enclosing the more substantial foundations of a square tower, partly excavated in 2016. The purpose of the tower is not clear, although its location overlooking the Witham at the approaches to the city would have had considerable strategic significance, and may have allowed the abbey to police, and profit from, trade along the river. Part of this area is currently covered by a temporary trackway for access to the works on the railway crossing (visible as a sandy strip at the bottom of Plate 5), but excavations of the base of the tower and surrounding structures are planned to resume later in 2017.

The central part of the grange complex may survive beneath the railway embankment; if so, it will remain undisturbed by the construction of the bypass.

Post-medieval farm (1540-1900 AD)

Following the Dissolution of the Monasteries in 1537, the grange continued to be used as a farm until at least the end of the eighteenth century, and documentary sources show that the post-medieval farm at this time was referred to as 'Sheepwash Grange'. This is presumably the name that it was known by in



Plate 19: Aerial view of the foundations of post-medieval farmhouse

the monastic period, although no earlier documentary evidence for this has been found.

New farm buildings were constructed at this time, to the east of the medieval remains. This area (**Plate 19**) was excavated in the closing months of 2016, and is currently the site of the construction compound for the contractors (Bam Nuttall) building the rail bridge. The remains of several rectangular stone buildings, including a large barn, were recorded, along with other structural remains such as drains,

cobbled yard surfaces and stone culverts, one of which carried a lead pipe. Finds from this area included large scatters of roof tile fragments and a large millstone for grinding grain. Several pieces of medieval dressed stone had been re-used in the post-medieval buildings.

By 1845, this building had been abandoned, in favour of a new site on the higher ground south of Washingborough Road, where the present 'Sheepwash Grange' still stands and is still lived in. Once again, this building incorporates stonework re-used from the earlier farmstead, continuing the nine-hundred-year story of life and work at this site.

Behind the scenes

This newsletter has singled out a few of the finds, but so far there have been tens of thousands, enough to fill several hundred bread crates (**Plate 20**), with more being added daily! All of these will be cleaned, catalogued and safely stored. Fragile or corroding finds will also need painstaking conservation work, so that they can be kept in a stable condition. Four skilled and experienced 'pot-washers', busy working through crates of finds, are backed up by a team of specialists who will assess and report on all the finds.

Meanwhile, the excavation team has produced around 15,000 sheets of written records, 12,000 photographs, 1,600 drawings, over 1,000 soil samples and hundreds of GB of survey and photogrammetry data.

Outreach and public engagement

The Eastern Bypass is one of the largest archaeological projects ever to have been carried out in Lincolnshire, and there has already been a huge and growing interest in the findings.

These newsletters are available to view on LCC's website, along with a series of photograph montages illustrating progress. LCC's Communications Department has produced a short video of the excavations, which has been published online. Through LCC, the findings have also been aired on Radio Lincolnshire. Further videos and radio interviews may be forthcoming.

A team representing LCC, Bam Nuttall (the rail bridge contractor), Carillion (the road construction contractor) and the archaeological contractor (Network Archaeology) is working together to roll out a programme of collaborative outreach from spring 2017 onwards, including a variety of open days such as career days (in construction and in archaeology), volunteer days, and HSE days.

The Lincolnshire Echo has been running articles about the excavations, based on information supplied each week by Network Archaeology. A *Find of the Week* series has been initiated, concentrating on one specific artefact and what we can learn from it about the lives of the earlier occupants of the Witham Valley, and of the wider prehistory and history of the county.

The Collection in Lincoln will be staging a display of finds, including the *Finds of the Week* and lots more besides, from early May 2017, and it is hoped that this will help to stimulate and sustain the interest of a wide and diverse range of people. This may lead onto a more comprehensive exhibition at The Collection in 2019.

Facebook and Twitter pages dedicated to the project are due to be rolled out in May 2017. These will provide updates on archaeological discoveries as they are made.

Naturally, there has been huge interest among local history groups, especially from those in the villages closest to the bypass route, and Network Archaeology staff have also given a number of presentations to these groups. A programme of talks is continuing, including groups in Washingborough, Branston, and Navenby arranged for the coming weeks and months.

Public access to the site presents difficulties as it is a very busy and active construction site, where safety is of paramount importance. Nevertheless, a party of York University archaeology students have visited the site, and more site tours are being organised.

The findings from the excavations are of interest to archaeologists throughout the region and further afield, and there are plans to publish articles in *British Archaeology* (the Council for British Archaeology (CBA) magazine) *Current Archaeology*, and on the *pasthorizons.com* website.



Plate 20: Just a small fraction of the finds so far

Archaeological works planned for the second quarter of 2017

Excavation of the burial barrows and sampling of the flint scatters to the south of the River Witham will be largely completed, and investigations of the medieval tower will resume. Ongoing excavations between Washingborough Road and the railway are now scheduled for completion by the summer. Archaeological investigations in the other high potential areas along the road scheme will commence in May 2017 and will occupy the summer months. Archaeological monitoring of additional areas during the construction of the road will happen during 2017-18. Processing and analysis of the artefacts and records will be ongoing throughout 2017 and beyond.

The programme of outreach, to share the archaeological findings with the communities of Lincoln, and to educate and involve the public about the construction of the road, will continue. This will include press releases, updates on the LEB webpage, Facebook and Twitter, and where practicable, open days and site tours. School visits and local society talks are also taking place and/or being planned.

Acknowledgements

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Archaeological works are being conducted by Network Archaeology, who also prepared this newsletter.

Further details regarding the road scheme in general can be found on:

www.lincolnshire.gov.uk/leb