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Archaeological Services

Archaeological attendance and recording
during groundworks at LCFC King Power Stadium
Raw Dykes Road, Leicester

NGR: SK 58259 02808

Leon Hunt



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For: Leicester City Football Club Ltd

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Summary

Archaeological attendance and recording was undertaken at Leicester City Football Club (LCFC), King Power Stadium, Raw Dykes Road, Leicester during the excavation of trial pits and observation pits excavated in advance of the construction of a new arena at the stadium. The site lies close to the Scheduled Monument of the Raw Dykes, the possible remains of an aqueduct into the Roman city of Ratae Corieltavorum (now Leicester).

A total of three pits were observed, within Car Park E to the east of the main stadium building. A fourth pit was proposed, but abandoned. One pit contained a large amount of fuel ash lying over buried soils and alluvium with natural clay and sand beneath. The other two pits contained demolition debris and fuel ash over natural sand. No archaeological remains were identified.

The archive for the site will be deposited with Leicester City Museums Service with accession number A19.2019.

Introduction

In accordance with National Planning Policy Framework (NPPF) Section 16 *Conserving and Enhancing the Historic Environment* this document forms the report for archaeological attendance and recording undertaken at Leicester City Football Club (LCFC), King Power Stadium, Raw Dykes Road, Leicester (NGR: SK 58259 02808).

It details the results of work that was undertaken in July 2019 and follows the strategy of work set out in the Written Scheme for Investigation (WSI; ULAS 2019). The work was carried out on behalf of Environmental Dimension Partnership Ltd (EDP) as environmental consultants to LCFC (hereafter 'the client').

The proposals for the site include the construction of a new arena at the stadium. The archaeological attendance took place during the excavation of geo-technical trial pits and observation trenches in advance of the construction of the new arena.

The archaeological work was to observe trial pits within Car Park E to the south-east of the main stadium close to the line of the Raw Dykes Scheduled Monument.

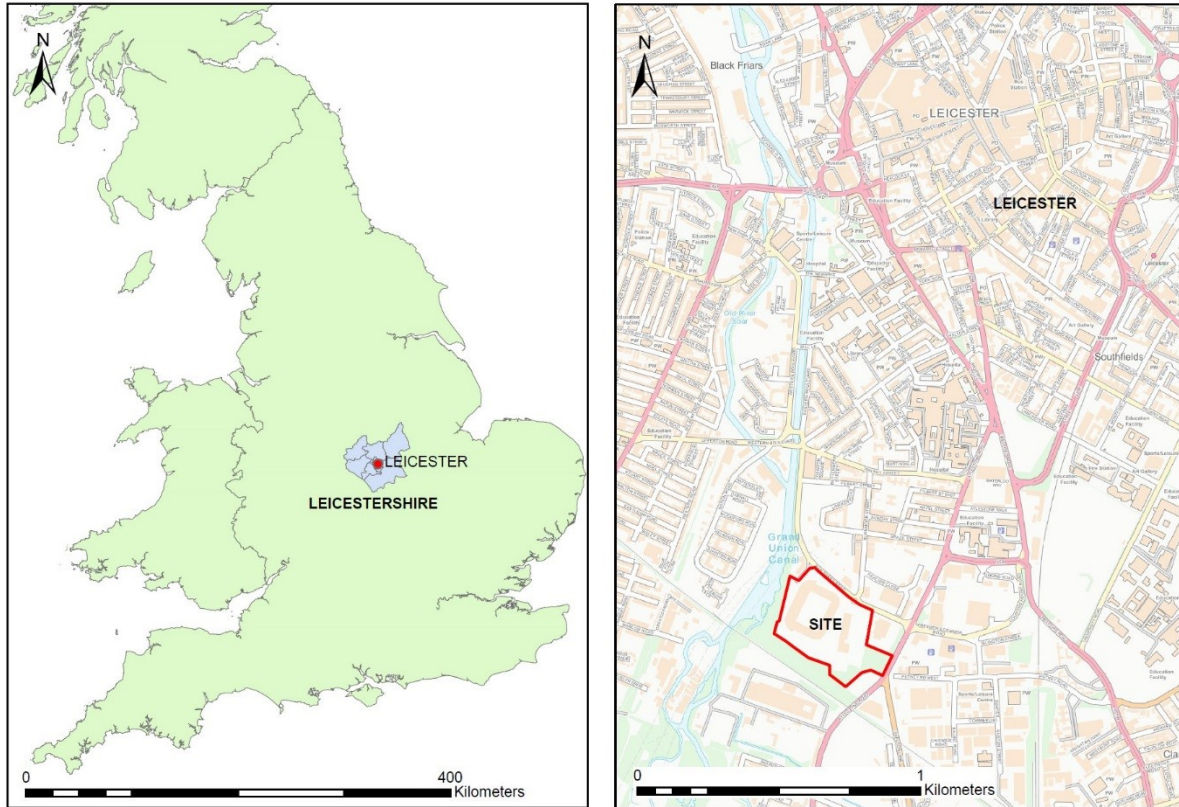


Figure 1: Site location

Site Location, Topography and Geology

The Leicester City Football Club King Power Stadium lies in the city suburbs around 1.5km south-west of Leicester City Centre on the eastern bank of the River Soar/Grand Union Canal (Fig. 1). It lies south of Raw Dykes Road with the monument itself – the Raw Dykes earthworks – to the south-west (Fig. 2).

The trial holes and boreholes were to be excavated in several areas around the stadium but the targeted trenches for archaeological work were all situated within Car Park E, which lies to the south-east of the main stadium building (Fig. 3).

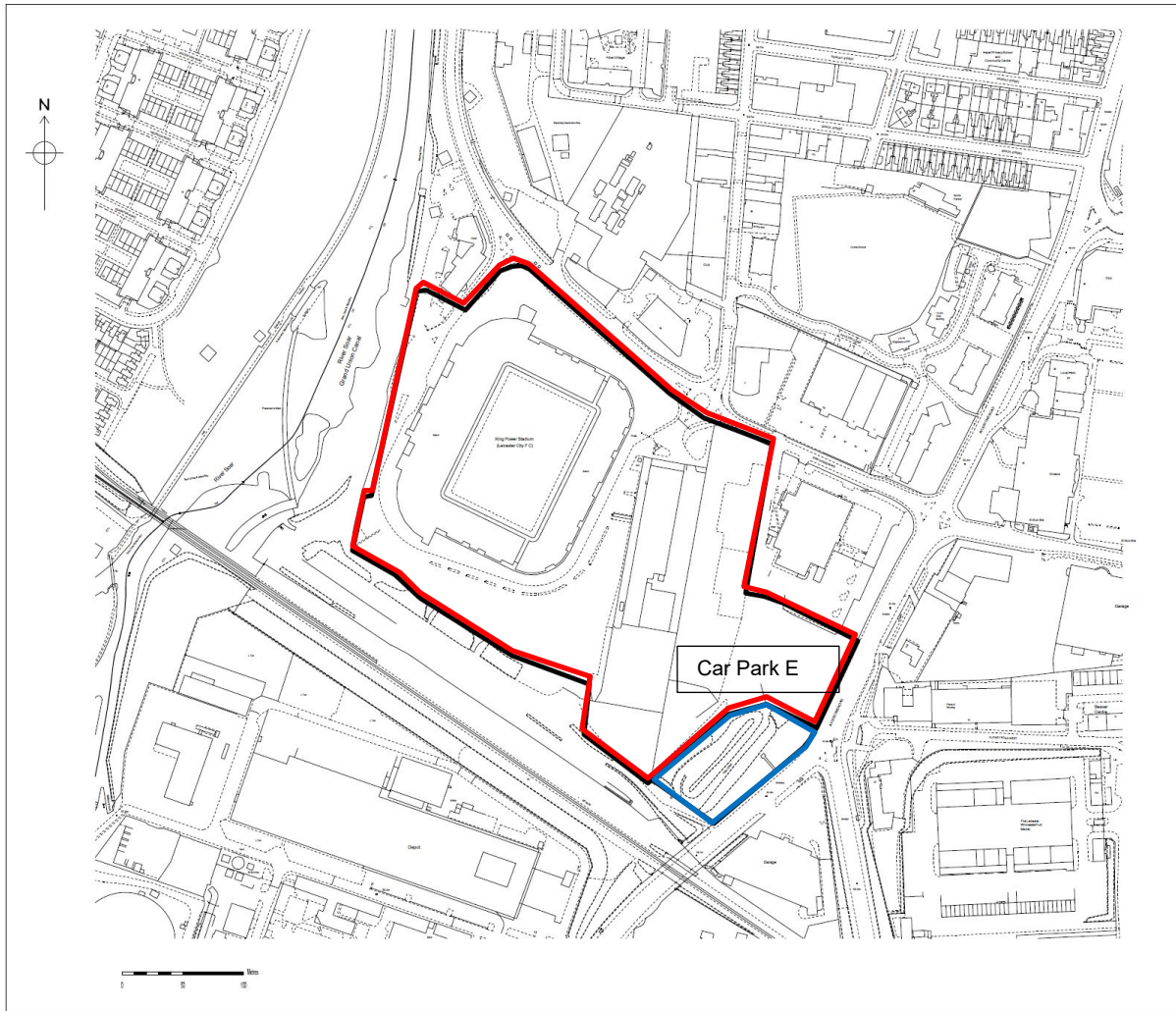


Figure 2: Plan of King Power Stadium (red) and Raw Dykes Scheduled Monument (blue)

The total area of the stadium and car parks is 9.4 hectares. Car Park E covers 2.0 hectares. The land at Car Park E was flat and lay at a height of 57m aOD. The northern side of the site was covered in hard standing for the car park, with much of the southern and eastern sides of the site covered in flattened demolition layers, undergrowth and broken ground (Fig. 4).

The Ordnance Survey Geological Survey of Great Britain, Geology of Britain Viewer indicates that the underlying geology is likely to be Branscombe Mudstone Formation – Mudstone beneath superficial deposits of Alluvium - Clay, Silt, Sand and Gravel.

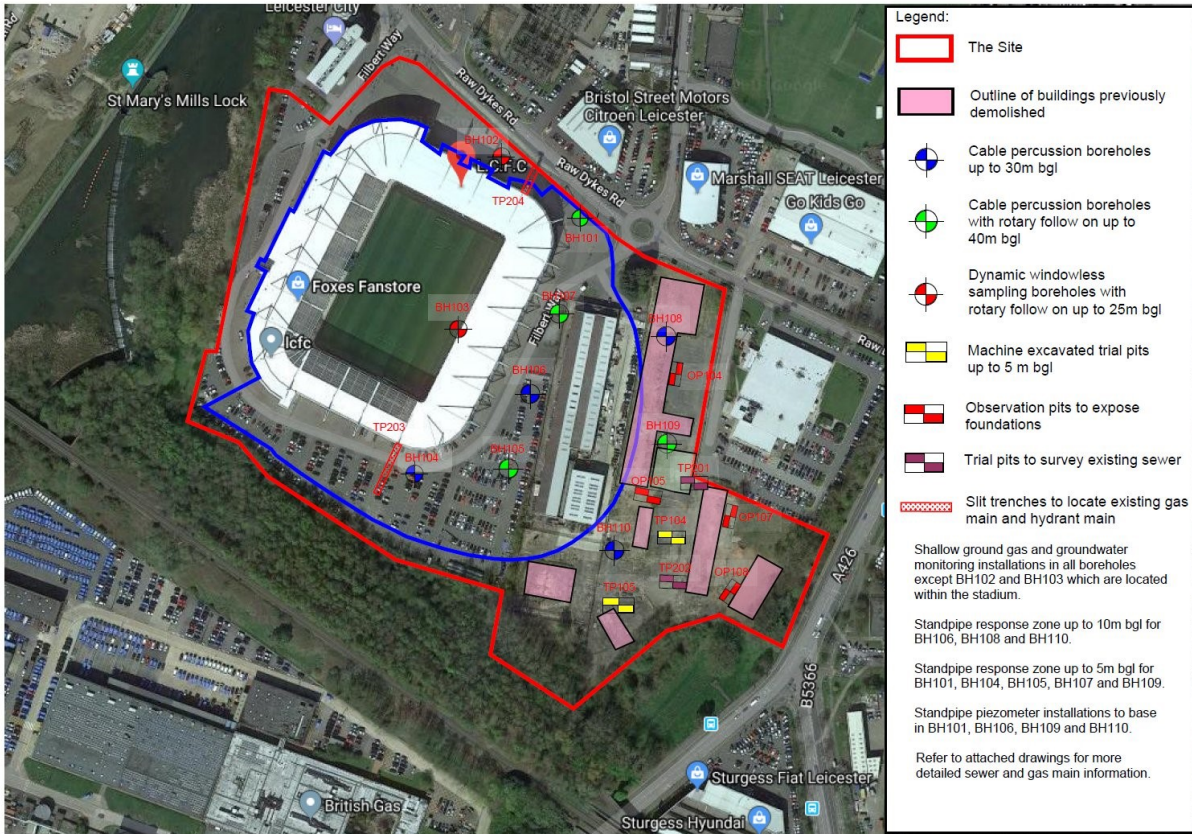


Figure 3: Proposed borehole and test pit locations. Plan provided by client



Figure 4: Car Park E from the north, looking south

Archaeological and Historical Background

The site lies at some distance to the south both of the Iron Age settlement on the east bank of the Soar in Leicester and also the Roman town and its suburbs. In the medieval period, the site lay in the south field of the borough.

The Scheduled Monument of the Raw Dykes (MLC299) lies about 200m to the south-east. This is a linear earthwork with a ditch and banks, thought by some to be an aqueduct that supplied fresh water to the Roman town, although there is no definite evidence to support this interpretation. A fragment survives as a substantial earthwork south-east of the site (SM 1017391). The earliest known documentary reference to the earthworks is contained within the Lord Mayor's accounts for the Borough of Leicester of 1322 which refer to the 'Rowedick'. The etymology is considered to suggest that the name was originally derived from the linearity of the earthworks, the present form 'Raw Dykes' representing a corruption of this.

The earthwork is orientated on an approximately northeast-southwest axis following the 60m contour. It consists of parallel banks defining a flat-bottomed linear depression approximately 110m in length, a maximum of 20m in width and 2.5m in depth. The north western bank reaches a maximum height of approximately 4m above ground level on its western side and is up to 17m in width at its base. The south-eastern bank rises to a height of about 2.5m above the central depression on its western side but is only approximately 0.6m high on its eastern side due to a rise in ground level.

The Raw Dykes was originally significantly longer, Thomas Roberts, writing in the middle of the 18th century, said [the Raw Dyke] 'now continues 36' (all the way) wide in the bottom; about 76' at the top; and at the SW end 16' deep. From the Southgate to the outmost end of the town, called St James' Chapel is 1600 feet. And from St James' Chapel to the NE end of the Rawdike is 2180 feet'. This indicates the dyke extended no further north in the 18th century than is recorded on the First Edition Ordnance Survey map of the 1888. Additionally, given the various antiquarian references to the total surviving length, c.667 yards (610.36m), it is clear that the Dykes extended no further south in the mid 18th century than the southern boundary of the SM. Subsequent development during the early 20th century has reduced the earthwork to its present length. The Ordnance Survey map of 1930 shows that the earthwork had been levelled within the evaluation area by this time.

A fully excavated section of the Raw Dykes was recorded by Kathleen Kenyon in 1938. This showed it to consist of two banks, apparently unrevetted, that defined a broad ditch within which was a much narrower central channel. The layout and nature of the earthworks are considered to suggest that the narrow cut within the centre of the ditch represented the main water channel and was designed to increase the flow of water by concentrating it within a constricted space. In addition the orientation of the earthworks suggests that the Saffron or Knighton Brook, located approximately 1km south of the site would have been the most plausible source of water to feed the aqueduct. She identified what she believed to be worn 1st-century pottery from the western bank. She believed that this proved that the earthwork was not pre-Roman in date and that the earthworks were constructed during or immediately after the 1st century AD. An internal Leicestershire Museums memo from JE Mellor in 1988 suggests that some of the material Kathleen Kenyon recovered from Raw Dykes and thought to be Roman was in fact later. Mellor questions whether some of this material was Roman and suggests that later material came from the same context. Mellor did not think that Kenyon's belief that she could date the earthwork on the basis of her trench was sound.

An archaeological evaluation was undertaken on the projected line of the Raw Dykes in 2007 (Harvey 2007). A single trench was excavated which revealed its eastern bank although its western side had been truncated. Traces of the western bank were also identified. Unfortunately

no artefactual material was recovered from Raw Dykes that may have clarified its construction date. Beyond the western extent of the feature a metalled surface that overlaid a possible paleo-channel was also recorded.

Throughout much of the late 19th century the land where the present stadium lies was farmland on the eastern bank of the River Soar, which was later canalized and a wharf added to the west of the site. The railway ran to the south of the site and from the 1930s the site was covered in a power station; with the main station located where the stadium now lies, with ancillary buildings over the area occupied by Car Park E. The new stadium was constructed to replace the football ground at Filbert Street to the north in the early 21st century.

Aims and Objectives

The main objectives of the archaeological work were:

- To identify the presence/absence of any archaeological deposits.
- To establish the character, extent and date range for any archaeological deposits to be affected by the proposed ground works.
- To record any archaeological deposits to be affected by the ground works.
- To establish the relationship of any remains found to the surrounding contemporary landscape and to advance understanding of the heritage assets.
- To recover artefacts and ecofacts to compare with other assemblages and results
- To produce an archive and report of any results.

Within the stated project aims, the principal objective of the recording was to establish the nature, extent, date, depth, and significance of the heritage assets within their local and regional context.

While the nature, extent and quality of archaeological remains within the areas of investigation for the project were unknown until archaeological work was undertaken, some initial research objectives were identified, derived from East Midlands Heritage research agenda (Cooper 2006, Knight et al. 2012, <https://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/>). The HER suggested that there was potential for archaeological deposits from the medieval and post-medieval periods. The monitoring therefore was considered to have the potential to contribute to the following research aims:

- Late Bronze Age and Iron Age. 4.3 Late Bronze Age and Early Iron Age settlements (c.1000-450 BC), 4.9 finds, craft, industry and exchange.
- Romano-British. 5.4 rural settlement patterns and landscapes, 5.5 the agricultural economy, 5.6 artefacts: production, distribution and social identity, 5.7 roads and waterways.
- Early Medieval. 6.4 rural settlement patterns, 6.7 agricultural economy and rural landscape.
- High Medieval. 7.7 the agrarian landscape and food-producing economy.

These research aims were identified based on the current state of knowledge within the area of the scheme and would be updated during the course of the fieldwork.

Methodology

The project was to involve the monitoring of the excavation of test pits and boreholes specified in the objectives, by an experienced archaeologist. It was not proposed to watch the boreholes and other ground intrusions in other areas due to the very limited potential for them to encounter significant remains and (in the case of the boreholes) the lack of opportunity to observe the excavation.

The trial holes which were to be monitored were those closest to the monument in the south-east corner of Car Park E. These were Trial Pit TP105, Observation Pits OP107 and OP108 and Trial Pit TP202. TP105 was for ground investigation and included sampling by a geologist. OP107 and OP108 were to locate the possible remains of foundations for the buildings associated with the power station, which had been demolished when the stadium was constructed, and TP202 was to locate a sewer.

Any archaeological deposits revealed were to be investigated and recorded. Should significant archaeological remains be identified that the watching brief resources were not adequate to address, the client and EDP would be notified immediately.

The archaeologist co-operated at all times with the contractors on site to ensure the minimum interruption to the work.

Any archaeological deposits encountered were to be recorded and excavated using standard ULAS procedures. Sufficient proportions of any archaeological features or deposits would be hand excavated in order to provide the stratigraphic and chronological sequence of deposits, recognizing and excavating structural evidence and recovering economic, artefactual and environmental evidence.



Figure 5: Work in progress TP105, looking north-east

A photographic record of the investigations was prepared. This included photographs illustrating in both detail and general context the principal features and finds discovered. The photographic record also included 'working shots' to illustrate more generally the nature of the archaeological operation mounted.

This record was compiled and fully checked during the course of the work.

The trial pits were excavated by a large tracked excavator fitted with a flat-bladed bucket under constant supervision by an archaeologist and a geologist or engineer (Fig. 5).

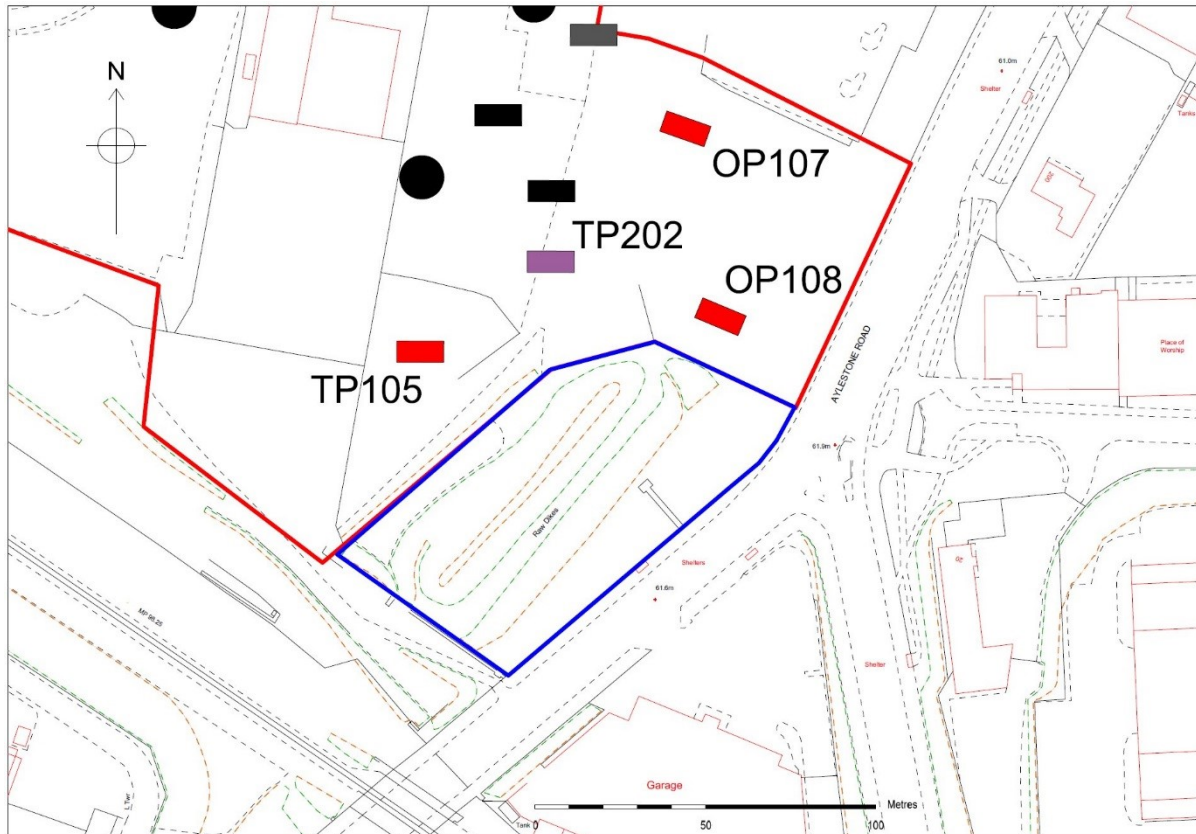


Figure 6: Plan of south-eastern edge of site showing observed trial pits (red)

Results

The site was visited on 22nd, 23rd and 25th July 2019 by an archaeologist. After some issues with the plant machinery, trial holes were observed during 23rd and 25th July 2019.

TP105

This trial hole was located on concrete, which was broken through with a pecker. The pit was orientated east to west and measured 4m x 1m (later narrowed to 0.60m). Around 0.20m of concrete and hardcore overlay a deep layer of fuel ash mixed with gravelly sand. Below this at around 1.30m light greenish-brown clay at the western end, with the fuel ash continuing at the eastern end to a depth of around 2.25m. Under this was a thin layer (around 0.25m) of relict topsoil stained black, over dark grey alluvium. Natural sub-stratum clay was reached at 2.70m. The clay became sandier at around 3.5m and then changed to sand below this to a finished depth of 4.6m (Fig. 7).

No archaeological remains were identified.



Figure 7: TP05 post-excitation, looking south-east

OP107

This observation pit was located on a crushed demolition layer and tarmac at the eastern side of the site. It measured 3.5m x 0.75m but was later extended to around 4.5m at the eastern end.

Around 0.20m-0.50m of crushed demolition debris and hardcore overlay orange sand mixed with fuel ash, with a thin layer of fuel ash above. At 1.3m this changed to a cleaner orange brown sand, and at 2.3m the sand became very clean and light reddish brown.

At 2.55m sand and gravel was encountered to the final depth of 3.1m. As no foundations were observed the trench was then extended by 1m eastwards but none were observed. No archaeological remains were identified.

OP108

This observation pit was located on a crushed demolition layer and vegetation at the south-eastern side of the site (Fig. 8). It measured 3.5m x 0.75m but was later extended to around 4.5m at the eastern end.

The upper layers consisted of mixed dumped slabs of concrete, sandy soil and fuel ash for around 0.30-0.40m overlaying reddish-brown sand to 1m depth. Under this to around 2.3m the sand became more clayey and at 2.3m there was a yellow-brown silty clay lens at the eastern end of the trench. The sand and silty lens continued to 2.8m where mid grey silty clay was encountered. The final depth was 3m. As no foundations were observed the trench was

extended by 1m eastwards; no foundations were observed. No archaeological remains were identified.



Figure 8: Work in progress on OP108, looking south-west



Figure 9: OP108 post-excavation, looking west

TP202

This trial pit was to be placed close to the southern edge of the site along with TP201 further to the north to locate a sewer. The pit was excavated to 0.6m and then encountered an unmapped service. Therefore, the pit was re-positioned a little to the side and re-attempted. The pit reached 1.1m before meeting another obstacle and therefore was abandoned.

Conclusion

The trial pits and boreholes excavated at the King Power Stadium were excavated in advance of the expansion and new development of the ground. The stadium lies close to the remains of the Raw Dykes, a Scheduled Monument thought by some to be the remains of the Roman aqueduct into the Roman city. The trial pits and observation pits close to the line of the Raw Dykes, which lies adjacent to the south-eastern edge of the site were monitored during excavation for archaeological remains.

The site lies adjacent to the River Soar and throughout most of the 20th century was occupied by a power station.

TP105 mainly consisted of dumped fuel ash from the power station lying at some depth over a buried soil layer and alluvium deposited by the nearby river. The other two observation pits (OP107 & OP108) were less contaminated by fuel ash but contained no upper layers of soil or river deposits, suggesting that the ground may have been levelled before the buildings were constructed on this part of the site, with the sand and gravel layers representing the gravel terrace of the river, which had been subject to flooding closer to the river and picked up in TP105.

The observation pits failed to locate any evidence of foundations and also showed little disturbance to suggest that the foundations had been removed. The former buildings which were located here may have been built upon a slab rather than foundations.

No archaeological remains were observed in any of the trenches. The undated silty clay layer within the sand and gravel, observed in OP108 at 2.3m, is considered to be a natural feature rather than a modern make up, perhaps related to an earlier river channel. The final trial pit to be observed TP202 was not excavated as the sewer could be located without the need for intrusive groundworks.

Archive

The archive will be held by Leicester City Museums Service under the accession number A19.2019.

Publication

Since 2004 ULAS has reported the results of all archaeological work to the *Online Access to the Index of archaeological investigations* (OASIS) database held by the Archaeological Data Service (ADS) at the University of York (see Appendix).

A summary of the work will also be submitted for publication in an appropriate local archaeological journal in due course.

Acknowledgments

ULAS would like to extend its thanks to Leicester City Football Club Ltd and Environmental Dimension Partnership Ltd for the work. Thanks are due to Socotec for their help and co-

operation with the work, particularly James Collins and Matthew O'Brien. Thanks are also due to geologist Mike Dickin for his help and co-operation on site.

The archaeological work was carried out by Leon Hunt for ULAS and the project was managed by Richard Buckley.

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Appendix : Oasis Information

PROJECT DETAILS	Oasis No	universi1-362894		
	Project Name	LCFC King Power Stadium, Raw Dykes Road, Leicester		
	Start/end dates of field work	22/07/2019 - 25/07/2019		
	Previous/Future Work	None/ None		
	Project Type	Observation and attendance (watching brief)		
	Site Status	None		
	Current Land Use	Sports Ground/ Car Park		
	Monument Type/Period	None		
	Significant Finds/Period	None		
	Development Type	New stadium. arena		
	Reason for Investigation	NPPF		
	Position in the Planning Process	Pre-planning		
	Planning Ref.	N/A		
PROJECT LOCATION	Site Address/Postcode	LCFC King Power Stadium, Raw Dykes Road, LE2 7FL		
	Study Area	2 hectares		
	Site Coordinates	SK 58259 02808		
	Height OD	57m aOD		
PROJECT CREATORS	Organisation	ULAS		
	Project Brief Originator	N/A		
	Project Design Originator	Richard Buckley		
	Project Manager	Richard Buckley		
	Project Director/Supervisor	Leon Hunt		
	Sponsor/Funding Body	LCFC		
PROJECT ARCHIVE		Physical	Digital	Paper
	Recipient	Leicester Museums	Leicester Museums	Leicester Museums
	ID (Acc. No.)	A19.2019	A19.2019	A19.2019
	Contents	None	Photographs	Report Photo Record Watching Brief Sheets

PROJECT BIBLIOGRAPHY	Type	Grey Literature
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