Tudor Road, Runcorn, Halton, Cheshire

Archaeological Evaluation and Watching Brief Report

April 2021

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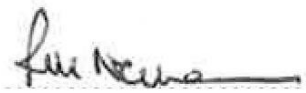
Signature:	

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Tudor Road, Runcorn, Halton, Cheshire

Archaeological Evaluation and Watching Brief Report

Written by Paul Dunn

With contributions from Mairead Rutherford and illustrations by Mark Tidmarsh

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Summary

Oxford Archaeology (OA) North was commissioned by The Environment Partnership (TEP) to undertake a trial-trench evaluation and watching brief at the site of a proposed new-build warehouse for use classes B1, B2 and B8 with associated ancillary works at Tudor Road, Runcorn, Cheshire (NGR: SJ 55033 83274). The work was undertaken as a condition of Planning Permission (planning ref. 19/00200/FUL).

Due to the proximity of the proposed development to the site of Norton Priory and its associated medieval moated enclosures, Cheshire Archaeology Planning Advisory Service (APAS) advised that the proposed development may have an impact on the northern part of the moated complex. As such, TEP developed a mitigation strategy comprising an evaluation trench and watching brief during any groundworks, which was subsequently approved by APAS. The evaluation trench was undertaken over five days, between 18th and 22nd May 2020, whilst the watching brief was undertaken over ten days, initially on 26th May 2020 and then between 2nd November 2020 and 6th January 2021.

The evaluation trench, measuring 40m long and 2m wide, identified moat ***102*** at the very south-eastern end of the trench. The south-eastern extent of the feature could not be excavated due to the proximity of the southern boundary of the site, but the north-western 2.8m of the profile was visible within the trench, with the feature surviving to a depth of 1.89m. It contained five deposits, with some displaying evidence of waterlogging, deposit ***105*** in particular. There were no other archaeological features encountered within the evaluation trench.

Following the evaluation, a watching brief was maintained during ground investigation test-pitting, and the excavation of foundation pads and drainage, including attenuation. Limited archaeological remains were encountered during these works, relating to possible evidence for the upper deposits of the moat within the south-west foundation pads and the western drainage route.

There were no finds recovered from the fieldwork, though environmental samples were taken of the moat fills during the evaluation. Deposit ***105*** produced abundant well-preserved wood fragments and fruits/seeds, and common invertebrate remains. However, column samples taken from the excavated section of the moat did not produce sufficient pollen to warrant analysis.

Acknowledgements

Oxford Archaeology would like to thank Amir Bassir of The Environment Partnership (TEP) for commissioning this project. Thanks are also extended to Kirsty Lloyd of Cheshire Archaeological Planning Advisory Service (APAS), who monitored the work on behalf of Halton Borough Council.

The project was managed for Oxford Archaeology (OA) North by Paul Dunn. The fieldwork was directed by Aidan Parker, who was supported by James Hodgson. The watching brief was maintained by Aidan Parker and Steve Clarke. Survey was carried out by Aidan Parker, with illustrations produced by Mark Tidmarsh. Thanks are also extended to Denise Druce and Mairead Rutherford, who undertook the environmental assessment.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) North was commissioned by The Environment Partnership (TEP) to undertake a trial-trench evaluation and watching brief at the site of a proposed new-build warehouse for use classes B1, B2 and B8, with associated ancillary works, at Tudor Road, Runcorn, Cheshire (NGR: SJ 55033 83274; Fig 1).

1.1.2 The work was undertaken as a condition of Planning Permission (planning ref. 19/00200/FUL). Due to the proximity of the proposed development to the site of Norton Priory, a twelfth-century Augustinian abbey, and its associated medieval moated enclosures, Cheshire Archaeology Planning Advisory Service (APAS) advised that the proposed development may have an impact on the northern part of the moated complex. As such, TEP developed a mitigation strategy, comprising an evaluation trench and watching brief during any groundworks, which was subsequently approved by APAS. The evaluation trench was undertaken over five days, between 18th and 22nd May 2020, whilst the watching brief was undertaken over ten days, initially on 26th May 2020 and then between 2nd November 2020 and 6th January 2021. This document outlines how OA implemented the specified requirements.

1.2 Location, topography and geology

1.2.1 The site is located within Manor Park Industrial Park, to the east of Runcorn and to the south of Tudor Road (NGR: SJ 55033 83274; Fig 1). The site comprised grassland and an area of hardstanding (formerly a tarmacked area) with the A558 Daresbury Express road with woodland to the south.

1.2.2 The solid geology of the area is mapped as siltstone, mudstone and sandstone of the Tarporley Siltstone Formation, with no superficial geology recorded (BGS 2021). The soils have been identified as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (Cranfield 2021).

1.3 Archaeological and historical background

1.3.1 The archaeological and historical background of the site is discussed in more detail in the WSI (*Appendix A*). A brief summary regarding Norton Priory's moat system is provided here.

1.3.2 ***Medieval period***: Norton Priory was first established in 1115, dedicated to St Mary, being moved to its current location in 1134. The position of the priory is thought to have been strategically located between two springs and the Bannerstich Brook, in order to exploit the natural water sources (Greene 1989). Excavations between 1970 and 1987 revealed evidence for the development of the monastery, from its inception, including the earliest structures on the site (Brown and Howard-Davis 2008).

1.3.3 The later thirteenth-century moated system, which was connected to the main monastic drain, was estimated to have a total length of 1100m, on average 2m deep by *c* 9m wide. Prior to the construction of playing fields to the east of Norton Priory in 1974, 15 evaluation trenches were excavated across the moated system. It has been estimated that the works to construct the system may have taken a team of 40 men

up to three years to complete, representing a considerable undertaking (Greene 1989). Water from springs in the south-east corner of the site appear to have been used in the system, the flow of water being regulated by a wooden sluice system, water from the roofs and waste from the kitchens being moved to the mill pond on the western side of the site. The northern outflow of the mill pond passed along the Halton to Moor road, with a water mill being located at this side, all evidence of this probably being lost during the construction of the Daresbury Expressway in 1975.

1.3.4 The priory experienced financial difficulties in the fourteenth century, but it was later expanded and became a site of great wealth and status, being elevated to abbey status in 1391 (Brown and Howard-Davis 2008), and remained active until its dissolution in 1536. The manor of Norton was then bought by the Brooke family in 1545, who demolished the church and adapted the claustral range, including the abbot's lodging and possibly also the guest house, to create a comfortable family house (*ibid*).

1.3.5 ***Post-medieval period***: the medieval timber-framed hall belonging to the Brooke family was demolished in the early eighteenth century and a new classically designed house was constructed, making use of the undercroft of the western claustral range, firstly as cellars, though later, part was converted to the main entrance to the house (*ibid*). The Norton estate map of 1757 depicts the remains of the moated complex, before they were filled in. The estate made use of the earlier ponds as boating lakes, and the area of the enclosed monastic land was converted to parkland.

1.3.6 Following construction of the Bridgewater Canal in the mid-eighteenth century (Hadfield 1984), the moats and ponds were backfilled. A section of the moated system was excavated in 2018 (University of Liverpool 2018), which had clearly been filled by the eighteenth century, as it was not noted on the 1757 estate map. The section appeared to have been deliberately backfilled and included deposits of brick rubble.

1.3.7 ***Modern activity***: the eighteenth-century Brooke manor house was demolished after 1928, and the lands were given to the Runcorn Development Corporation in 1966 (Brown and Howard-Davis 2008). A large amount of landscaping has been undertaken within the area surrounding Norton Priory, mainly as a result of the construction of the Daresbury Expressway. There is the possibility that surrounding ground levels will have changed as a result of the levelling of spoil heaps from the construction of the road.

2 AIMS AND METHODOLOGY

2.1 Aims and objectives

2.1.1 The project aim was to advance knowledge of a little-known ancillary element of Norton Priory. The project objectives were as follows:

i. to adhere to and fulfill the agreed programme of works associated with the archaeological potential of the site;
ii. to identify, investigate, and characterise the profile and depth of the moat at the north-east terminus of the moat system;
iii. to enable identification and investigation of the phases of construction and potential sedimentation of the moat;
iv. to investigate the closing of the moat system in the post-medieval period;
v. to compile a professional archival record of any archaeological remains within the evaluation works.

2.2 Methodology

2.2.1 The project methodology, set out in the WSI (*Appendix A*), was adhered to in full, and was fully compliant with current guidelines and industry best practice (CIfA 2019; 2020a; 2020b; 2020c; HE 2015).

2.2.2 The position of the trench excavated (Fig 2) was set out by use of dGPS (accurate to 0.02-0.03m) and service checks were undertaken by OA North. Topsoil and subsoil were removed to the natural geology or the first significant archaeological horizon by a 13-ton mechanical excavator and stored immediately adjacent to the trench. The southern end of the trench was stepped to allow access to excavate a section through the moat, although the full profile of the moat could not be excavated due to the proximity of the site boundary to the south.

2.2.3 The watching brief was maintained during the excavation of foundation pads, drainage routes and attenuation. These works were set out by the Principal Contractor on site, who also undertook the relevant service checks, and were again excavated by a 13-ton mechanical excavator to their required formation level.

2.2.4 All information identified during the site works was recorded stratigraphically, using a system adapted from that used by the former English Heritage Centre for Archaeology, with an accompanying pictorial record (plans, sections and digital photographs). Primary records were available for inspection at all times.

2.2.5 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes a photographic record, and accurate large-scale plans and sections at appropriate scales (1:50; 1:20 and 1:10).

2.2.6 A full professional archive was compiled in accordance with the WSI, and with current professional guidelines (CIfA 2020c; HE 2015). The archive will be offered to Norton Priory Museum, in due course.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The results of the evaluation and watching brief are presented below, and include a stratigraphic description of the trench that contained archaeological remains. The full details of the trench and excavations monitored during the watching brief, with dimensions and depths of all deposits, can be found in *Appendix B*. There were no finds recovered during the fieldwork, but environmental samples were taken in the form of bulk and column samples. The full reports of these can be found in *Appendix C*.

3.2 General soils and ground conditions

3.2.1 The soil sequence in the trench and watching brief was uniform. The natural geology of mid-reddish-brown silty clay, ***101*** in the evaluation trench and ***1001*** in the watching brief, was overlain by redeposited natural, a mixed reddish-brown-grey silty clay, ***100*** in the evaluation trench and ***1000*** in the watching brief.

3.2.2 Ground conditions throughout the evaluation were generally good, and the site remained dry throughout. However, during the watching brief, the conditions were not so favourable as there was heavy rain. Archaeological features, where present, were easy to identify against the underlying natural geology.

3.3 Evaluation trench

3.3.1 The evaluation trench was 40m long by 2m wide, excavated through the western part of the site on a north-west/south-east alignment (Fig 3). Natural geology ***101*** was identified throughout the trench, approximately 0.3m below the ground level, and was cut by moat ***102***, a north-east/south-west-aligned feature in the approximate presumed location of the northern arm of Norton Priory's moat system.

*Plate 1: Evaluation trench looking north-west, moat **102** in the foreground (fill **106**), scales 1m and 2m*

3.3.2 Only part of moat ***102*** was encountered within the south-eastern end of the trench, with a maximum width of 2.8m being exposed, and surviving to a depth of 1.89m. Only the north-western half of the profile was exposed, which was seen to be gradually sloping, with a fairly flat base.

3.3.3 The earliest deposit encountered within moat ***102*** was reddish-grey silt clay ***103***, which was 0.6m thick and appeared to be natural silting from open water, presumably after the feature had been abandoned for a period of time, as there was no evidence of the feature being cleaned out. Deposit ***103*** was overlain by reddish-grey compact silt clay ***104***, 0.58m thick, potentially a slumping deposit from the south-eastern edge of the moat, again presumably from a period of disuse. Deposit ***104*** was, in turn, overlain by mid-brown-grey sandy silt ***105***, 0.93m thick, which contained fairly substantial quantities of organic material and charred plant remains, suggesting that the feature had been left open, with leaf litter and vegetation collapsing into standing water for a period of time. The moat then appears to have been filled with redeposited natural ***106***, mid-brown-grey and orange clayey sand, 0.38m thick, suggesting that the area had been levelled, seemingly during the post-medieval period, as the deposit contained some brick rubble and large amounts of stone. Deposit ***106*** appears to have left a slight depression, which was subsequently filled by ***107***, a mid- to dark grey silty sand, approximately 0.15m thick. The feature was ultimately sealed by redeposited natural ***100***, visible throughout the trench.

*Plate 2: South-west-facing section of moat **102**, scale 2m*

3.4 Watching brief

3.4.1 The watching brief was maintained over ten days, initially on 26th May 2020 and then between 2nd November 2020 and 6th January 2021. The initial monitoring on 26th May 2020 was during the excavation of test-pits to undertake permeability tests. These only measured 2m long by 1m wide and were excavated with a small five-ton mechanical excavator fitted with a toothed bucket. The northern test-pit was excavated in the north of the site and identified natural geology ***1001*** at 0.9m below the ground level, a red sandstone, overlain by made ground or redeposited natural ***1000***, measuring 0.5m thick, which was in turn overlain by hardcore ***1002***, 0.4m thick (Plate 3). The second test-pit was excavated in the middle of the site and identified natural ***1001*** at 0.4m below ground level, which was overlain by made ground or redeposited natural ***1000*** (Plate 4).

Plate 3: Northern test-pit looking north

Plate 4: Second test-pit looking north

3.4.2 The watching brief then recommenced once construction started on the site in November 2020 and was completed in January 2021, being maintained during the excavation of foundation pads, drainage routes and attenuation (Fig 4). The foundation pads were all approximately 2m by 2m in area and were excavated to a maximum depth of 1.2m. The majority of the foundation pads contained the same deposits, natural material ***1001*** and made ground or redeposited natural ***1000***. There was possible evidence of the upper deposits of moat ***102*** in the foundation pads in the south-western corner of the array (Plate 5), the earliest being deposit ***1003***, a mid-brown-grey and orange clayey sand, approximately 0.3m thick, similar to deposit ***106***, identified in the evaluation trench (*Section 3.3.3*). This was in turn overlain by ***1004***, a mid- to dark grey sandy silt, approximately 0.15m thick, similar to deposit ***107***, identified in the evaluation trench (*Section 3.3.3*). The cut of the feature was not visible within the foundation pad.

Plate 5: Foundation pad in the south-west corner of the development, scale 1m

3.4.3 The results of the monitoring of the drainage routes and attenuation were similar to those for the foundation pads. The drainage routes primarily extended down the eastern and western sides of the development, whilst the attenuation was excavated in the north-eastern part, in the location of the car park. There was no evidence of archaeological remains in the northern and eastern drainage routes nor the attenuation, although as in the foundation pads, there was potential evidence for the upper deposits of moat ***102*** at the south-western end of the western drainage route (Plate 6). Again, the earliest deposit was ***1005***, a mid-brown-grey and orange clayey sand, approximately 0.3m thick, similar to deposit ***106***, identified in the evaluation trench (*Section 3.3.3*). This was in turn overlain by ***1006***, a mid- to dark grey sandy silt, approximately 0.15m thick, similar to deposit ***107*** identified in the evaluation trench (*Section 3.3.3*). The cut of the feature was not visible in the trench.

*Plate 6: Southern drainage route with potential moat deposits **1005** and **1006** identified in the base of the trench, looking south-west, scale 2m*

3.5 Finds and environmental summary

3.5.1 There were no finds recovered during any of the phases of work at Tudor Road. However, environmental samples were taken from the moat deposits during the evaluation (*Appendix C*). Bulk samples were recovered from deposits ***103*** and ***105*** from moat ***102*** and were processed for plant remains. The results indicate that the moat deposits contained environmental remains preserved by waterlogging. Although only few remains survived in deposit ***103***, deposit ***105*** produced abundant well-preserved wood fragments and fruits/seeds, and common invertebrate remains (*Appendix C.1*).

3.5.2 Column samples were also taken through the deposits of the moat excavated during the evaluation (*Appendix C.2*). However, the absence of sufficient pollen within the samples suggests that the data are not suitable for analysis.

4 DISCUSSION

4.1 Reliability of the field investigation

4.1.1 In general, the reliability of the evidence from the evaluation and watching brief was good, with differing deposits being clearly visible. The weather was favourable during the evaluation, although the sunlight was possibly too strong, though the weather was not so favourable during the watching brief, being generally wet.

4.2 Evaluation objectives and results

4.2.1 The objectives identified in *Section 2.1.1* stated that the principal focus of the evaluation trench was to identify, investigate, and characterise the profile and depth of the moat at the north-east terminus of the water-management system. To meet this, a trench was excavated along the length of the proposed development site and the moat was identified at the south-eastern end of the trench. The trench was subsequently widened to allow access to the base of the feature to meet the objectives relating to the identification and investigation of the phases of construction and potential sedimentation of the moat, and also the closing of the moat during the post-medieval period. A watching brief was maintained during any groundbreaking works and identified deposits potentially relating to the upper fills of the moat.

4.3 Discussion

4.3.1 The only archaeological feature identified within the evaluation trench was the targeted moat, relating to the water system associated with Norton Priory. The subsequent watching brief only identified the upper deposits of the moat recorded in the evaluation trench, with the majority of the foundation pads and drainage trenches being blank. The position of the moat does appear to correspond fairly well to its assumed location from historical mapping (Fig 5), and there was no evidence of moat deposits in the eastern drainage trench or foundation pads, suggesting that the moat does terminate in the middle of the development site, although due to the shallow nature of the excavations there was the possibility that the moat had either been partially backfilled by the time the historical mapping was produced or that the moat originally turned to the south, where a pond is depicted on the 1757 estate plan.

4.3.2 The moat deposits suggested that the feature had been left open for a period of time, with no evidence for recutting. The environmental samples from deposit ***105*** suggested that there was a period when organic remains were well-preserved in waterlogged conditions. The upper deposits of the feature, presumably dating to the post-medieval period, given the presence of brick rubble, suggest that the feature was levelled with redeposited natural material, as seen elsewhere in excavations across the moated system (University of Liverpool 2018). However, this did appear to leave a slight depression, which was filled by deposit ***107***, prior to the whole area being levelled again, bringing it to the modern surface of the site. This potentially occurred following the construction of the nearby Daresbury Expressway in the 1970s.

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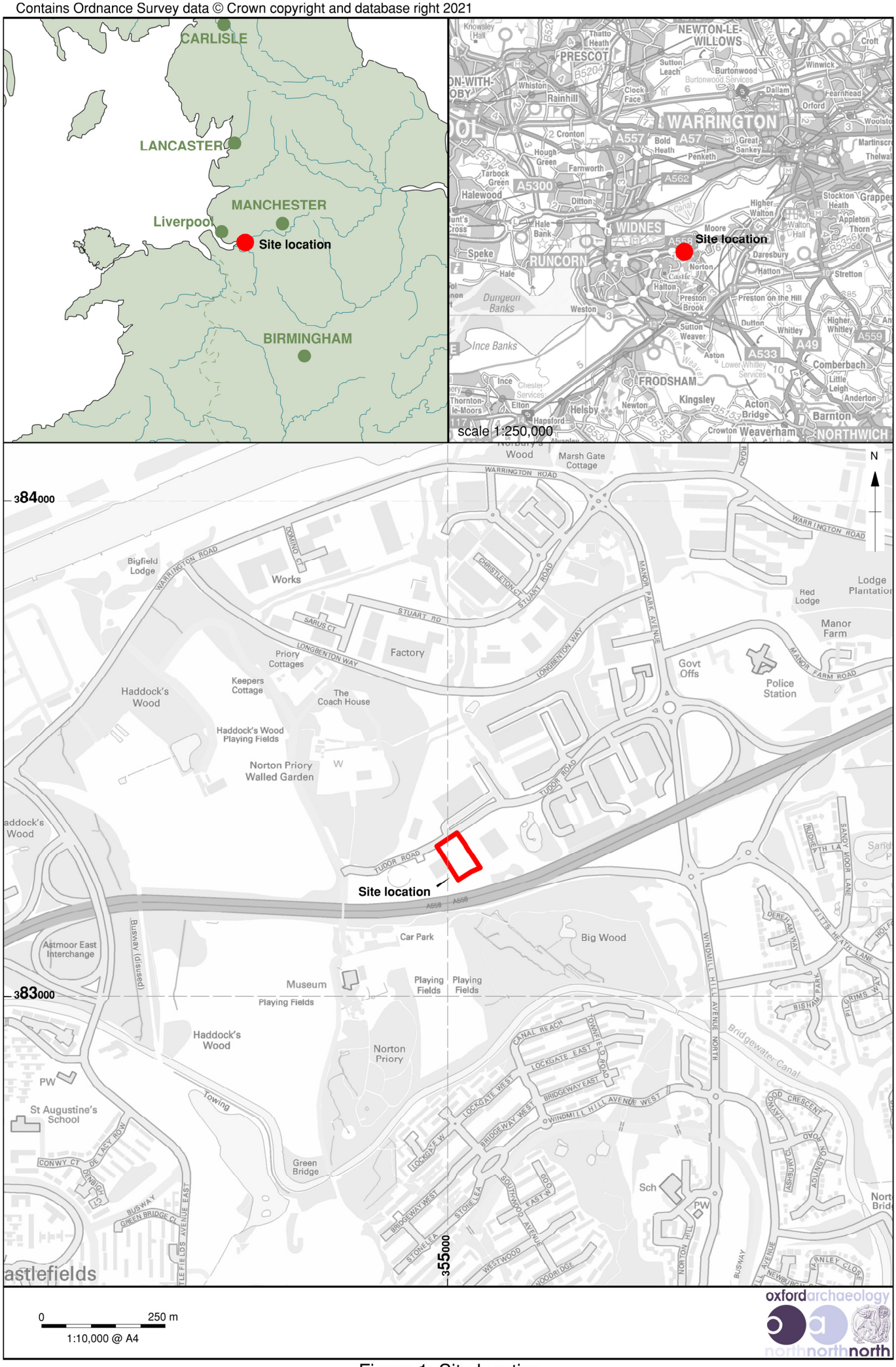

Figure 1: Site location

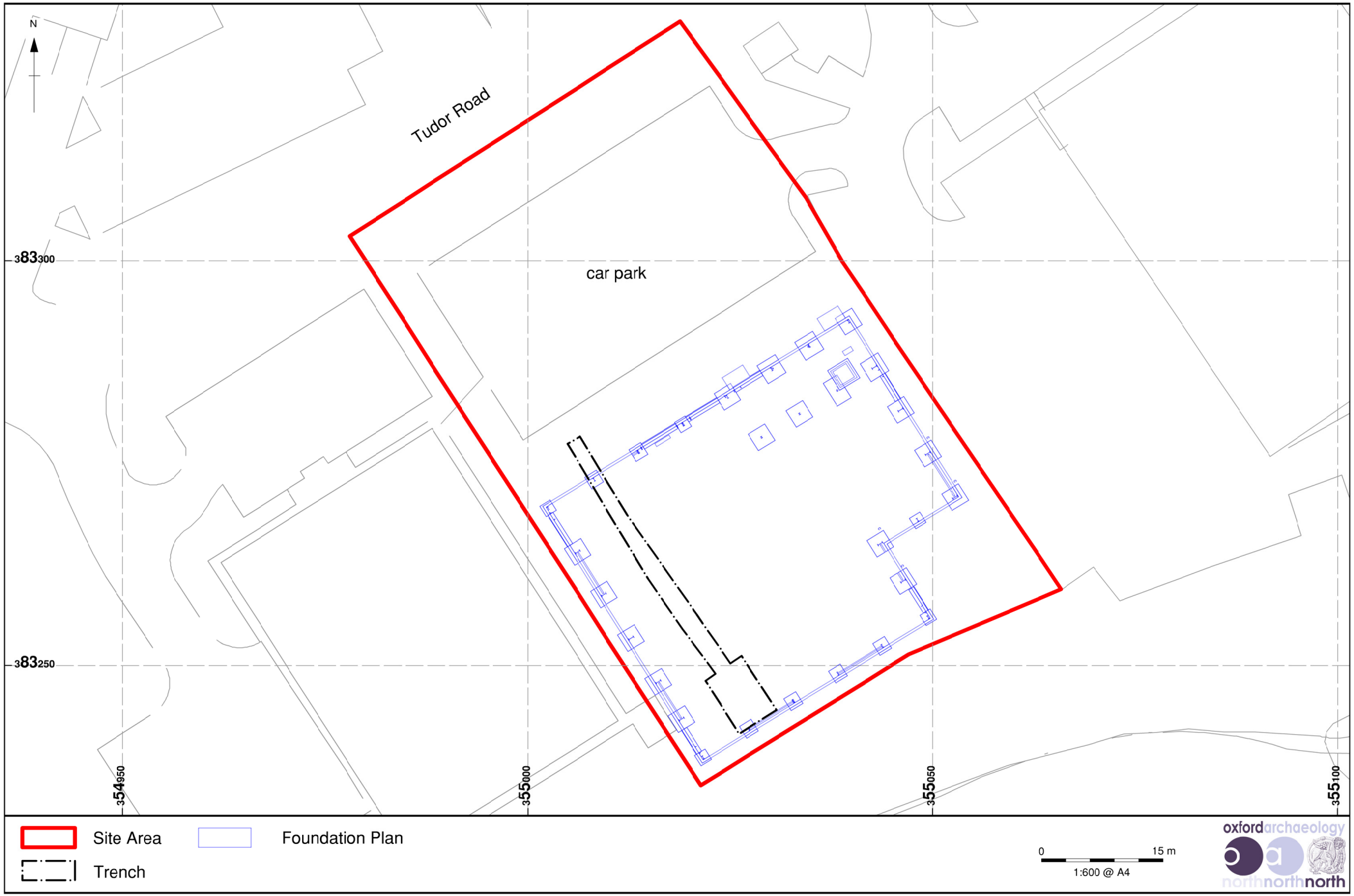

Figure 2: Site location plan

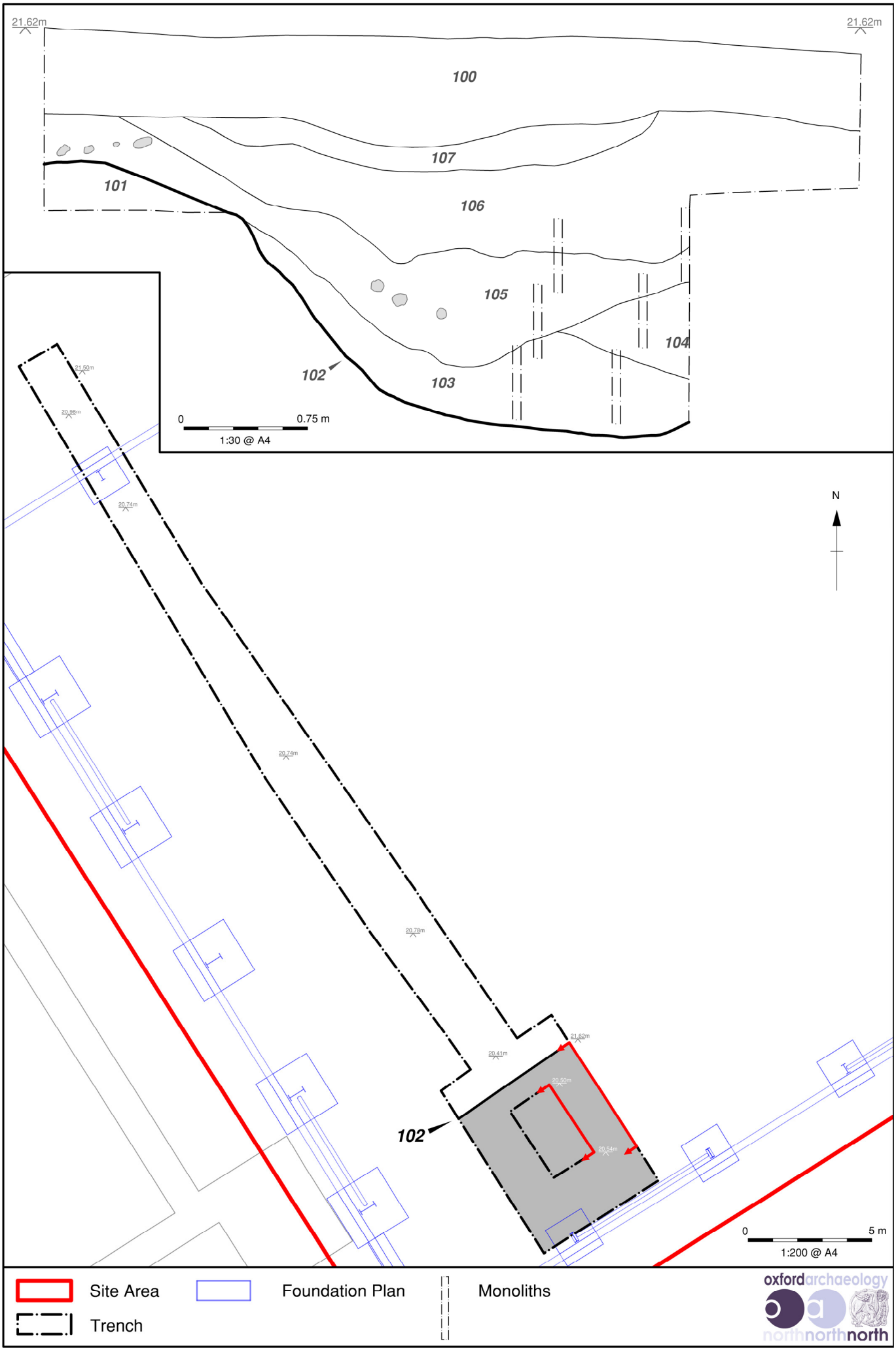

Figure 3: Plan of trench and section of moat ***102***

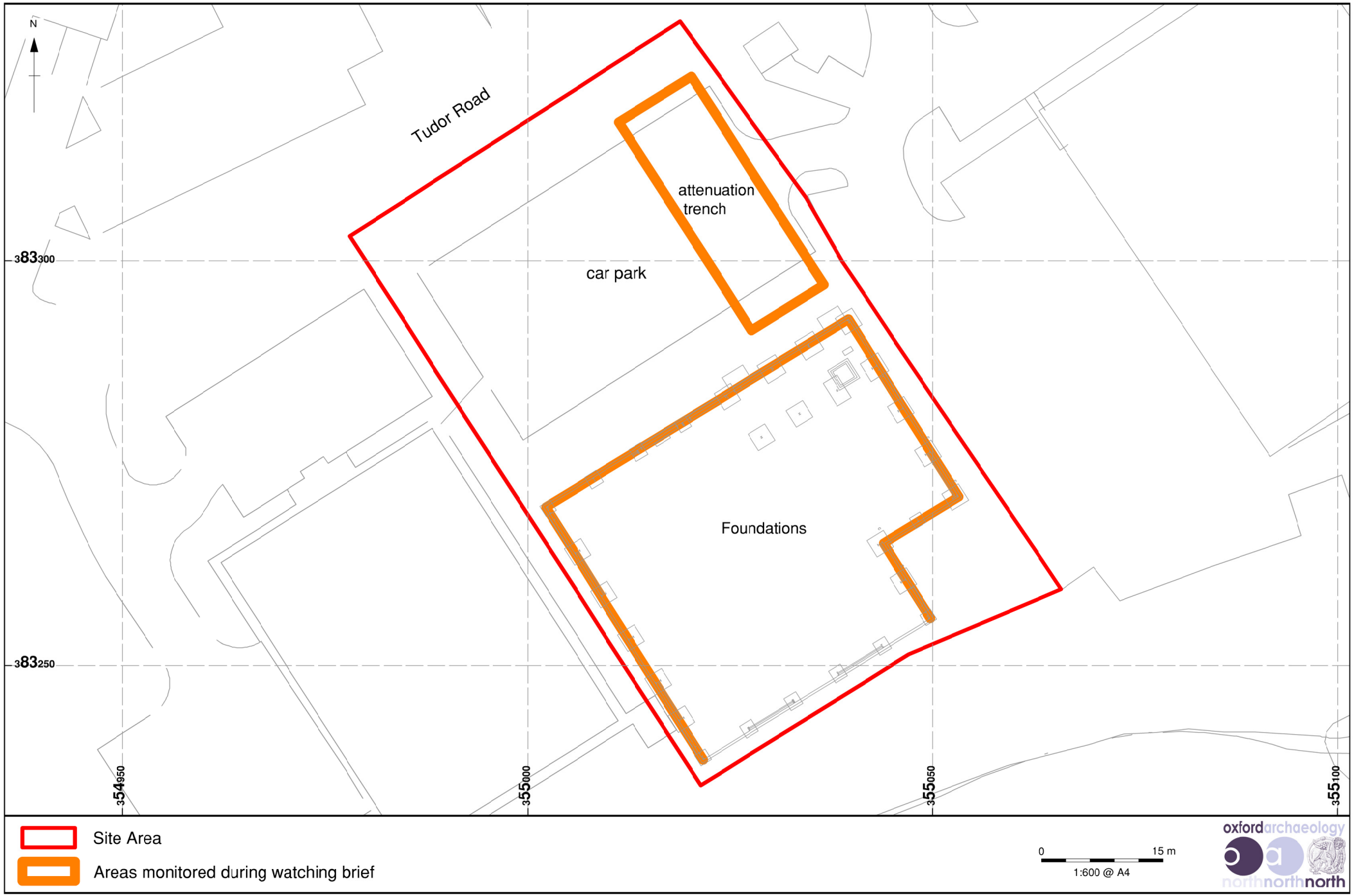

Figure 4: Areas monitored during the watching brief

Figure 5: Evaluation trench and areas monitored during the watching brief, superimposed on an Estate map of Norton Manor (Eyes 1757)

APPENDIX A WRITTEN SCHEME OF INVESTIGATION

THE ENVIRONMENT PARTNERSHIP

ARCHAEOLOGICAL WORKS AT TUDOR ROAD

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ARCHAEOLOGICAL WRITTEN SCHEME OF INVESTIGATION

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Prepared by	TEP - Market Harborough
Document Ref	7776.01

Author	Sarah Hannon-Bland
Date	August 2019
Checked	Amir Bassir
Approved	Jason Clarke

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FIGURES

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1.0 Introduction

1.1 This Written Scheme of Investigation (WSI) has been commissioned by PIN Properties as part of a planning application (19/00200/FUL) for a proposed new build warehouse for use classes B1, B2 and B8 with associated ancillary works at Tudor Road, Runcorn, Cheshire, WA7 1TA.

1.2 The proposed development site is located within Manor Park Industrial Park, to the east of Runcorn and to the south of Tudor Road and is centred upon National Grid Reference SJ 550832.

1.3 The proposed development site comprises grassland and an area of hardstanding (site of the former tarmacked car park) and to the south lies the A558 Daresbury Express road with woodland to the south. The site of the Scheduled Monument of the Augustinian Abbey known as Norton Priory (List Entry No. 1015603) lies approximately 85m to the south-west of the proposed development site.

1.4 Due to the proximity of the proposed development to the site of Norton Priory and its associated medieval moated enclosures, Cheshire Archaeology Planning Advisory Service (APAS) has advised that the proposed development may impact the northern part of the moated complex. If still present, the surviving parts of the moat may preserve important waterlogged remains and provide significant information about the periods of occupation of the priory site, from the 12th to the 18th century.

1.5 This WSI sets out the methodology for archaeological works comprising two elements:

- A targeted excavation (formal section across the moat) located where the proposed development is likely to impact upon the moat complex; and,
- An archaeological watching brief of groundworks within the proposed development area (initial ground clearance, excavation of foundations and major services).

1.6 This WSI also provides a programme of reporting and archiving.

1.7 This WSI has been prepared by The Environment Partnership (TEP) Ltd, a Registered Organisation with the Chartered Institute for Archaeologists (CIfA). It has been authored by a full Member of the CIfA. The archaeological works will be undertaken by appropriately qualified archaeologists.

Aims and Objectives

1.8 The following programme has been designed to identify, investigate, and characterise the profile and depth of the moat at the North-East terminus of the moat system, and to enable the identification and investigation of the phases of construction and potential sedimentation, as well as to investigate the closing of the moat system in the post medieval period.

1.9 The programme of work is designed to then allow for the need for, and scope of, any further necessary archaeological mitigation to be designed and undertaken. This approach is in accordance with paragraphs 189, 190, 197 and 199 of the National Planning Policy Framework (NPPF).

1.10 The research objectives of the programme of work will be determined by what, if any, archaeological remains are present within the development footprint. However, subsequent assessment and analysis will be in accordance with relevant objectives outlined in the North West Archaeological Research Framework (NWARF), with particular regard to medieval rural settlement, field systems and monastic land use, as well as the adoption and adaptation of monastic remains and estate organisation in the post medieval period.

2.0 Policy, Standards and Guidance

2.1 Section 16 of The National Planning Policy Framework (NPPF 2019), describes the provisions specifically relating to conserving and enhancing the historic environment.

2.2 Paragraph 189 advises local planning authorities to require an applicant to describe the significance of any heritage assets affected by their proposal, including any contribution made by their setting, including *"where a site on which development is proposed includes, or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation".* It states that *"the level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance".*

2.3 Paragraph 190 advises local planning authorities "*to identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise".* The information gathered here should be taken *"into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal".*

2.4 Paragraph 197 states that "*The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset".*

2.5 Paragraph 199 states that *"local planning authorities … should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible".* The request for pre-determination works attached to the planning application, and this corresponding WSI, are in accordance with this policy provision of the NPPF.

Guidance

2.6 The guidance most relevant to this WSI is provided in:

- Chartered Institute for Archaeologists 2014, Standard and Guidance for Archaeological Field Evaluation,
- Chartered Institute for Archaeologists 2014, Standard and Guidance for Archaeological Excavation,
- Chartered Institute for Archaeologists 2014, Standards and Guidance for the Collection, documentation, conservation and research of archaeological materials,

- Chartered Institute for Archaeologists 2014, Standards and Guidance for the creation, compilation, transfer and deposition of archaeological archives,
- Historic England, 2015 Management of Research Projects in the Historic Environment (MoRPHE).

Monitoring

2.7 The implementation of the works outlined in this WSI will be monitored by the Development Management Archaeologist at Cheshire Archaeology Planning Advisory (APAS) on behalf of Halton Borough Council (the local planning authority (LPA). The LPA and APAS will be kept up to date with progress during all phases of the archaeological works.

2.8 All archaeological field work will be undertaken by a suitably qualified archaeologist, working under the direction of a full Member of the Chartered Institute for Archaeologists, or equivalently qualified project director.

3.0 Background

Location and Geology

3.1 The development site is located within Manor Park Industrial Park, to the east of Runcorn and to the south of Tudor Road and is centred upon National Grid Reference SJ 550832.

3.2 The British Geological Survey (BGS) shows the underlying geology of the site to be Tarporley Siltstone Formation, comprising mudstone and sandstone. Sedimentary bedrock formed between.

3.3 The topography of the development site is mostly flat, from 24m Above Ordnance Datum (AOD).

Historic Background

3.4 Norton Priory is one of the most excavated monastic sites in England, and has been subject to archaeological investigation since the 1970s. A research programme of site investigation is currently being undertaken by the University of Liverpool, mainly focussing on the historic building remains of the priory itself and surrounding extant land. A brief summary of the history of the site is therefore provided below.

Medieval

3.5 In the Domesday Book of 1086 '*Nortune*' is listed within the hundred of Bucklow, and was held by Toki of Picton and Uhtred, prior to the Norman Conquest. The name Norton is dervied from Old English *'north + tūn'*, which means a farmstead or village, located to the north of another settlement (Mills 2011). As of 1086, the manor is held by Ansfrid and is assessed as being quite small, comprising six households. There was also recorded three acres of meadow, four acres of woodland and one fishery.

3.6 The surrounding land including the proposed development site, was likely to be hazel scrub and woodland, comprising alder trees, in the medieval period before the construction of the priory. Clearance of the scrub and woodland was likely to have taken place before the establishment of the priory by the canons, in order to cultivate the land.

3.7 Norton Priory was first established in 1115, was moved to its current site later in 1134. The priory was dedicated to St Mary. The site was likely to have been strategically located between two springs and the Bannerstich Brook, in order to exploit the natural water sources. Excavation in the 1970s and 1980s revealed the earliest structures at the priory site, constructed to house the builders of the priory, who completed the building work by the end of the 12th century.

3.8 An area to the east of the priory acted as a small canons' burial ground within the moated enclosures which delineated the boundary of the priory site. The use of other areas within the enclosed land are not known, but there is documented evidence for an orchard belonging to the infirmary, likely to the east of the site, a kitchen garden to the south and a possible blacksmith's forge near the outer courtyard of the priory.

3.9 The later 13th century moated system was estimated to have a total length of 1,100 meters, and on average two meters deep by nine meters wide. It has been estimated that the works to construct the moat system may have taken a team of 40 men a total of three years to complete, therefore it was a considerable undertaking (Greene 35:2004).

3.10 Water from springs in the south-east corner of the priory site was used in the moated system. The flow of water was regulated by a wooden sluice, and water from the roofs and waste from the kitchens was moved to the mill pond on the west side of the site. The northern outflow of the mill pond passed along the Halton to Moor road, and water mill as located at this side. Any remains of the water mill are likely to have been removed during the construction of the Daresbury Expressway in 1975.

3.11 In 1974 playing fields were constructed to the east of Norton Priory and fifteen trenches were excavated across the moated system. The moats were eight to ten meters wide and approximately two meters deep. The main monastic drain was investigated and it was shown to be fed by water from the moats using a timber dam, comprising stone abutments into which timber beams were slotted. The monastic drain was dated to the 13th century.

3.12 The water in the system would have assisted in the removal of roof water, kitchen waste, and in the water mill, to produce cereal. In addition the ponds were likely to have been used for farming fish. Excavations so far appear to demonstrate that the moated system was efficient and experienced little change during its lifetime

3.13 The priory had experienced financial difficulties in the 14th century, however it was later expanded and became a site of great wealth and status. The priory was active until the time of its dissolution in 1536. The manor of Norton was then bought by the Brooke family who built a timber-framed hall on the site of the earlier priory, and although the monastic buildings were largely demolished some of the earlier stone and masonry was reused.

3.14 The 1536 Augmentations Office Commissioner's Account records the area to the north-east of the priory site as within a field named *'Sely Lowe'* which means 'little mounds' (Greene 35:2004). The proposed development site may partially fall within this field. Post-16th century records also mark the area as *'Coneygreves*', which likely referred to an area where rabbits were kept, possibly used as source of food.

3.15 The surrounding area was prone to flooding and a series of embankments were constructed to protect the newly drained marshlands, now being used for agriculture. These embankments were visible as earthworks on modern aerial photography but have since been levelled.

3.16 The village of Norton would have employed the open field system of farming during the medieval period, and piecemeal and linear enclosure was later undertaken of these open fields. The curved shape of the linear fields was brought about by the manual ploughing of the fields by a large ploughing team. Medieval ridge and furrow was visible as earthworks in the field to the east of Norton Priory on historic aerial photography. However the spoil heaps resulting from the construction of the Daresbury expressway has levelled these earthworks out across the field.

Post-Medieval

3.17 The medieval timber-framed hall belonging to the Brooke family was demolished in the early 18th century and a new house was built. However, the house made use of the undercroft of the western side of the monastery, and this structure was utilised as cellars. The Norton estate map of 1757 is indicative of the remains of the moated complex in the post medieval period, before they were later filled in. The estate made use of the earlier ponds as boating lakes, and the area of the enclosed monastic land was parkland.

3.18 Following the construction of the Bridgewater Canal the moats and pond were backfilled. In 2018 an area of the moated system was also excavated which revealed a length of infilled ditch not noted on the 1757 estate map. This ditch was infilled in the 18th century and included deposits of brick rubble.

3.19 A series of post medieval features and earthworks such as trackways and ponds were evident on aerial photography in the 20th century, however the trackways appear levelled on the 2002 LiDAR mostly as a result of landscaping for the creation of playing fields, and the ponds have been destroyed by the construction of the Daresbury Expressway in 1975.

Modern

3.20 The 18th century Brooke manor house was demolished after 1928, and the lands were given to the Runcorn Development Corporation in 1966 (Oxford Archaeology North 2007: 9).

3.21 A Second World War barrage balloon site is visible on aerial photography from the 1940s situated to the north-east of Norton Priory. It is likely that the construction of the Daresbury Expressway in 1975 destroyed the position of the barrage balloon site. Following the construction of the main road, Manor Park Industrial Park was established and has expanded since this time.

3.22 A large amount of landscaping has been undertaken within the area surrounding Norton Priory, mainly as a result of the construction of the Daresbury Expressway. It is not clear from the available evidence if any damage has occurred to below ground archaeology as a result of the spoil heaps made either side of the modern road which have since been levelled, raising the ground level in these areas. In addition, encroachment of vegetation has been substantial as scrub and woodland have expanded in the modern period.

The proposed development

3.23 The development comprises a single warehouse unit located to the south of the site, with a floor space of 1,741sqm and office accommodation on two floors.

3.24 A new car access route will be constructed from Tudor Road, a new car parking area with 30 spaces will be built to the east of the site, as well as a new footway link and bicycle store.

3.25 To the south-east of the proposed warehouse unit a linear pond is to be created within a landscaped area and shrub and scrub planting will be undertaken on this side.

4.0 Archaeological Works

4.1 The field work will comprise a trial trench and archaeological watching brief designed to adequately sample the proposed development site and mitigate damage to any archaeological remains. All field work will be carried out by suitably qualified archaeologists, working under the direction of a full Member of the Chartered Institute for Archaeologists, or equivalently qualified project director.

Archaeological Trial Trenching

4.2 A single trial trench targeting the moated complex and measuring 40m long by 2m wide will be excavated by a suitably sized machine. Examination of available historic mapping and heritage data has suggested that the moat is aligned towards the southern extent of the development area on an east-west alignment; the proposed trench is designed to target this feature if present within the development site.

4.3 The Trench (Figure 1, Site Location) will be mechanically excavated using a machine fitted with a 1.8m toothless ditching bucket. Under instruction from the designated trench supervisor, the machine will operate in 'spits', removing only an appropriate amount of overburden with each action. The supervising archaeologist will give the command to stop should archaeological deposits or structures become visible. At each soil horizon change, the supervising archaeologist will indicate to the machine driver that each stratum should be stored separately.

4.4 Upon reaching the archaeological horizon or the natural horizon, whichever is encountered first, machine excavation will stop. Should the trench require excavation to depths in excess of 2m to reach archaeological horizons, the trench may require stepping or shoring, or investigation by machine sondage, rather than features being cleaned by hand. This would be confirmed in consultation with the client and APAS.

4.5 The archaeological works will provide an accurate record of any archaeological and paleo-environmental finds, features, artefacts or ecofacts identified.

4.6 In the event that any such finds or features are identified, subsequent excavations will be undertaken by hand. Any archaeological surfaces that are present will be cleaned sufficiently to enhance any features, site levels will be related to the Ordnance Survey National Grid and Datum. The general site plans will be hand drawn at a scale of 1:50 or 1:100.

4.7 Discrete features will be half-sectioned, or fully excavated if features are part of recognisable structures, contain deposits or artefacts of particular value, or likely to hold significant artefact or environmental assemblages. Intersections will be investigated to establish strategic relationships. Representative sections of linear and curvilinear features will be sample excavated away from intersections or other features or deposits, to obtain unmixed samples of material. Sections will be drawn at a scale of 1:10 or 1:20, as appropriate. Environmental bulk samples (usually 40 litres) will be taken where the deposit is likely to contain significant environmental assemblage. All records will be undertaken using pro form record sheets.

4.8 Sampling strategies will be in accordance with the archaeological sub-contractor fieldwork manual and described in their method statement (appended to this WSI) as well as be the requirements of APAS.

4.9 The archaeological contractor will make appropriate pre-and post-excavation site records. All finds and features will be accurately located and planned accurately at appropriate scales. All site photographs will be taken using a digital SLR camera with a sensor of a minimum of 12 megapixels and supplemented with black and white film photography. Photographic scales of appropriate sizes will be placed within all shots if possible. All photography will be undertaken in accordance with Historic England guidance, Digital Image Capture and File Storage: Guidelines for Best Practice, 2015.

4.10 The archaeological works will be undertaken by a suitably qualified archaeologist. They will work with the construction contractors during the groundworks phase of the proposed development. The archaeologist will maintain a permanent presence during areas of ground disturbance as part of the construction of the proposed development area, during topsoil stripping and excavations for foundations and services.

Archaeological Watching Brief

4.11 The supervising archaeologist will work with the site manager and excavation team to ensure that stripped surfaces and excavations are not tracked on or walked across until the supervising archaeologist has inspected the area and handed it back to the contractor. The archaeologist will do so within an appropriate timescale and will avoid any unnecessary delays to the work programme.

4.12 In the event that any such finds or features are identified, the construction contractor will be immediately informed and works may be temporarily delayed while the remains are recorded. The supervising archaeologist will have the authority to halt earth moving activities if necessary to define, investigate and record any areas of archaeological (or potential archaeological) interest.

4.13 In the event that complex or extensive remains are identified, the archaeological contractor will safeguard the area of interest and immediately inform the client.

4.14 The archaeological watching brief will provide an accurate record of any archaeological and palaeo-environmental finds, features, artefacts or ecofacts identified.

4.15 Any archaeological surfaces that are present will be cleaned sufficiently to enhance any features, site levels will be related to the Ordnance Survey National Grid and Datum. The general site plans will be hand-drawn at a scale of 1:50 or 1:100.

4.16 Discrete features will be half-sectioned, or fully excavated if features are part of recognisable structures, contain deposits or artefacts of particular value, or likely to hold significant artefact or environmental assemblages. Intersections will be investigated to establish strategic relationships. Representative sections of linear and curvilinear features will be sample excavated away from intersections or other features or deposits, to obtain unmixed samples of material. Sections will be drawn at a scale of 1:10 or 1:20, as appropriate. Environmental bulk samples (usually 40 litres) will be taken where the deposit is likely to contain significant environmental assemblage. All records will be undertaken using pro form record sheets. All site photographs will be taken using a digital SLR camera with a sensor of a minimum of 12 megapixels.

4.17

Finds

4.18 All finds or environmental samples recovered during the archaeological works will be assessed and reported on by internal and external specialists of the archaeological contractor. A list of specialists for the project will be provided in a method statement from the appointed archaeological contractor prior to works commencing.

4.19 All finds will be treated in accordance with current best practice as set out in Chartered Institute for Archaeologists and Historic England guidance.

Human Remains

4.20 If human remains are encountered during the excavations, they will be left in situ and the coroner notified. If it is deemed appropriate to excavate human remains, this will be done in accordance with appropriate Historic England and Chartered Institute for Archaeologists guidance (e.g. CIfA Technical Paper 13 Excavation and Post-excavation Treatment of Cremated and Inhumed remains). Excavation, removal from site, analysis and final placing will all be subject to the requirements of the appropriate Ministry of Justice licence.

Treasure

4.21 If any artefacts are encountered that would constitute ‘treasure’ as defined by The Treasure Act, 1996, they will be reported to the local Coroner and relevant Finds Liaison Officer. Any artefacts deemed to be Treasure should be excavated on the day they are discovered and removed to a secure site. If this is impractical then appropriate security provided until full excavation and removal can occur.

Paleo-environmental sampling and analysis

4.22 The paleo-environmental assessment aims to identify areas within the development footprint where conditions are such that deposits suitable for the study of past environments are preserved. These most commonly occur in the form of subsurface peat layers, but are also taken to include all waterlogged deposits. The identification of any suitable areas will take place during the archaeological evaluation.

4.23 Should any such deposits exist within the area of impact, samples will be taken by a suitably qualified specialist sub-contractor.

4.24 The samples would be assessed for their potential by internal or external specialists of the archaeological contractor, and suitable techniques applied to sub-sample from select cores to determine the preservation and taxonomic diversity within the samples. This is likely to include assessing for one or more of the following:

- Pollen (focussing on organic units)
- Diatoms (focussing upon lithological transitions within and at the base of the Holocene sediment stack)
- Foraminifera (focussing on mineral strata and in particular on transitions)
- Plant macro-remains (focussing on organic units)

4.25 Having assessed the potential for analysis, a project design will be produced that will provide a detailed proposal for analysis (including, for example, C14 dating, loss-on-ignition to measure organic carbon content, humification and mass specific magnetic susceptibility) of any present selected samples.

4.26 If necessary and appropriate the advice of the Historic England Science Advisor for the North West will be sought.

Programme

4.27 It is anticipated that the works will happen in accordance with the following programme:

- August 2019 - submit WSI for approval by APAS and HBC
- September 2019 - undertake excavation of trial trench
- +4 weeks - report
- +8 weeks - deposit archive

At present a timeframe for groundworks has not been established; APAS will be notified in advance of commencement of this phase of archaeological works.

Organisation and Key Personnel

4.28 TEP is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA). The heritage team is under overall management of **Ian Grimshaw BA (Hons) MA (LM) MSc CMLI MRTPI, Director**

4.29 The archaeological works will be undertaken Oxford Archaeology North and will be managed by **Jason Clarke BSc MA MCIfA, Principal Historic Environment Consultant (TEP).**

4.30 A list of specialists at Oxford Archaeology North that may be drawn upon as part of these works is as follows:

Specialist	Specialism	Qualifications
Lisa Brown	Early Prehistoric pottery	BA, PGDip, MLitt, MCIfA

Specialist	Specialism	Qualifications
Paul Booth	Iron Age and Roman pottery	BA, FSA, MCIfA
John Cotter	Medieval and Post Medieval pottery, Clay Pipe and CBM	BA (Hons), MCIfA
Cynthia Poole	CBM and Fired Clay	BA (Hons), MSc
Edward Biddulph	Roman Pottery	BA (Hons), MA, MCIfA
Ian Scott	Metalwork and Glass	BA (Hons)
Leigh Allen	Metalwork and worked bone	BA (Hons), PGDip
Dr Ruth Shaffrey	Worked stone artefacts	BA, PhD, MCIfA
Julian Munby	Architectural Stone	BA, FSA
Dr Rebecca Nicholson	Fish and Bird Bone	BA (Hons), MA, D.Phil, MCIfA, FSA Scot
Dr Mairead Rutherford	Pollen	BSc, MSc
Lee Broderick	Animal bone	BA (hons), MA, MSc, FZG, SAC Dip (ecology)
Julia Meen	Charred and waterlogged plant remains and charcoal	BSc (Hons), MA
Dr Denise Druce	Charred plant remains, charcoal and pollen	BA (Hons), PhD, MCIfA
Elizabeth Stafford	Geoarchaeology and land snails	BA (Hons), MSc
Carl Champness	Geoarchaeology	BA (Hons), MSc, ACIfA
Dr Ian Smith	Animal Bone	BSc, PhD
Nicola Scott	Archaeological archive deposition	BA (Hons Dunelm)
Mike Donnelly	Flint	BSc, MCIfA
Dr Louise Loe	Human Bone	D.Phil, BA, MCIfA
Helen Webb	Human Bone	MSc, BSc

Specialist	Specialism	Qualifications
Mark Gibson	Human Bone	MSc, BA
Dr Lauren McIntyre	Human Bone	D.Phil, MSc, BSc

4.31 External specialists that may be used as part of these works are as follows:

Specialist	Specialism	Qualifications
Lynne Keys	Slag	BA (Hons)
Quita Mould	Leather	BA, MA
Penelope Walton Rogers, The Anglo Saxon Laboratory	Identification of Medieval Textiles	FSA, Dip.Acc
Dana Goodburn-Brown	Conservation	BSc (Hons), BA, MSc
Steve Allen, York Archaeological Trust	Conservation	BA, MA, MAAIS
Dr Richard Macphail	Soils, especially Micromorphology	BA (Hons), MSc, PhD
Dana Challinor	Charcoal	MA, MSc
Dr Nigel Cameron	Diatoms	BSc, MSc, PhD
Dr David Smith	Insects	BA (Hons), MA, PhD
Professor Adrian Parker	Phytoliths and pollen	BSc (Hons), D.Phil
Dr David Starley	Metalworking Slag	BSc (Hons), PhD
Wendy Carruthers	Charred and waterlogged plant remains	BA (Hons)
Dr Sylvia Peglar	Pollen	PhD
Dr John Whittaker	Ostracods and Foraminifera	BA (Hons), PhD
Dr John Crowther	Soil Chemistry	MA, PhD
Dr Martin Bates	Geoarchaeology	BSc, PhD
Dr Dan Miles	Dendrochronology	D.Phil, FSA

Specialist	Specialism	Qualifications
Dr Jean-Luc Schwenninger	Optically Stimulated Luminescence Dating	PhD
Dr David Higgins	Clay Pipe	BA, PhD, MCIfA
Dr Hugo Anderson-Wymark	Flint	BSc, PhD, FSA Scot, MCIfA
Dr Damian Goodburn-Brown	Ancient Woodwork	BA, PhD

5.0 Reporting

5.1 In accordance with the principles of Management of Research Projects in the Historic Environment (MoRPHE) (Historic England 2015) and the Management of Archaeological Projects, 2nd Ed (MAP2) (English Heritage 1991), a programme of post-excavation assessment and reporting will be undertaken, to commence on completion of the archaeological fieldwork.

5.2 In the event of negative, or non-complex findings, a report will be produced detailing the results of fieldwork within four weeks of the end of fieldwork and archived within six months. The report will include;

- a front cover to include the NGR, and HER reference number
- a concise, non-technical summary of the results,
- the circumstances of the project and the dates on which the fieldwork was undertaken,
- description of the methodology, including the sources consulted,
- a very brief summary of the historical background of the study area,
- a statement, where appropriate, of the archaeological implications of the impact,
- a copy of this project design, and indications of any agreed departure from that design,
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted,
- a site location plan related to the national grid,
- appropriate plans showing the location and position of features or sites located,
- plans and sections showing the positions of deposits and finds,
- illustrative photographs as appropriate,
- coordinates (latitude/longitude) of relevant sites if archaeological remains have been discovered.

5.3 In the event of archaeologically significant finds, the results of fieldwork will also be published in a relevant and appropriate journal, or other publically disseminated publication, as appropriate.

5.4 Pottery reports will refer to the appropriate type series.

6.0 Archive

6.1 A copy of the report provided as a PDF on disk, and as a hard copy, will be submitted to the Cheshire Historic Environment Record.

6.2 An archive of the results of the archaeological work will be produced, in accordance with current English Heritage guidelines (Management of Archaeological Projects, Appendix 3, 2nd edition, 1991) and Chartered Institute for Archaeologists Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA 2014). The archive will contain any site matrices, and summary reports of the artefact record, context records, and any other records or materials recovered.

6.3 Cheshire HER will be informed of field work commencing and of the arrangements made for deposition of the project archive.

6.4 The original record archive of projects (paper, magnetic and plastic media), and a full copy of the record archive (microform or microfiche), together with the material archive (artefacts, ecofacts, and samples) will be deposited with the relevant local archive.

6.5 Any relevant archive generated will be deposited with an appropriate regional depository, it is understood that a charge may be made for this and that the depository will need to be contacted to agree to the deposition of any archive in advance.

6.6 Details of the work will be entered on the OASIS database at http://ads.ahds.ac.uk/projects/oasis.

7.0 Health and Safety

7.1 All work on site would be undertaken strictly in accordance with the project health and safety plan and task specific risk assessments. All companies working on the project will adhere to the client's required quality, health, safety and environment controls.

7.2 Access routes to working areas would be specified by the client and access would only be permitted to those routes and the area of the fieldwork.

7.3 All site staff, including subcontractors and visitors, will prove that they have attended a site induction and have the necessary competencies (e.g. CITB training for machine operators) and any other necessary health and safety qualifications.

References

CIfA, 2017, Code of Conduct. Chartered Institute for Archaeologists

CIfA, 2014, Standard and Guidance for Archaeological Watching Briefs. Chartered Institute for Archaeologists

CIfA, 2014 Guidelines for data collection and compilation. Chartered Institute of Field Archaeologists

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Websites

Heritagegateway.org.uk

historicengland.org.uk/listing

www.pastscape.co.uk

Norton Priory Excavations https://nortonpriorydig.wordpress.com/

Norton Priory 2019 Live Blog https://www.liverpool.ac.uk/archaeology-classics-and-egyptology/study/liverpool-archaeological-field-school/norton-priory-2019/

355000

Tudor Road

car park area

Trench 1

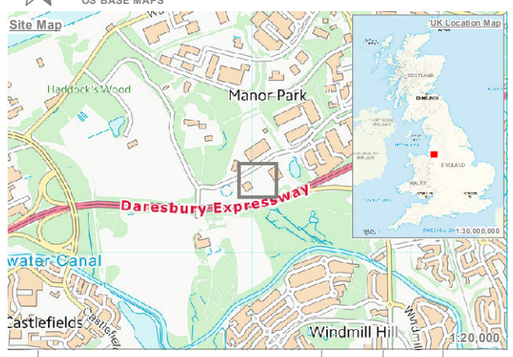
355000

KEY

- Development area
- Proposed trench location
- Watching brief area (footprint of new warehouse)

Metres

0 10 20 40



Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP
No.1 The Chambers, Bowden Business Village
Leicester Road, Market Harborough, LE16 7SA
Tel 01858 353120 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tudor Road, Runcorn

Title
Site location, showing proposed trial trench and area of archaeological observation

Drawing Number
G7776.001

Drawn	Checked	Approved	Scale	Date
AB	SHB	JC	1:500 @ A3	05/08/2019

354800 355000 355200

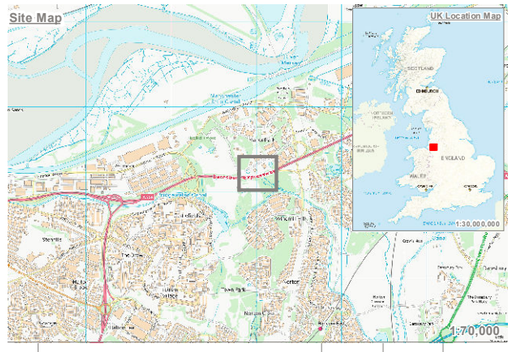
383400

383200

KEY

- Development area
- Proposed trench location
- Proposed watching brief area
- Projected extent of moat

Site Map



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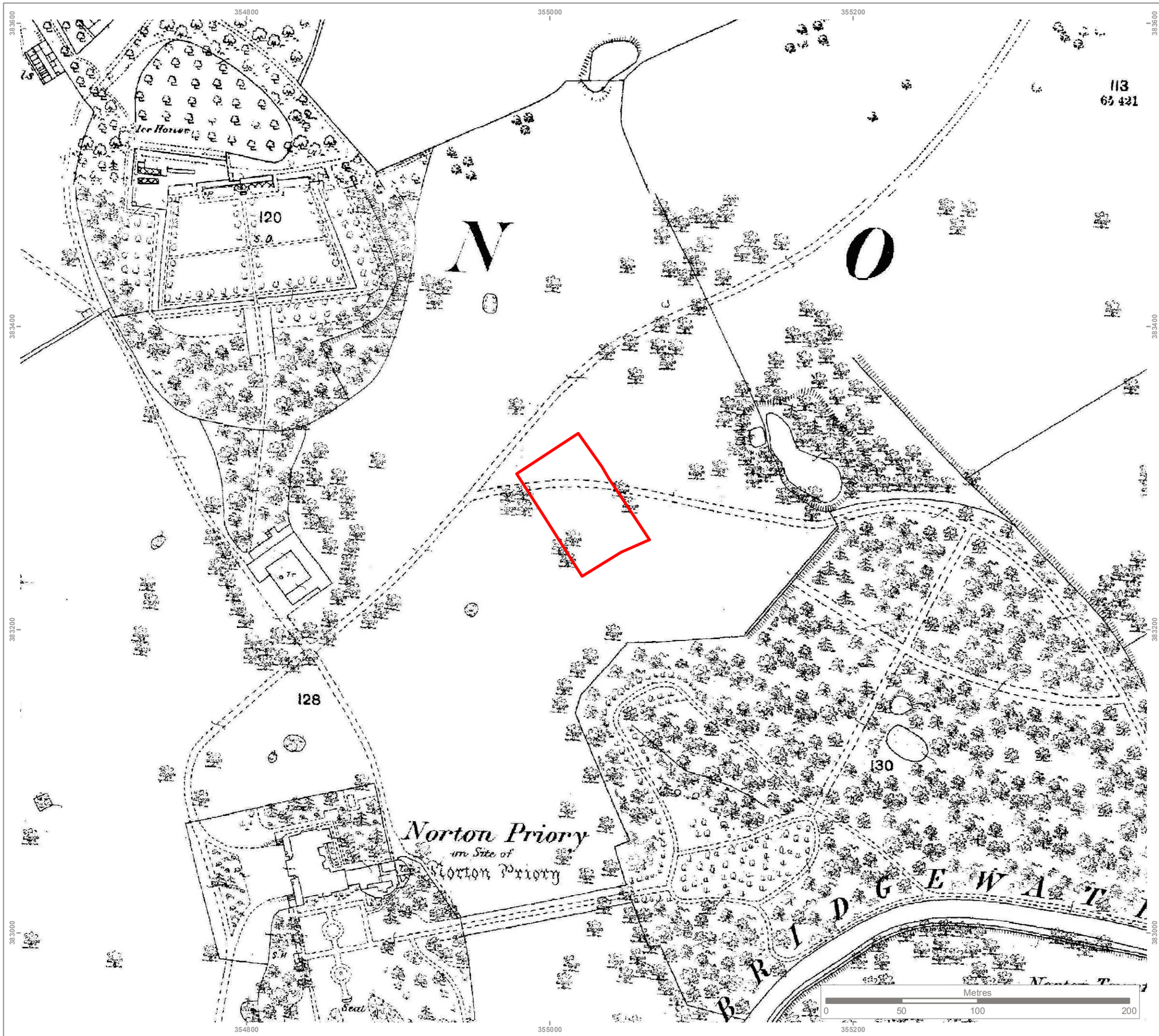
Tel 01858 353120 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tudor Road, Runcorn

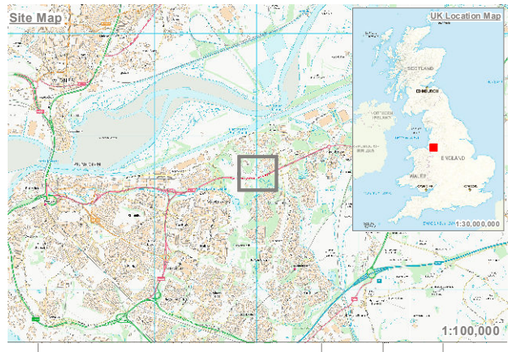
Title
RAF photograph c1940s, showing the development area and projected extent of the former moat

Drawing Number
G7776.002

Drawn	Checked	Approved	Scale	Date
AB	SHB	JC	1:1,500 @ A3	05/08/2019



Site Map



Rev	Description	Drawn	Approved	Date

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No.1 The Chambers, Bowden Business Village
Leicester Road, Market Harborough, LE16 7SA
Tel 01858 353120 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tudor Road, Runcorn

Title
Ordnance Survey map of 1877, showing the development area

Drawing Number
G7776.003

Drawn	Checked	Approved	Scale	Date
AB	SHB	JC	1:2,500 @ A3	05/08/2019

354800 355000 355200

383600 383400 383200 383000

125 126 126 127 128 129 130 131 132 133 134 130

NORTON PRIORY

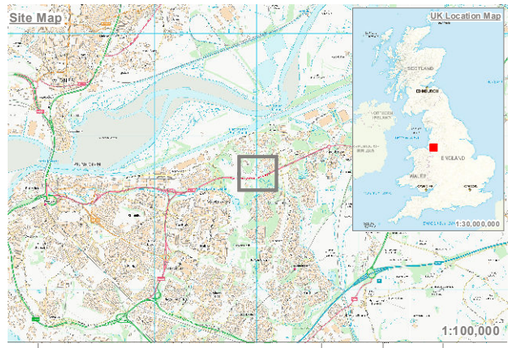
DUKE

Metres
0 50 100 200

KEY

Development area

Site Map



Rev	Description	Drawn	Approved	Date

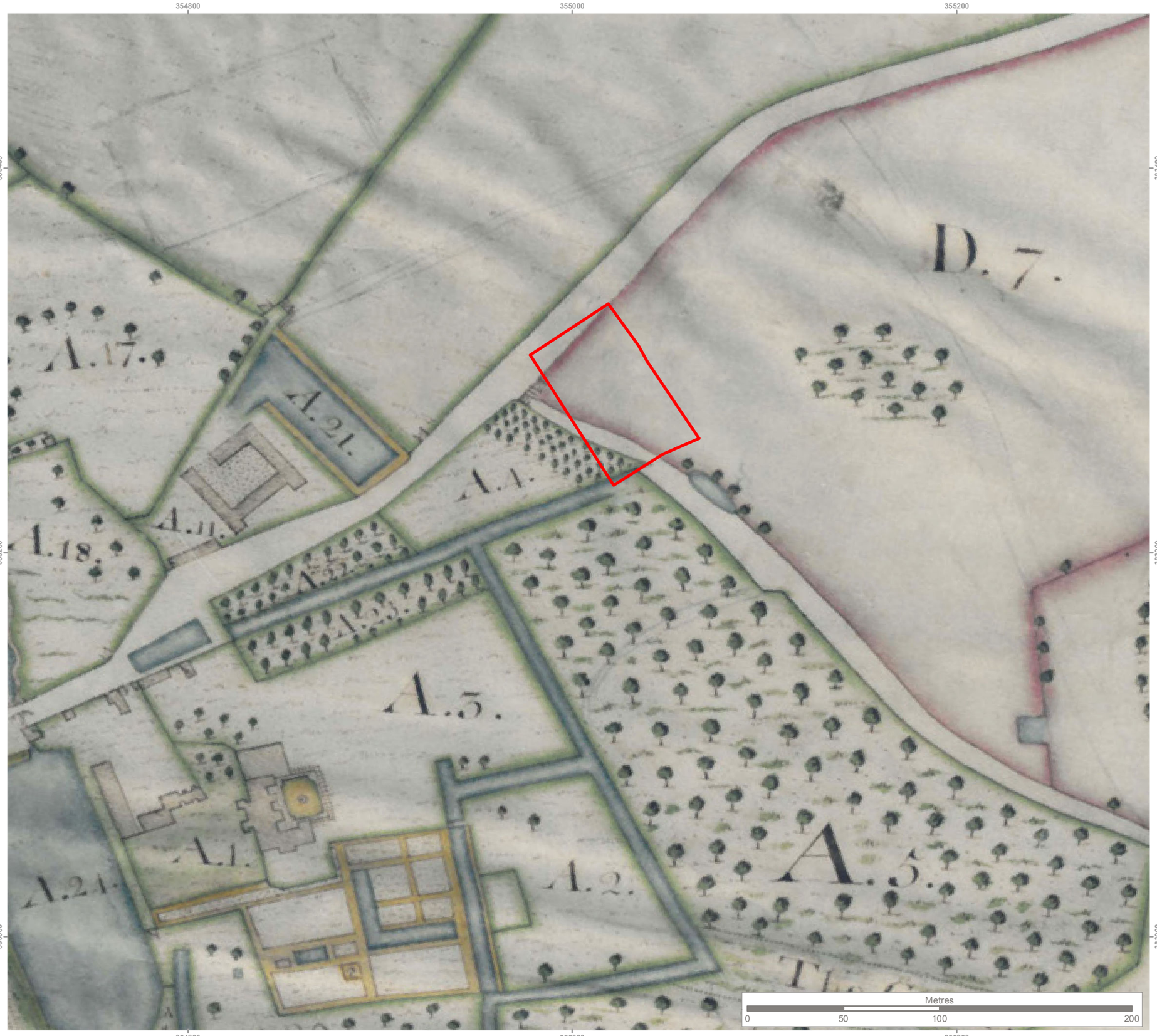
THE ENVIRONMENT PARTNERSHIP
No.1 The Chambers, Bowden Business Village
Leicester Road, Market Harborough, LE16 7SA
Tel 01858 353120 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tudor Road, Runcorn

Title
Tithe map of 1844, showing the development area

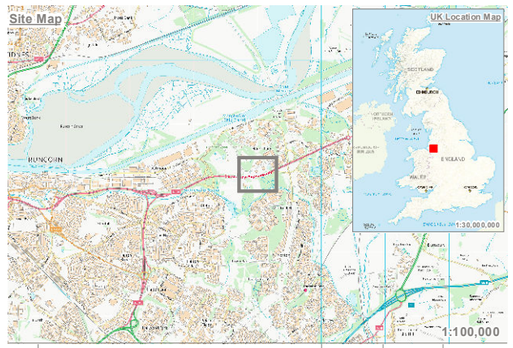
Drawing Number
G7776.004

Drawn	Checked	Approved	Scale	Date
AB	SHB	JC	1:2,500 @ A3	05/08/2019



KEY

Development area



Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP
No.1 The Chambers, Bowden Business Village
Leicester Road, Market Harborough, LE16 7SA
Tel 01858 353120 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tudor Road, Runcorn

Title
Estate Map of 1757, showing the approximate location of the development area

Drawing Number
G7776.005

Drawn	Checked	Approved	Scale	Date
AB	SHB	JC	1:2,000 @ A3	05/08/2019

APPENDIX A: Risk Assessment Method Statement (RAMS) Oxford Archaeology North 2019

Method Statement for Evaluation and Watching Brief on Tudor Road, Runcorn, Halton, Cheshire

Work Phase: Evaluation and Watching Brief

Document Matrix

Produced By	Paul Dunn
Date	05/08/19
Circulation	Jason Clarke (TEP), Amir Bassir (TEP), Sarah Hannon-Bland (TEP)
Version	2.0

Site Location (Fig 1): Land off Tudor Road, Runcorn, Halton, Cheshire (NGR: SJ 55040 83262)

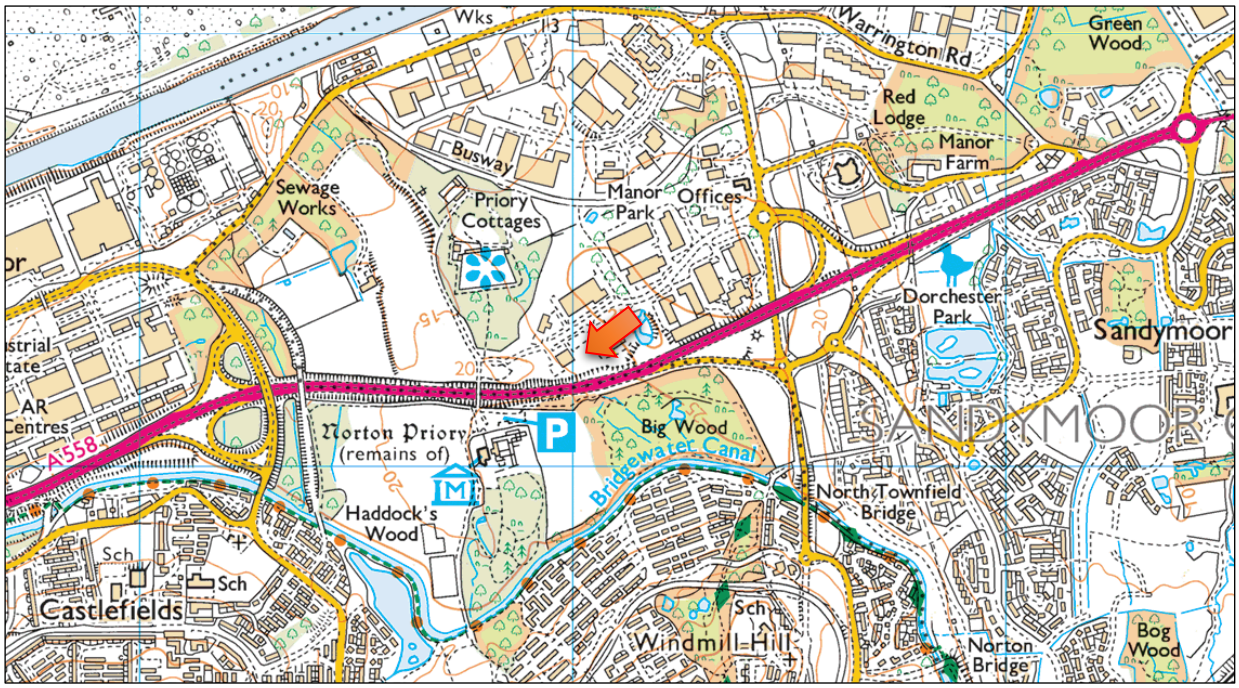


Figure 1: Site Location

Address: Land off Tudor Road, Runcorn, Halton, Cheshire, WA7 1TY

Date and Duration of Works: Start date to be confirmed, evaluation to take up to five days to complete

Client: The Environment Partnership (TEP)

Archaeological Contractor: Oxford Archaeology North

OA North Contacts:

Paul Dunn Project Manager (Office) 07584 501 570
TBC Project Officer/Supervisor (Site)

Emergency Procedure

1) Give first aid
2) Dial 999 provide site address
3) Direct emergency vehicles
4) Inform all relevant parties

Nearest Hospital (Fig 2): Warrington Hospital, Lovely Lane, Warrington, Cheshire, WA5 1QG

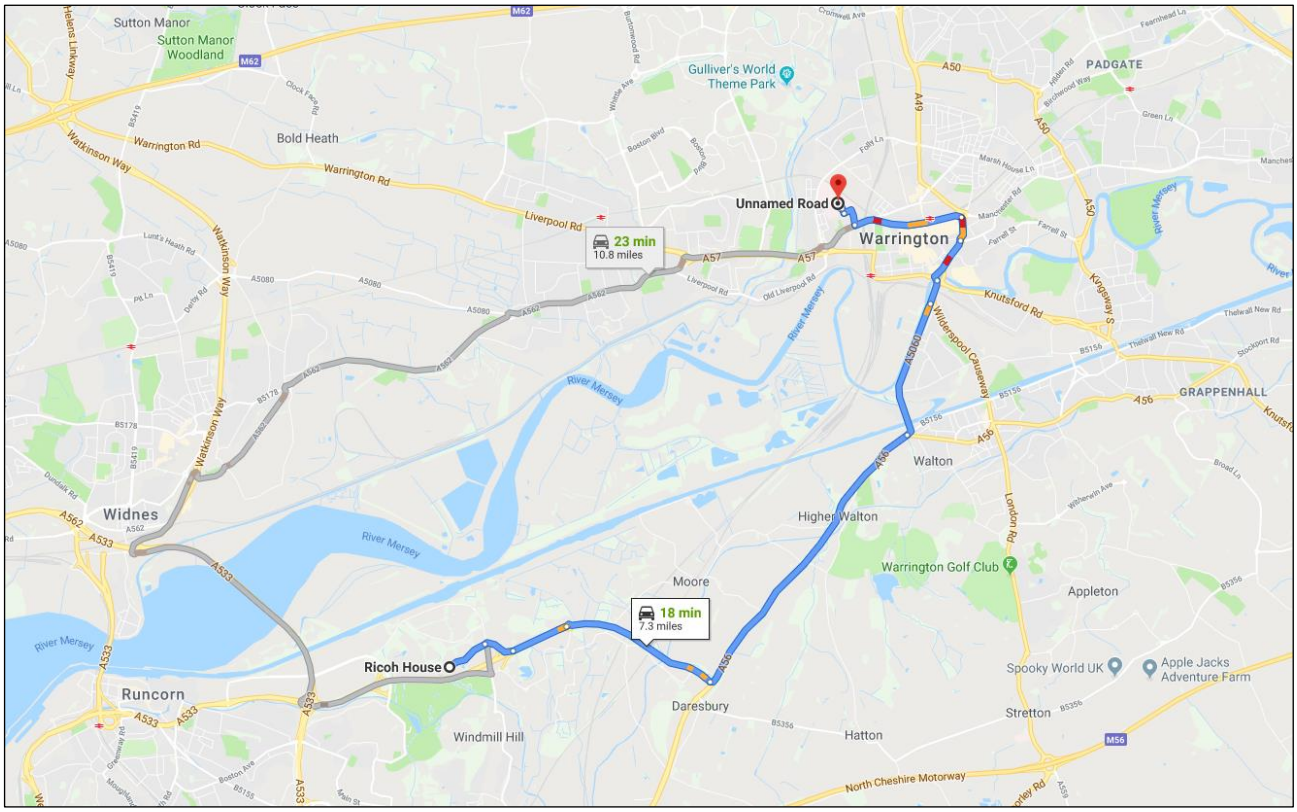


Figure 2: Warrington Hospital

Directions to nearest A&E Department: Approximately 7.3 miles/18 mins by car

- Head north-east on Tudor Rd towards Seymour Ct
- At the roundabout, take the 2nd exit onto the A558 slip road to Warrington/A5060/Chester/M56/ Moore/Sandymoor
- Merge onto Daresbury Expy/A558
- At the roundabout, take the 2nd exit and stay on Daresbury Expy/A558
- Turn left onto Chester Rd/A56
- Continue onto Chester Rd/A5060
- At the roundabout, take the 2nd exit onto Wilderspool Causeway/A49
- At the roundabout, take the 2nd exit onto Mersey St/A49
- At the roundabout, take the 2nd exit onto Fennel St/A49
- At Cockhedge Green, take the 1st exit onto Midland Way/A57
- Turn right onto Guardian St
- Turn right and arrive at Warrington Hospital

Description of Works: Evaluation and Watching Brief

A single 2m by 40m long evaluation trench is to be excavated by mechanical excavator, under constant archaeological supervision, to the first significant archaeological horizon, natural geology or a safe working depth. The principal aim of the evaluation is to identify and then excavate a moat relating to Norton Priory depicted on the 1757 Norton Estates Map. If the moat is not identified, the trench will be recorded and then backfilled, however, if it is identified, it will be excavated by hand to a safe working depth, with machine charactisation, if required. The mechanical excavator will assist with stepping of the trench, if required. Once the remains have been fully recorded, the trench will be backfilled, using only the compaction provided by the mechanical excavator.

The watching brief will be maintained by a single archaeologist during any below ground works required by the development (including: ground clearance; reduction of levels; and installation of drainage). The archaeologist will be given the opportunity to excavate, clean and record any archaeological features identified during the ground works.

Attendances

OA North Archaeologists: 2 x archaeologists (Project Officer/Supervisor and one archaeologist) to supervise the excavation of the evaluation trench. If the moat is identified, the team will increase by a further two archaeologists. The watching brief will be maintained by a single archaeologist.

OA North: 1 x vehicle

Plant Hire: 1 x 3CX and operator. Provided by Clive Hurt Plant Hire.

Safety Equipment/PPE

To be provided by OA North:
First aid kit.
Mobile telephone
PPE including: Hard hat (EN397:1995+A1/EN 397:2012+A1:2012), High-visibility Vest (EN ISO 20471 Class:2, GO/RT 3279, EN510) and Steel toecap and mid-soled safety boots (NISO 20345 (BSEN345). Protection category: S3, SRC).

Safety Gloves (EN388:2003EN420:2003+A1:2009), Light eye protection (EN166 F) and Ear Protection (Disposable ear plug EN 352-2:2002, SNR 37 or Ear Defender EN 352-3:2002, SNR 25) if required.

Welfare

1 x Groundhog unit or Welfare Van

Fencing

Heras Fence panels to secure trenching, provided by Generation Hire.

Control of Risks

The risk assessment is included within *Appendix 1* and will be kept under review throughout the project. Work will be undertaken in accordance with the RA, this method statement and the Written Scheme of Investigation (WSI), OA North's Health and Safety Policy and other Safe Systems of Work. Staff will be subject to an induction, will receive daily pre-shift meetings, are competent for the work, and will be under competent supervision. PPE has been issued but will act as a last resort.

Tasks and Sequence of Work

Summary of Tasks and Sequence of Work		
Order	**Task**	**Description**
1	Induction	Project Officer/Supervisor to induct all staff to this RAMS
2	Excavation of trench	Once inducted the trench will be set out by the use of a dGPS and will be scanned by a suitably qualified member of staff using a CAT and Genny. Once the trench is located, scanned, secured and deemed safe to excavate, it will be excavated by the mechanical excavator, supervised by the Project Officer/Supervisor. The excavation will proceed in 'spits' to the level of the first archaeological horizon or natural geology, the trench will be left in a clean state by the excavator.
3	Manual Cleaning and Excavation of Archaeological Features	With the trench open the archaeological team will manually clean the trenches, where required, and will excavate any archaeological features identified. The trench will be surveyed by the use of a dGPS.
4	Backfilling	Once the trench is fully recorded, it will be backfilled by the mechanical excavator.
5	Demobilisation	Once the works are completed the tools and site archive will be returned to the OA North office.
6	Report Production	A report will be produced based upon the results of the evaluation and watching brief.

Induction: all staff will undergo a full induction to the site and adhere to the requirements of that induction at all times, with the plant operator's CPCS ticket being checked.

Excavation of trenches: the trench will be set out by the use of a dGPS and will then by scanned by a suitably qualified member of staff using a Cable Avoidance Tool (CAT) and Genny. Once the trench is located and no potential services are identified in its vicinity, it will be excavated by the mechanical excavator, supervised by the Project Officer/Supervisor. The excavation will proceed in 'spits' to the level of the first archaeological horizon or natural geology. The trench will be left in a clean state by the excavator with topsoil and subsoil being stored to either side of the trenches and area, a safe distance (approximately 1m) from the edges. Either end of the trench will be battered or stepped to provide access into the trench.

If archaeological features or natural geology are not identified prior to 1.2m below ground level, isolated sondages will be excavated to test the depth of the natural geology. If the moat is encountered in the sondage, the machine will be used to characterise the moat. The trench will be secured with Heras-style security fencing, any isolated deeper excavations within the area will be fenced with orange barrier fencing, where required.

Manual Cleaning and Excavation of Archaeological Features: with the trench open the archaeological team with manually clean it, where required, and will then excavate any archaeological features identified. If the moat is identified, it will be hand excavated to a safe working depth. The machine will be used to characterise the moat beyond this safe working depth. The trench will be surveyed by the use of a dGPS.

Backfilling: once the trench is fully recorded, to the satisfaction of the client and the planning archaeologist, the arisings from the trench will be backfilled in the reverse order. They will also only be compacted by the mechanical excavator available on-site, with no additional compaction.

Demobilisation: the archaeologists will leave site and return the archive and tools to OA North's office.

Report Production: with the fieldwork completed a report will be produced.

Other Matters

Services: provision of service plans will be the responsibility of the client, although OA North staff will be responsible for the use of ground detection devices during excavations. Archaeological staff will pay due diligence at all times to prevailing ground conditions, and if they spot any unidentified services will stop excavations and inform representatives of the client immediately. This procedure will be communicated to all staff during the site induction and via TBT's.

Unexploded Ordnance (UXO's): are unlikely to be found during the works. Therefore, there is a LOW risk of identifying UXO's.

COSHH: substances covered by COSHH regulations routinely employed on site mainly relate to fuel and marking spray paint. COSHH assessments and MSDS can be provided for the regularly used substances, gas oil and line marker.

Contamination: should not be an issue. If any is identified, the OA North Project Officer/Supervisor will be made aware of it.

Biological: there is no reason to suspect biological hazards although the potential to contract Leptospirosis is ever present. The risk of contracting the disease, and the methods to be adopted in order to minimise that risk, will be communicated during the site induction, as well, as printed information cards. Good hygiene will be practised; gloves will be worn, washing of hands and faces will take place before eating or smoking.

Environmental: it is unlikely that there will be any livestock issues.

Welfare: will be in the form of a 12' Groundhog unit or welfare van, due to the short duration of the deployment. It will be the responsibility of OA North staff using the facilities to maintain them in a reasonable general state of hygiene, and to make provision for the appropriate disposal of general waste items. No littering or dumping of refuse will be tolerated on the site.

First Aid: the OA North Project Officer/Supervisor, is a qualified First Aider. They will be responsible for emergency first aid and for maintaining the first aid kit.

Lone working: no lone working will be undertaken. OA staff will at all times remain in sight/hearing of the groundwork's contractor

Weather/Daylight: OA Staff are issued with full waterproof PPE, so rain or inclement weather will not preclude working. However, should conditions deteriorate to the point that work is unsafe or unproductive, it may be necessary to stand down some, or all, of the team until conditions improve. In such an event, work will continue off site on paperwork or other support work if this exists. No work outside of daylight hours is currently anticipated.

OA North Qualifications and Experience: all OA North staff are suitably experienced and qualified for the roles they perform. As a minimum all field staff are in possession of up to date CSCS accreditation. All supervisory staff are experienced operatives, which include SSSTS qualified individuals, and designated operatives have suitable banksperson training and experience (NPORS qualifications) as well as first aid qualifications and relevant training and experience in the use of CAT scan and other appropriate devices.

OXFORD ARCHAEOLOGY
RISK ASSESSMENT FOR ARCHAEOLOGICAL EVALUATION

Site name:	Tudor Road, Runcorn, Halton, Cheshire	**Prepared by:**	Paul Dunn	
Site code:		**Approved by:**	Alan Lupton	**Signed:** A. Lupton.
Invoice code:		**Date:**	05/08/2019	CDM Status: Project does not fall under CDM Regulations at this time.

Job summary: A single 2m by 40m long evaluation trench is to be excavated by mechanical excavator, under constant archaeological supervision, to the first significant archaeological horizon, natural geology or a safe working depth. The principal aim of the evaluation is to identify and then excavate a moat relating to Norton Priory depicted on the 1757 Norton Estates Map. If the moat is not identified, the trench will be recorded and then backfilled, however, if it is identified, it will be excavated by hand to a safe working depth. The mechanical excavator will be used to characterise the moat beyond the safe working depth, if required. Once the remains have been fully recorded, the trench will be backfilled, using only the compaction provided by the mechanical excavator.

The watching brief will be maintained by a single archaeologist during any below ground works required by the development (including: ground clearance; reduction of levels; and installation of drainage). The archaeologist will be given the opportunity to excavate, clean and record any archaeological features identified during the ground works.

PPE: Hard hat (EN397:1995+A1/EN 397:2012+A1:2012), steel toe-capped and mid-soled boots (NISO 20345 (BSEN345). Protection category: S3, SRC), and hi-vis vest (EN ISO 20471 Class:2, GO/RT 3279, EN510).
Safety gloves (EN388:2003EN420:2003+A1:2009), light eye protection (EN166 F) and Ear protection (Disposable ear plug EN 352-2:2002, SNR 37 or Ear Defender EN 352-3:2002, SNR 25) to be worn as required.

Roles and responsibilities: OA are the Lead Contractor and will control all aspects of the Safe System of Work for the site. Their sub-contractors will be A E Faulks.

Site Information: The following list sets out key information which must be requested from the Client and used when assessing risk, and in advance of mobilisation to site. Please record which of these (and any other specific Site Information) have been requested, which have been supplied, and how this information (or the lack of it) has been used.

Services Plans (buried and overhead):	Requested Y	Received N	Measures taken - refer to relevant Hazard/Risk row, below to be provided by the client
Contamination Information/Survey, including Asbestos:	Requested Y	Received N	Measures taken - refer to relevant Hazard/Risk row, below to be provided by the client
Access Arrangements inc Landowner/Tenant details:	Requested Y	Received N	Measures taken - refer to relevant Hazard/Risk row, below to be provided by the client
Arrangements for Preventing Unauthorised Access to Site:	Requested Y	Received N	Measures taken - refer to relevant Hazard/Risk row, below to be provided by the client

Site Address:	**Grid Reference:**	**Location of nearest casualty receiving hospital:**
Land off Tudor Road, Runcorn, Halton, Cheshire, WA7 1TY	NGR: SJ 55040 83262	Warrington Hospital, Lovely Lane, Warrington, Cheshire, WA5 1QG Tel: 01925 635911

First Aid:

The regulations require that your risk assessment considers the appropriate level of 1st Aid cover necessary for each site. You must consider the size of the team, the nature of the hazards present (e.g. plant on site, working in deep excavations), the remoteness from the emergency services and whether the site is shared with other contractors engaged in hazardous activities. If you feel that a first aider is required for your site, please advise the Head of Fieldwork (or regional equivalent). If you are unclear about 1st Aid provision, please ask a Health and Safety Advisor for guidance.

Number of First Aiders required: 1	**Nominated First Aider person:** TBC

The following is a list of common risks, and suitable controls. Please review carefully, decide whether they apply to your project and complete Column 4. If Yes, add any further site-specific controls that might be necessary (in Column 5), beyond those already detailed, or follow the instructions given. If No, delete or strike-through the contents of Columns 5 to 7.

If there are risks on your project that are not detailed below please add them, and appropriate controls, to the Site-Specific Risk Assessment table below.

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
Lack of understanding of the site and its hazards.	Personal injury.	**Medium**	**Yes**	All staff to receive and sign for an induction based on this risk assessment and the WSI.	Fieldwork Director (**i.e. Project Officer or Supervisor**)	**Low**
Vehicle movement	Personal injury. Vehicle/ property damage	**Medium**	**Yes**	Authorized, assessed drivers only to drive OA vehicles (owned or hired). Banksman must be present for all reversing of vans, minibuses or any vehicle with restricted rear view. PPE: Hi-vis vests	Fieldwork Director	**Low**
Vehicle security	Unauthorised use of vehicles/ vandalism	**Low**	**Yes**	Contractor to immobilise plant. Park in designated areas. Tools to be kept in locked OA vehicle.	Fieldwork Director/ Driver	**Low**
Driving to and from site	Road traffic accident	**High**	**Yes**	All drivers, either of OA or of hired vehicles, must be qualified and competent to drive. Each driver must have their licence checked by the Assistant to the Head of Fieldwork (at OAS), or regional equivalent.	Project Manager/ Supervisor	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				Each driver must have their driving ability assessed. Each driver must have a copy of the driver's Code of Conduct, which details their rights and responsibilities as a driver. On long journeys it is particularly important that drivers take breaks, or that driving is shared by more than one driver. The Project Manager is responsible for the safety of the site team once they have left the office (Lancaster), although this does not affect the legal responsibilities that drivers assume each time they drive for OA - see 'Drivers Risk Assessment'		
Driving on site	Injury to staff and members of the public	**Medium**	**Yes**	All vehicle movements around sites should be subject to a 5-mph speed limit and should take account of footpaths and access routes. Reversing of vans and all vehicles with restricted rear view must only be undertaken with the assistance of a banksman Wheels should be checked for excess mud before driving on the public highway.	Fieldwork Director/Drivers	**Low**
Safe storage of equipment in vehicles and good housekeeping	Personal injury, traffic accident	**Medium**	**Yes**	Before driving, check to ensure that all tools, equipment, materials, files, and possessions are stored safely. Nothing should be able to move or break free and interfere with the operation of the vehicle. Vehicle interiors should be kept as clean as possible; mud and dust should not be allowed to build up and any litter tidied up. Tools and heavy equipment should be stored separately from passengers, segregated by e.g. a fixed bulkhead.	Fieldwork Director/Drivers/ Passengers	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				Particular care should be taken when transporting fuel, other flammable liquids or aerosols. Fuels should not be transported in the vehicle cab and should be transported in accordance with the law and in appropriate containers (i.e. plastic jerry cans <10l and metal jerry cans <20l; max. 40l). Aerosols (such as spray paint) should not be transported in the cab and should be stowed safely, so that they cannot roll around or be pierced or damaged. The vehicle first aid kit should be regularly checked and restocked and should be visible, readily available and always stored in the same place.		
Equipment in general	Personal injury, property damage	**Medium**	**Yes**	No OA staff to use equipment not owned or hired by OA.	Fieldwork Director	**Low**
Damaged/ defective equipment	Personal injury, property damage	**Medium**	**Yes**	Daily inspection of equipment. Replace defective equipment where necessary and ensure that Logistics Dept. are aware that defective equipment has been returned.	Fieldwork Director	**Low**
Slips, trips and falls	Personal injury	**Medium**	**Yes**	All access and egress routes to be clearly defined and kept as dry and free from mud as practicable (daily inspections must be undertaken to ensure this). Tools and other equipment to be kept tidy and away from defined access routes. Only manageable loads to be carried. Edge protection to be installed as necessary.	Fieldwork Director	**Low**
Unauthorised access	Injury to members of the public	**Medium**	**Yes**	The trench area will be secured with Heras-style security fencing. Signage and fencing (Netlon) around locally deeper trenches will be necessary.	Fieldwork Director	**Low**
Mechanical excavator	Personal injury	**High**	**Yes**	Authorised and competent driver. Driver's ability/attitude regarding safe working should be monitored, and action taken if necessary. Competent OA signaller to be used for plant work on site.		**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				Banksman to be used for plant movements around site Minimum banksman PPE: Orange hard hat, Orange hi-vis vest, safety boots, light eye protection and safety gloves. DRIVER'S CPCS OR NPORS CARD NEEDS TO BE CHECKED AND PHOTOGRAPHED BEFORE WORK COMMENCES: Ensure card is the right one for the machine being used and has not expired – refer to OA Safety Advisors if you are in doubt. In both cases the card should be blue (not red, which is a trainee card) and should have a CSCS logo on it. Except as defined below, never enter the working arc of the machine. Working under a machine bucket is a common cause of accidents, many of them fatal. If the signaller wishes to investigate possible archaeology, to speak to the driver, or approach the machine for any reason, she/he must give the signal to stop (one or two hands raised, palm(s) towards the driver) and then signal that she/he is going to approach (one hand placed on chest, then point where you are going). Make sure the signals have been understood, and only approach when the driver has moved the excavator arm to one side and rested the bucket on the ground. The Plant will be immobilised and shuttered up when being left on-site overnight.		

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
Quick Hitch mechanism on mechanical excavator	Crush or strike injury if bucket becomes detached	**High**	**Yes**	A quick hitch (QH) is the system that allows the driver to quickly change between buckets/breaker or other equipment. To be legal the QH must have a locking pin, whether this is locked automatically from the cab, or manually by the driver getting out of the cab to put a pin in place. To be safe, the locking pin must always be used, and the driver must know how to operate it. Before starting, ask the driver to confirm which of these systems is in place, and to confirm that the system will be used. Only proceed if the driver clearly states which type, he will be using. If you are present when the bucket is being changed on a manual type, watch that the pin is put in place.	Banksman / signaller	**Low**
Working in deep excavations	Trench collapse, falling objects, falling into trench. Personal injury.	**High**	**Yes**	Deep excavations can be considered as any excavation which creates the potential for a significant fall or collapse of material. This can apply to excavations as shallow as 0.5 m deep. An assessment of the stability of soils for all excavations >500 mm deep MUST be made and recorded in the additional rows below. If in doubt, do not enter, or step/batter/shore. The trenches will not exceed a safe working depth of 1.2m and steps will be cut into the ends of the trenches to provide access and egress. If deeper sondages are excavated they will not be entered by OA staff. If the moat is identified, the trench will be stepped to accommodate OA staff hand excavating. Deep excavations may require a Method Statement to accompany the detailed Risk Assessment (to be added below in the Site-Specific Risk Assessment section if required) - detailed guidance is available from the OA H and S Advisors.	Project Manager	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
Underground Services	Risk of electrocution, explosion or flooding.	**Medium**	**Yes**	Undertake Services check through statutory bodies/clients' drawings wherever possible. Perimeter of site (walls, hedgelines etc.) to be checked for markers indicating buried services prior to CAT scanning and excavation. Competent person (defined by the HSE as someone who has received, as a minimum, training from a qualified operative) to check for unknown underground services prior to machining using a Cable Avoidance Tool and signal generator ("CAT and Genny"). Hand excavate in areas of suspected live services to locate and isolate from interference from mechanical excavation. Notify statutory bodies/clients if suspected live services are found. ALWAYS ASSUME THAT ALL SERVICES ARE LIVE.	Fieldwork Director	**Low**
Weather	Cold/ wet weather: hypothermia/ice Hot weather: heatstroke/ dehydration Electrocution	**Low**	**Yes**	Re-arrange fieldwork if practicable. Staff will be issued with suitable clothing and suitable footwear. Additional breaks to be taken in the event of very hot weather. Work on site to be suspended in the event of prolonged heavy rain, or when site becomes too slippery to be safely worked. Weather forecasts should be monitored, and precautions taken in the event of predictions of dangerous weather e.g. high winds - shelter in a cabin or vehicle; electrical storms – do not use survey equipment or polecams, i.e. anything that could increase the chance of a lightning strike. If necessary, shelter in a vehicle.	Project Manager	**Low**
Soil or groundwater contamination	Ingestion/contact with contaminated soils or groundwater, leading to ill-health	**Medium**	**Yes**	Should evidence of contamination be found (by odour or appearance) excavation to cease and suitable advice to be sought. If contaminants are known or suspected prior to work starting, or discovered during site work, specific COSHH assessment must be undertaken and included in the 'Additional Risk Assessment' section (below). Relevant departments should be notified of	Fieldwork Director/ Project Manager	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				the risk (logistics, environmental, finds, archives depts). All material (e.g. finds, records and equipment) returning from contaminated sites should be as clean as possible in order to minimise the risk of contaminants being bought back to the office or stores. Finds labels indicating possible or known contamination (white with yellow dots – available from OA stores) should be used, marked in red ink rather than the usual black. Where no contamination is known best practice is to treat as suspected anyway, by adopting a good hygiene regime. Wash face and hands (hot water and soap) before each break and at end of day. No smoking or eating on site except in designated areas.		
Asbestos	Asbestosis, pleural damage and lung cancer/mesothelioma	**Medium**	**Yes**	Asbestos is a naturally occurring mineral that can be found in a very diverse range of materials (asbestos containing materials or ACMs) utilised prior to 2000; most commonly between the 1950s and 1980s. It cannot be definitively identified visibly through fabric, texture or colour. The risk will be higher if working on a brownfield site, in an area containing building debris or within buildings constructed or refurbished before 2000. Sites with made ground and/or with evidence of dumping episodes may also contain building debris comprising ACMs. Risk will be lower in areas of rural landscape. The risk to health is through inhalation of asbestos fibres. Prior to the commencement of a project the ground investigation report should be reviewed for any evidence or risk of asbestos, and its recommendations followed. Additional risk assessment should be undertaken using that report and recorded below. In the absence of such a report: if any suspect material is encountered immediately report to the OA Project Manager before proceeding with any work. <u>As a general precaution, if working in dry conditions on urban or brownfield sites, masks</u>	Fieldwork director/staff	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				(FFP3 type) should be worn during machine excavation. Asbestos is not expected on this project. Removal of any ACMs should be undertaken by suitably qualified professionals only.		
Zoonotic hazards, e.g. Psittacosis, Leptospirosis (Weil's Disease), Tetanus	Contraction of serious disease	**Medium**	**Yes**	Induction. Issue information cards. High standard of hygiene (controls as for contaminated ground).	Fieldwork Director	**Low**
Noise	Hearing damage; tinnitus	**Medium**	**Yes**	Hearing protection in the form of ear plugs, or preferably ear defenders compatible with hard hats, must be available for sites where noise is likely to be a hazard. As a general rule of thumb, if you are having to raise your voice to make yourself heard by someone less than 2 m away, the noise level is likely to be higher than 80 decibels. At this level it is advisable although not compulsory to wear ear defenders or ear plugs. This advice must be passed on to all staff by the person responsible for monitoring sound levels (usually the Supervisor or Project Officer). If you have to shout to be heard, the level is likely to be in excess of 85dB. At this level the wearing of ear defenders or plugs is mandatory and must be enforced by the Supervisor or Project Officer. Hearing protection zones must be established on sites where noise is a problem, and appropriate PPE worn within them. In most case this zone will be the area around a working mechanical excavator	Fieldwork Director	**Low**
Use of portable music devices and mobile phones	Impaired hearing and alertness leading to accidents	**Medium**	**Yes**	The use of a portable music device (MP3 player, mobile phone etc.) will impair a worker's ability to hear surrounding sounds and compromise the user's general alertness and concentration. This is especially hazardous if the user is working around	Fieldwork Director/ all staff	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				moving equipment or in circumstances where a worker must be able to hear warning sounds. The use of portable music devices is therefore banned on all OA sites. Using a mobile phone will also compromise the user's alertness and so all calls must be made in a safe place, away from site operations, usually the site office or welfare facility.		
Sharp objects	Injury or disease	**Medium**	**Yes**	Great care to be taken when clearing areas, moving rubbish etc where there is the potential for presence of needles/any materials associated with drug use. If found, to be left in place, area cordoned off and advice sought from Local Authority Environmental Health Officer (EHO). As a last resort, needles may be moved by person wearing gloves and using a shovel. Place in a bucket and cover with a layer of soil. Report to EHO.	Fieldwork Director/ all staff	**Low**
Unexploded ordnance	Explosion	**High**	**Yes**	Consideration should be given to a sites past use, preferably at desk-based assessment stage but certainly prior to mobilisation to site. The site-specific risk assessment will identify sites located in areas where ordnance was produced, or sites which may have been a target for wartime bombing raids. Where sites are identified as having the risk of unexploded ordnance the risk assessment will define a specific procedure for dealing with 'suspicious objects. This procedure will be bought to the attention of everyone on site by means of induction and prominently displayed information sheets.	Project Manager	**Low**
Manual handling	Risk of strain injuries from incorrect or excessive manual handling	**Medium**	**Yes**	A considerable amount of manual handling will be involved in the archaeological work. This will include loading and unloading equipment, and shovelling Consideration must always be given to whether the load in question can be lifted by other means, e.g. the	Fieldwork Director	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				mechanical excavator can be used for large quantities of spoil unless archaeological circumstances dictate otherwise. Members of the excavation team will not be asked to lift loads beyond their capabilities. Manual lifting will be carried out carefully, and in a manner calculated not to cause injury to the lifter. In general, for the type of loads predicted, this means a lift carried out with the load close to the body. The back of the lifter should be kept upright so that the legs rather than the back provide the lifting force. Staff will be rotated so that they do not perform very repetitive tasks (e.g. hand cleaning with trowels) for very long periods. Shovels and spades will be used from a firm, stable standing position which uses the legs rather than the back to lift the weight. The surrounding area is to be free of obstructions and other personnel. When using a pick or mattock, the user's feet must be placed apart to obtain a firm footing, and the pick wielded so that the point of contact is within easy reach, but not too close to the feet. The surrounding area, including overhead, is to be free of obstructions and other personnel. Care is required when carrying trowels, and when putting high manual pressure on the trowel when pulling towards the body. In the latter situation the trowel may slip or jump against the user.		
Harassment	Stress, personal injury	**Medium**	**Yes**	No harassment or bullying of any type (be it physical, verbal, sexual, racial etc) will be tolerated on any OA project. Should any member of staff encounter harassment or feel threatened by the actions of another (within or external to OA), they must report it to the Project Supervisor who in turn will report it to the appropriate authority and make a record of the harassment and any actions taken. If harassment	Project Manager/Supervisor/ All Staff	**Low**

1. HAZARD	2. RISK	3. RISK RATING (High Medium Low)	4. Applies to this project? Yes/No	5. CONTROLS	6. ACTION BY?	7. RESIDUAL RISK RATING (High Medium Low Insignificant)
				persists, OA staff will remove themselves from the site.		

ADDITIONAL RISK ASSESSMENT					
HAZARD	**RISK**	**RISK RATING (High Medium Low)**	**CONTROLS**	**ACTION BY?**	**RESIDUAL RISK RATING (High Medium Low Insignificant)**
Unloading and loading plant, welfare and fencing	Personal Injury, Road Traffic Accident, damage to vehicles	**High**	Plant, Welfare and Fencing to be unloaded and loaded at Grange Farm. The access from Grange Road onto the lane to Grange farm is tight, with poor visibility along Grange Road. As such, two OA Staff acting as Banksmen, wearing PPE, to bank the low-loader off and back onto Grange Road.	Banksman, Project Supervisor	**Low**

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APPENDIX B TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Evaluation Trench						
General description					**Orientation**	NW-SE
North-west/south-east-aligned trench excavated in the western half of the site. For the majority of the trench, the maximum depth was 0.4m, at which point natural geology ***101*** was encountered; this was overlain by redeposited natural ***100***, with no evidence of topsoil. Ditch ***102*** was identified at the south-eastern end of the trench in the assumed location of the Norton Priory moat. The trench was subsequently widened, and a stepped section was excavated through the feature. There were no finds recovered, but column samples and bulk samples were taken from suitable deposits.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	2.3
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
100	Layer	-		Redeposited natural	-	-
101	Layer	-	-	Natural geology	-	-
102	Cut	>2.8	1.89	Cut of moat	-	-
103	Fill	>2.7	0.6	Red-grey silty clay	-	-
104	Fill	>0.8	0.58	Reddish-grey silty clay	-	-
105	Fill	>2.8	0.93	Mid-brown-grey sandy silt fill	-	-
106	Fill	>2.17	0.38	Redeposited natural fill	-	Post-medieval
107	Fill	>2.27	0.15	Mid- to dark grey silty sand	-	Post-medieval

Watching Brief						
General description					**Orientation**	-
Watching brief during excavation of foundation pads and drainage, including attenuation. No significant archaeological remains were encountered during the excavation of the foundation pads due to the shallow nature of the works. The top of the moat identified in the evaluation trench was potentially identified in the south-western foundation pads and the western drainage.					**Length (m)**	-
					Width (m)	-
					Avg. depth (m)	-
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
1000	Layer	-	0.4	Redeposited natural	-	-
1001	Layer	-	-	Natural geology	-	-
1002	Layer	-	0.5	Hardcore in the northern part of the site	-	-
1003	Fill	-	0.3	Redeposited natural fill, identified in foundation pad	-	Post-medieval
1004	Fill	-	0.15	Mid-brown-grey sandy silt fill, identified in foundation pad	-	Post-medieval

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1005	Fill	-	0.3	Redeposited natural fill, identified in western drainage route	-	Post-medieval
1006	Fill	-	0.15	Mid- to dark grey sandy silt fill, identified in western drainage route	-	Post-medieval

APPENDIX C ENVIRONMENTAL REPORTS

C.1 Plant remains

By Denise Druce

C.1.1 ***Introduction***: a targeted programme of palaeoenvironmental sampling was implemented in accordance with the Oxford Archaeology *Environmental Sampling Guidelines* (OA 2017). To comply with accepted professional guidelines (Campbell *et al* 2011), between 20- and 40-litre samples, or the entirety of a deposit, were taken to assess their potential for containing palaeoenvironmental remains, including those suitable for radiocarbon dating.

C.1.2 ***Methodology***: depending on the nature of the deposits, the samples were either wet-sieved through a 250µm mesh, and kept wet, or floated, where the flot was caught in a 250µm mesh, and air dried. The retents of the floated samples were washed through 2mm and 500µm meshes and air dried. The samples were scanned using a *Leica* stereo-microscope, and any plant material, including fruits, seeds, charcoal and wood fragments, was recorded. Other remains, such as bone, insects, small artefacts, ceramic building material (cbm), industrial/metal waste, and coal/heat-affected vesicular material (havm), were also noted. Any surviving fruits/seeds were provisionally identified using the modern reference collection held at OA North, and with reference to the *Digital Seed Atlas of the Netherlands* (Cappers *et al* 2006). The presence of modern roots, earthworm eggs and modern seeds was also noted to ascertain the likelihood of any contamination. The remains were quantified on a scale of 1–4, where 1 is rare (one to five items); 2 is frequent (6-50 items); 3 is common (51–100 items); and 4 is abundant (greater than 100 items). Plant nomenclature follows Stace (2010). The assessment results were recorded on *pro-forma* sheets, which will be kept with the site archive. The potential of each sample for any further work and for radiocarbon dating is also highlighted.

C.1.3 Wood and charcoal fragments over 2mm in size were quantified and scanned to assess preservation and wood diversity. Wood maturity was also noted to assess wood type (*ie* heart wood, sap wood, or round wood) and to identify suitable material for radiocarbon dating. Identification and classification of the wood was aided by Hather (2000). The anatomically similar *Prunus* species, which may include blackthorn, wild plum, wild cherry and bird cherry, is referred to as blackthorn-type in the text.

C.1.4 ***Results***: two bulk samples, 30 litres in size, were taken during the investigations, which comprise the fills (***103*** and ***105***) from ditch ***102***. The ditch is likely to be part of a moat associated with the priory complex, dated to between the twelfth and sixteenth centuries (Greene 1989).

C.1.5 The results of the assessment are presented in Table 1. These results indicate that the moat deposits contained environmental remains preserved by waterlogging. Although only few remains survived in deposit ***103***, deposit ***105*** produced abundant well-preserved wood fragments and fruits/seeds, and common invertebrate remains.

Context No	Sample No	Feature	Waterlogged plant remains (wpr)	Wood	Charred plant remains	Other remains
103	4	Ditch	Stem fragments (2), bud scales (1), bryophyte stems (1)		-	Coal fragments (1)
105	3	Ditch	Seeds/fruits (2), includes *Rubus* sect 2 *Glandulosus*, *Alnus glutinosa*, *Crataegus* sp, Caryophylaceae, *Urtica* sp, *Ranunculus repens*-type, *Solanum* sp	(4) Mostly *Prunus* sp twig fragments, frequent large *Quercus* sp fragments	<2mm charcoal (2), >2mm charcoal (1) *Quercus* sp	Invertebrates (3)

Remains are quantified on a scale of 1–4 where (1) is rare (one to five items); 2 is frequent (6-50 items); 3 is common (51–100 items); and 4 is abundant (greater than 100 items)

Table 1: Palaeobotanical assessment results of samples taken

C.1.6 The presence of abundant blackthorn-type (*Prunus* sp) twig fragments, and blackberry (*Rubus* sect 2 *Glandulosus*), alder (*Alnus glutinosa*), and hawthorn-type (*Crataegus* sp) seeds in deposit ***105*** suggests conditions adjacent to this section of the moat was scrubby during its filling. Seeds from herbaceous taxa were also recorded, included pinks (Caryophylaceae), nettles (*Urtica* sp), buttercup (*Ranunculus repens*-type), and nightshade (*Solanum* sp). The paucity of cultivated plants suggests the moat, in this location, may have been in receipt of only minimal occupation debris, the few charred remains perhaps representing accidental inclusions and/or casual floor debris. Relatively large chunks of oak (*Quercus* sp) wood may represent woodworking debris, although this conclusion must remain tentative.

C.1.7 ***Potential***: the presence of abundant well-preserved wood fragments, seeds/fruits, and invertebrate remains from deposit ***105*** suggests that the site has the potential for the recovery of environmental remains, including those preserved in anoxic conditions. Such remains are important for providing information on the environment of the site and may potentially provide evidence for agricultural or horticultural practices carried out in the grounds of the priory. In addition, fragments of small round wood and seeds would provide suitable material for radiocarbon dating.

C.1.8 ***Recommendations***: further work could be undertaken on the waterlogged plant remains and invertebrate remains reported on in this assessment. Any further palaeoenvironmental work should be accompanied by a programme of radiocarbon dating.

C.2 Pollen

By Mairead Rutherford

C.2.1 ***Introduction***: four sub-samples, from a series of overlapping monoliths through sediments from the buried moat at Norton Priory, were assessed for pollen. Although pollen was present in two of the sub-samples, it was not recovered in sufficient quantity to recommend further work.

C.2.2 ***Methodology***: the monoliths were cleaned, and the lithology described prior to sub-sampling. Recording of lithology followed English Heritage geoarchaeology and environmental archaeology guidelines (Ayala *et al* 2007; Campbell *et al* 2011).

C.2.3 Pollen processing was undertaken by RPS at the Northwich Lab and followed standard procedures (method B of Berglund and Ralska-Jasiewiczowa 1986), using HCL, NaOH, sieving, HF and Erdtman's acetolysis, to remove carbonates, humic acids, particles >170µm, silicates and cellulose, respectively. The samples were then stained with safranin, dehydrated in tertiary butyl alcohol, and the residues mounted in 2000cs silicone oil. Slides were examined at a magnification of x400 by ten equally spaced traverses across a slide or until at least 100 pollen grains were counted. Pollen identification was made following the keys of Moore *et al* (1991), Faegri and Iversen (1989) and a small, modern reference collection. Plant nomenclature follows Stace (2010). The preservation of the pollen was noted, and an assessment was made of the potential for analysis.

C.2.4 ***Results: Lithology***: four overlapping monoliths from sample 2 were logged in detail (Table 2).

Sample number	Context number	Depth (m)	Lithology	Sub-samples
2	***107-106***	0-0.50	0-0.34m Disaggregated reddish sand with stones, broken brick fragments. 0.34–0.50m Slightly more consolidated reddish fine sand, charcoal fragments, stones, brick.	
2	***106-105***	0.50-1.00	0.50-0.90m Slightly consolidated reddish-brown, slightly clayey sand, charcoal fragments, stones, brick.	0.63-0.64m
2	***105-104***	0.85-1.35	0.90-1.10m Reddish-brown sandy clay, charcoal fragments, stones. 1.10-1.35m Red/orange/brownish clay, stones, charcoal fragments.	1.05-1.06m 1.27-1.28m
2	***103***	1.35-1.90	1.35-1.90m Very stiff, hard, dried clay; generally red but with paler / very pale buff-green from 1.50-1.58m.	1.53-1.54m

Table 2: Lithology of monolith sequence 2 through the moat

C.2.5 ***Pollen:*** the sample from deposit ***105*** contained the most pollen (Table 3), reaching a total pollen sum of 42 (including tree, shrub and herb pollen but excluding fern spores). Most of the pollen recorded is from herbs, in particular grasses (Poaceae) and large grasses / cereal-type pollen. Pollen of the pinks family (Caryophyllaceae) was also relatively commonly recorded, along with that of stitchworts (*Stellaria*-type). Dandelion-type (*Taraxacum*-type) pollen, daisy-type (Asteraceae) and thistles

(*Cirsium*-type) are also present. Tree and shrub pollen is very rare, with occurrences only of alder (*Alnus*), pine (*Pinus*) and heather (*Calluna*).

Sample Number		2	2	2	2
Feature		Moat	Moat	Moat	Moat
Context		***106***	***105***	***104***	***103***
Preservation		Mixed	Mixed	-	-
Potential		NO	NO	NO	NO
Depth (m)		0.64	1.06	1.28	1.54
Trees and Shrubs					
Alnus	Alder		1		
Calluna	Heather	1	1		
Pinus	Pine		1		
Crops					
Cerealia	Cereal-type	2	11		
Herbs					
Asteraceae	Daisy family	2	2		
Caryophyllaceae	Pinks family		4		
Cirsium-type	Thistles	1	2		
Cyperaceae	Sedges		2		
Poaceae	Grass family	5	12	1	
Persicaria amphibia	Amphibious bistort	1	1		
Stellaria-type	Stitchworts		1		
Succisa pratensis	Devil's Bit Scabious	1			
Taraxacum-type	Dandelion-type	11	4		
	Total land pollen	**24**	**42**	**1**	**0**
	Number of traverses	10	10	10	10
Ferns and Mosses					
Polypodium vulgare	Common polypody	13	6		
Pteropsida (monolete)	Fern spores (monolete)	19	500		
Aquatics					
Sagittaria-type	Arrowheads	3	1		
Moss spores					
Sphagnum	Moss spores		1		
Microscopic charcoal			2		
Deteriorated grains		3			

Table 3: Raw pollen counts from the moat deposits

C.2.6 Pollen of plants associated with wetter environments was recorded from occurrences of amphibious bistort (*Persicaria amphibia*) and the aquatic taxon, arrowhead (*Sagittaria*), of the water-plantain family. Pollen of sedges (Cyperaceae) was also recorded.

C.2.7 Monolete fern spores (Pteropsida) were recorded in superabundance, in particular in deposit ***105***. Far fewer spores of the fern common polypody (*Polypodium vulgaris*) were recorded.

C.2.8 The pollen count is really too low to permit a clear interpretation; however, some observations may be suggested based on the overall assemblages. The pollen grains from the herb community may suggest their derivation from an open, grassy environment, with some weeds of disturbed ground (such as dandelion-type, daisies and thistles) also present. Evidence of the presence of wet ground is in the form of

bistorts, arrowhead and sedges, as might be expected within a former moat environment. These taxa are known from wet places, including ponds, canals and slow rivers (Stace 2010).

C.2.9 Given the nature of the deposit, it is perhaps more likely that the recorded cereal-type grains are representative of pollen of wild grasses, such as sweet-grasses (*Glyceria*-type), that are known to grow in or adjacent to water (Stace 2010), rather than representing cultivated cereals (the dimensions of both wild and cultivated grasses overlap, making the distinction between the two difficult (Andersen 1979)). No cereals were found during the assessment of the plant remains (*Appendix C1*), suggesting the pollen grains are probably of wild grasses. However, if the cereal-type pollen grains do represent cultivated crops, then it is likely they came from arable fields adjacent to the moat, or as a result of crop processing or use (for example, kitchen use or waste) or from animal waste that found its way into the moat. However, there are no records of weeds associated with cultivation, such as cornflower (*Centaurea cyanus*) or of intestinal parasites that might support digestion of foodstuffs, including cereals.

C.2.10 The very rare occurrence of tree pollen suggests an absence of local stands of trees; pollen from alder and pine trees is produced in vast quantities and might be expected to represent a large proportion of the pollen sum had these trees been present locally (Stace 2010).

C.2.11 The quantity of fern spores was calculated outside the main pollen sum and monolete ferns, in particular, were found in abundance. Ferns are epiphytes and normally associated with woodlands; however, the huge abundance of spores at this site may suggest ferns growing on the edges of the moat; ferns grow in moist, shady locations and thrive on sloping sites where the groundwater is not static (British Pteridological Society 2021). Spores of common polypody were also recorded; these ferns are often found on rocks, walls, tree-trunks and banks (Stace 2010).

C.2.12 ***Potential***: the absence of sufficient pollen suggests that the data are not suitable for analysis. No further work on the pollen aspect of the palaeoenvironmental component is therefore recommended.

APPENDIX D SITE SUMMARY DETAILS

Site name:	Tudor Road, Runcorn, Halton, Cheshire
Site code:	TRR20
Grid Reference	SJ 55033 83274
Type:	Evaluation and Watching Brief
Date and duration:	Evaluation May 2020 (5 days); Watching Brief May 2020 and November 2020 to January 2021 (10 days).
Area of Site	4,140m^2
Location of archive:	The archive is currently held at OA North, Mill 3, Moor Lane Mills, Moor Lane, Lancaster, LA1 1QD, and will be offered to Norton Priory Museum, in due course.
Summary of Results:	Initial evaluation trench identified moat ***102*** at the south-eastern end of the trench. The south-eastern extent of the feature could not be excavated; however, the northern 2.8m of the profile was visible within the trench, and survived to a depth of 1.89m. The feature contained five deposits with some exhibiting waterlogging. There were no other archaeological features encountered within the evaluation trench. Following the evaluation, a watching brief was maintained during test-pitting, and excavation of foundation pads and drainage, including attenuation. Limited archaeological remains were encountered during the works, although there was some possible evidence for the upper deposits of the moat within the south-west foundation pads and the western drainage route. There were no finds recovered from the fieldwork, though environmental samples were taken of the moat fills during the evaluation. Deposit ***105*** produced abundant well-preserved wood fragments and fruits/seeds, and common invertebrate remains. However, column samples taken from the excavated section of the moat did not produce sufficient pollen to warrant analysis.

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