

Archaeological watching brief and evaluation at land north of St Martin's Gate, Worcester

Worcestershire Archaeology
For RPS Group

February 2020



Find out more online:
www.explorethepast.co.uk



LAND NORTH OF ST MARTIN'S GATE WORCESTER

Archaeological evaluation and watching brief report



©Worcestershire County Council

Worcestershire Archaeology
Worcestershire Archive & Archaeology Service
The Hive
Sawmill Walk
The Butts
Worcester
WR1 3PD

Explore
the Past

SITE INFORMATION

Site name:	Land north of St Martin's Gate, Worcester
Local planning authority:	Worcester City Council
Planning reference:	P09D0106
Central NGR:	SO 85304 55000
Commissioning client:	RPS Group
WA project number:	P5450
WA report number:	2788
HER reference:	WCM102414 (evaluation), WCM102419 (watching brief)
Oasis reference:	fieldsec1-384057

DOCUMENT CONTROL PANEL				
Version	Date	Author	Details	Approved by
1	07/02/2020	Peter Lovett	Draft for comment	Tom Rogers
2	13/02/2020	Peter Lovett	Addressing client comments	Tom Rogers

This report is confidential to the client. Worcestershire Archaeology accepts no responsibility or liability to any third party to whom this report, or any part of it, is made known. Any such party relies upon this report entirely at their own risk. No part of this report may be reproduced by any means without permission.

CONTENTS

SUMMARY	1
REPORT	2
1 INTRODUCTION	2
1.1 Background to the project	2
1.2 Site location, topography and geology.....	2
2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND	2
3 PROJECT AIMS	4
4 PROJECT METHODOLOGY	4
5 ARCHAEOLOGICAL RESULTS	5
5.1 Introduction	5
5.2 Watching brief test pits, by Jessee Wheeler	5
5.3 Trench descriptions	6
5.3.1 Trench 2	6
5.3.2 Trench 3	7
5.3.3 Trench 4	8
5.3.4 Trench 5	8
6 ARTEFACTUAL EVIDENCE, BY LAURA GRIFFIN	9
6.1 Project aims	9
6.2 Project methodology	9
6.2.1 Recovery policy	9
6.2.2 Method of analysis	9
6.2.3 Discard policy	9
6.3 Results	10
6.3.1 Summary of artefacts by site phase	11
6.4 Discussion	14
6.5 Recommendations	14
7 ENVIRONMENTAL EVIDENCE, BY ELIZABETH PEARSON	14
7.1 Introduction	14
7.2 Methodology	14
7.2.1 Sampling policy	14
7.2.2 Processing and analysis	15
7.2.3 Discard policy	15
7.3 Results	15
7.3.1 Animal bone	15
7.3.2 Charred plant and macrofossils and charcoal	16
7.4 Discussion	17
7.5 Significance	17
8 DISCUSSION	18
9 SIGNIFICANCE	19

10	CONCLUSIONS	19
11	PROJECT PERSONNEL	20
12	ACKNOWLEDGEMENTS	20
13	BIBLIOGRAPHY	20

FIGURES

PLATES

APPENDIX 1: TRENCH DESCRIPTIONS

APPENDIX 2: SUMMARY OF PROJECT ARCHIVE

APPENDIX 3: SUMMARY OF DATA FOR HER

Archaeological watching brief and evaluation of land north of St Martin's Gate, Worcester

By Peter Lovett

With contributions by Laura Griffin, Liz Pearson, and Jesse Wheeler

Illustrations by Laura Templeton

Summary

An archaeological watching brief and evaluation were undertaken by Worcestershire Archaeology (WA) in January 2020 at land north of St Martin's Gate, Worcester (NGR SO 85304 55000). The project was commissioned by RPS Group on behalf of their client, in advance of a proposed redevelopment of the site. Planning permission for the development was granted subject to a programme of archaeological works.

The watching brief was undertaken on the demolition of brick industrial buildings which stood on the site prior to works, including their foundations and the excavation of test pits. The evaluation stage comprised four trenches across the site and built on the information gained from a single trench which was dug in 2015 in which stratified medieval and post medieval deposits were recorded.

The site lies to the east of the historic City of Worcester in an area that was formerly marshy. Previous archaeological excavations in the vicinity have revealed well preserved Roman, medieval and 17th Century deposits.

In the 19th and 20th Centuries the site was part of an industrial suburb principally focused on the production of porcelain and vinegar. The watching brief recorded the demolition of a number of brick-built buildings identified in a building record as acidifying sheds, a filtering shed, stables and an infill block/passage.

Undisturbed natural strata was only reached by machine-dug sondages or via augering. A thick band of alluvium lay over the natural ground, which could be broadly divided into three layers. A paleochannel or possible ditch was observed at the bottom of this sequence, and was itself filled by clean sterile alluvium. This was sealed by a gleyed medieval soil layer dating to 12th-14th century. A large ditch that may relate to the city defences during the Civil War was observed in Trench 2; it contained pottery of mid-17th-18th century date. Elsewhere the medieval layer was cut by a number of small drainage channels, running roughly north to south. These were backfilled in the 17th-18th century.

A red sandstone and brick wall was revealed in Trench 2, which correlates well with a building on Young's 1779 map of Worcester, and around which were recovered a number of animal bones indicative of tanning.

By the nineteenth century most of the area had dried out and was under agricultural use. A remnant of an early 19th century terrace was revealed in the form of a heavily truncated brick yard surface.

Report

1 Introduction

1.1 Background to the project

An archaeological watching brief and evaluation was undertaken by Worcestershire Archaeology (WA) in January 2020 at land north of St Martin's Gate, Worcester (NGR SO 85304 55000). This comprised four evaluation trenches. The project was commissioned by RPS Group on behalf of their client, in advance of a proposed redevelopment of the site. Planning permission has been granted subject to a programme of archaeological works (planning reference P09D0106).

The archaeological advisor to the local planning authority considered that the proposed development had the potential to impact upon possible heritage assets. Previous evaluation on the site has identified post-medieval and potentially medieval activity.

No brief was provided but following discussion between RPS Group and James Dinn, Worcester City Archaeologist, two phases of evaluation were proposed as an appropriate initial mitigation of the site. The first phase was undertaken in July 2015 (Lovett 2015) prior to the demolition of existing buildings. This report details the results of the second phase of evaluation, as well as the watching brief that was maintained during the demolition of the buildings. A WSI was prepared by Worcestershire Archaeology (WA 2019) and approved by James Dinn. The evaluation also conforms to the industry guidelines and standards set out by the Chartered Institute for Archaeologists in *Standard and guidance: for archaeological field evaluation* (ClfA 2014), *Standard and guidance: for an archaeological watching brief* (ClfA 2014) and *Guidelines for archaeological work in Worcester* (Worcester City Council 2016).

1.2 Site location, topography and geology

The site is located to the east of the centre of the historic city of Worcester (Fig 1). The site measures 2300m² and is bounded on the south by St Martin's Gate road, and to the east, north and west by commercial properties.

The site was until the start of this project a mix of tarmacked ground and brick-built former industrial buildings that were originally part of the Hill, Evans & Co. Vinegar Works. Their most recent use was as vehicle repair and carwash businesses, alongside public carparking space. These were demolished prior to the second stage of evaluation and the tarmac and concrete slabs had been lifted, so the site was a mix of wall footings and made ground.

The site is flat, at approximately 20.5 to 21m AOD. The underlying geology is recorded as Sidmouth Mudstone Formation – Mudstone overlain by superficial deposits of Alluvium – Clay, Silt, Sand and Gravel (BGS 2020).

2 Archaeological and historical background

The site is situated on the northern side of St Martins Gate, in a car park adjacent to a group of brick buildings. It is adjacent to a recent commercial development complex, St Martin's Gate, which was built on the former Lowesmoor Trading Estate, and included buildings associated with production of porcelain and vinegar. Various stages of archaeological fieldwork were undertaken in advance of, and during, the construction of this complex. This included desk-based assessment (Woodiwiss 2006), archaeological evaluation (Miller 2010) and several stages of excavation and watching brief for which post excavation analysis is ongoing (Dalwood and Hurst 2018). An assessment and updated project design of the archaeological works is presented in Dalwood and Hurst (2018) from which the background information below is derived.

Although prehistoric activity is known from elsewhere in Worcester, there is no evidence for prehistoric occupation within the development area. The line of a road linking Worcester with Droitwich (WCM 96405) ran to the north of the site. The surface of this road was uncovered and recorded at two locations during fieldwork associated with the St Martin's Gate development.

An archaeological evaluation undertaken by Birmingham Archaeology in 2002 (Cherrington and Cutler 2002) included a Trench (Trench 3) excavated within the site. The earliest features comprised elements of a brick built cellar in the form of a springer wall 3.6m in length and 1.7m in height. This comprised elements of brick-built footings upon which stood two courses of very large regularly cut stone blocks 2.7m long and 1m high. The stone blocks measured between 0.6 x 1.3m and 0.4 x 0.8m and were probably cut from Oolitic Limestone. The masonry had been pointed in places with cemented mortar. A steel support propped the central portion of the masonry.

An archaeological excavation of land immediately to the west of the site was undertaken in 2002, prior to the construction of a former car showroom (Dingwall and Ramsey 2002). Roman deposits were recorded at a depth of c 1.8m, and included pits and ditches (at least some with substantial quantities of pottery), together with evidence of iron smelting and smithing, structures, and environmental remains. The deposits were mainly dated to between the 1st and 3rd centuries AD and were sealed by a 'dark earth' layer.

Archaeological features of Roman date were also recorded in an excavation carried out by Worcestershire Archaeology ahead of the construction of an attenuation tank to the north-west of the site as part of the St Martin's Gate development.

The site is located outside the medieval city walls of Worcester, close to the St Martin's Gate entrance to the city in an area likely to have been used for industry in the medieval period (Dalwood and Hurst 2018). A brick and tile built structure 17m long was recorded by Worcestershire Archaeology in the attenuation tank excavation to the north-west of the site of the proposed development; it appears to have been part of a kiln complex, with successive phases of building and rebuilding.

Documentary evidence indicates that houses in this area were destroyed during the Civil War, at which time a bastion, depicted on contemporary and later maps, was constructed to defend the gate. A section of the ditch surrounding this bastion was exposed and recorded during the excavations of the attenuation tank to the north-west and the edges of the ditch were recorded during the 2002 excavation. The ditch turned sharply to the south within the attenuation tank excavation, and it is not thought likely to survive within the site.

The 1884 Ordnance Survey map shows the site as part of the complex of the Hill Evans Vinegar Works which was developed in this location from the 1840s with the major expansion of the site occurring in the 1860s. The works, at their peak, extended across 7 acres (Tyler 2015). The company closed in 1965 and the buildings across the wider complex housed small scale industry and commercial premises. The major part of the site was redeveloped from 2009-2012 as St Martins Quarter during which the major part of the works were demolished or preserved in situ. As stated above, these works were subject to various types and phases of archaeological mitigation for which post excavation analysis is ongoing.

The St Martins Quarter redevelopment did not include the buildings on the site referred to in this document and a granary standing to the north. These buildings were subject to historic building recording in 2015 (Tyler 2015). The buildings on the site were identified as acidifying sheds built between 1860 and 1876, a filtering shed built in 1904, stables built in 1885 and an infill block/passage built between 1890 and 1900.

Archaeological evaluation was undertaken as a first stage of mitigation associated with the current development in 2015 (Lovett 2015). A single trench (referred to as Trench 1 in this report) excavated in an open area to the west revealed a series of post-medieval layers, cut by a large ditch running north to south, and backfilled with demolition material. A brick surface and bedding layers were laid as the current ground surface, and were associated with the Vinegar Works, some buildings of which

remain on the site. The earliest deposit yielded fragments of glazed medieval floor tile, but was considered to be residual within a post-medieval context. Although the potential for medieval and Roman remains was considered likely on the site, none were identified. This is considered to be due to the depth of post-medieval activity, which extended to the full depth of the trench. The natural matrix was not identified at any point.

3 Project aims

Watching Brief

The aims of the watching brief were to record fabric, features and structures revealed during the watching brief to enhance the building record and further understand the former function of the buildings.

Evaluation

The aims and scope of the evaluation were to locate archaeological deposits and determine, if present, their extent, state of preservation, date, type, vulnerability and documentation.

It is considered that the project has the potential to address the following research aims identified in An outline resource assessment and research framework for the archaeology of Worcester:-

- RP 1.2 The character and development of the Frog Brook valley and stream
- RP 3.12 Roman activity in the Frog Brook valley
- RP 3.30 Documenting the extents of Roman Worcester
- RP 5.1 Medieval suburbs and defences
- RP 5.14 Industry and land-use patterns in the suburbs
- RP 5.30 Medieval ceramic industries
- RP 5.31 Other medieval industries
- RP7.6 Investigation of the Frog Brook – stratified cultural and alluvial deposits

4 Project methodology

A Written Scheme of Investigation (WSI) was prepared by Worcestershire Archaeology (WA 2019). A watching brief was conducted between 21st October and 27th November 2019, monitoring the demolition of the remaining buildings within the development site, and the excavation of four test pits to determine the extent of the footings of the demolished buildings. The record was primarily photographic, resulting from the health and safety concerns of the site at the time of demolition. The evaluation was undertaken between 8th and 16th January 2020. Following the evaluation a watching brief was maintained on the removal of the foundations of the buildings.

Four trenches, amounting to 136m² in area, were excavated over the 2300m² site, representing a sample of 6%. The location of the trenches is indicated in Figure 2.

The trenches were non-gridded and positioned to avoid the proposed pile cap locations and existing wall foundations, whilst allowing for appropriate coverage across the site.

Trench numbering began at 2, to incorporate the 2015 evaluation trench. Trench 5 had to be shortened by 2m at its north-eastern end due to site constraints.

Deposits considered not to be significant were removed under constant archaeological supervision using a 360° tracked excavator, employing a toothless bucket. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were

recorded according to standard Worcestershire Archaeology practice (WA 2012) and trench and feature locations were surveyed using a differential GPS with an accuracy limit set at <0.04m. On completion of excavation, trenches were reinstated by replacing the excavated material.

All fieldwork records were checked and cross-referenced. Analysis was undertaken through a combination of structural, artefactual and environmental evidence, allied to the information derived from other sources.

The project archive is currently held at the offices of Worcestershire Archaeology. Subject to the agreement of the landowner it is anticipated that it will be deposited at Worcester City Museum.

5 Archaeological results

5.1 Introduction

The features recorded in the trenches are shown in Figures 1-7 and Plates 1-15. The trench and context inventories are presented in Appendix 1.

5.2 Watching brief demolition phase, by Jesse Wheeler

A watching brief was conducted intermittently between 21st October and 27th November 2019, monitoring the demolition of the remaining buildings on the development site. These comprised a pair of single skinned brick built acidifying sheds (B1 and B2), built in two phases c.1860-65, and 1875, a filtering shed (C) built in 1904, last used in the present day as an automotive workshop with a first floor residence, stables (D) built in 1885, also part of the automotive workshop, and an infill block (E) dating to 1890-1900 used as an office. The designation of alphabetical values to these buildings is taken from the Historic Building Record by Ric Tyler, and is continued here. Tyler's report was made in 2015 and contained a detailed descriptive and photographic record of these buildings, as well as the granary (A) to the north.

A representative sample of the images taken during the demolition process are presented in plates 16 to 24. Throughout the observation of the demolition process, the structures revealed no new architectural aspects, and the results correlated completely with the previous report apart from within building B2 where a pair of half-ton Yale Model BB Spur Geared Block Manual Chain Hoists were fixed along one of the western roof joists, presumably relating to the industrial use of the building (Plate 23).

The foundations of the buildings that were removed on 17th and 20th January 2020, comprised brick stepped footings 0.64-1.04m bgs in 5 courses with a mid grey sandy mortar bonding material. These continued without variation around the entire footprint of the buildings. Under infill building E, a small single skinned brick vaulted cellar was observed, with large sandstone machine bases with iron fixings directly to its west (Plate 24). A photographic record was made of these from a distance, necessitated by the softness of the ground and the possibility of voids and collapse.

5.3 Watching brief test pits, by Jesse Wheeler

The investigations during the watching brief phase comprised four test pits; three against the northern wall of acidifying shed B1 (as referred to in the Historic Building Record, Ric Tyler), and one under the former toilet block between buildings B2 and D. The three test pits by B1 (each 1m²) had much in common, being sealed by a 0.2m thick layer of reinforced concrete (600, 700, 800), which overlaid a brick floor (604, 703, 803) that butted up against the wall of the acidifying shed and would have formed its flooring (Plate 14). These were machine made bricks laid in a stretcher bond, with no clear bonding material, and were the same size as those comprising the building wall. Below this flooring a layer of post-medieval occupation debris (601, 701, 801) was cut by, and then used as backfill around, the wall footing (603, 702, 802); this layer measured between 0.67-0.76m thick and contained moderate amounts of clinker ash and slag and fragmented brick and tile. At a depth of 1.1m in Trench 6 a compact mid greenish grey silty clay layer (602) was observed at the base of the wall footings.

This clay layer gave the impression of being gleyed but was not accessible for further inspection. It was not possible to attain this depth in test pits seven and eight due to the presence of a metal water pipe (704, 804) which ran through and between both test pits and prevented further investigation. However, the commonality between these test pits in all other aspects suggest that the same layers would have been encountered at the same depths.

Test pit 9 was located between buildings B1 and D and measured 1.5 x 2m (Plate 15). The reinforced concrete layer (900) seen in the other test pits was also present, but here it sealed a thin (0.06m) mixed concrete levelling layer (901) before a similar post-medieval layer (902) to that present in the other test pits (601, 701, 801). This was cut by a trench for a semi-circular brick structure (905), only the northern edge of which was exposed in this investigation, measuring 1.52m x 2m. The structure was formed by 8 courses of bricks, with the interior of the semi-circle being formed by stretcher bonded bricks and the exterior by headers, and was butted tight against the eastern wall (903) that adjoined building D to the south. The interior of the semicircle contained a concrete base (907) with the remains of rusted ironwork set into it. The cut [904] surrounding the brick structure had been backfilled with a dark grey clay silt (906).

5.4 Trench descriptions

Four trenches were excavated across the site, continuing the numbering sequence established in a previous phase of evaluation (Lovett 2015).

5.4.1 Trench 2

The natural stratum was observed in a machine-dug sondage at the southern end of the trench (Plate 5). Due to the depth of the sondage, all recording was done from out of the trench. It was encountered at c.18.40m AOD, and consisted of a mottled yellow orange clay. The upper few centimetres of it was quite weathered by exposure to the elements in the past. Overlying the natural strata was a greenish yellow clay layer c.0.45m deep. Cutting through this clay was small channel 240. This was seen in plan at the bottom of the sondage running north-west to south-east. It was filled with a blue grey clay, and was at least 0.6m deep. The clay did not have any observable organic material in it. The channel was c.2m wide, as seen in section (see Plate 5).

Overlying the channel and its fill was thick clay layer 238. This was c. 0.45m thick and represented continuing alluvial deposition, as also seen in the three other trenches.

Layer 203 was a heavily gleyed clay material of probable medieval date, observed at 19.90m AOD. Similar layers were observed elsewhere on the site (notably layer 306). It was cut by a large ditch (207/237), which ran east to west. It was only properly identified during the machining of the sondage, where it was observed to have three fills, the lowest of which was a plastic blue clay with lenses of dark brown humic material. It was not certain whether this was a result of dumped mixed material or due to vegetation colonising the ditch and rotting down in place. The feature was at least 1.4m deep and was not bottomed in the sondage. It was at least 3.7m wide, but again the full extent is not known, as it was not visible in plan to the north. The upper fill, 223 (same as 208 and 234), contained residual medieval pottery and late 15th century roof tile, with a *terminus post quem* (TPQ) of the mid-17th to 18th century.

Pit 222 was located on the southern edge of ditch 207, and was an unconvincing feature with vague edges, particularly on its northern side. Following the identification of ditch 207, it was considered that the pit was probably misinterpreted, and was likely to have been part of the fill of the ditch. The fill of the pit, 223, has been made equivalent to the upper fill (208) of ditch 207.

A small posthole (224) was excavated through the top of ditch 207. This was 0.34m across and 0.11m deep. It appeared in isolation, with no other postholes present in the trench. Overlying medieval layer 203 was a layer of silty clay that had an irregular interface with the underlying material, as if the medieval material might have been trampled and churned up. This layer was cut by small pit 205, which was only seen in section.

In the northern half of the trench was layer 241, which may still be the upper fill of ditch 207, but this was not possible to ascertain. The layer was a light brown grey clay, with many inclusions of CBM fragments, mortar flecks and animal bone. It was probably cut through by walls 229 and 221, though there is a possibility that this deposit built up against 229 and the construction horizon for that structure is below it. The animal bone recovered from this deposit was indicative of use in the tannery industry.

Wall 229 was constructed of red sandstone blocks, some roughly hewn, some semi-dressed, along with occasional patches of brick (Plate 3). It ran north to south in the northern half of the trench, with a westerly return at its southern end. This only extended for about 0.25m though, before ending. A rapid investigation of the end the wall was inconclusive in determining whether the wall was truncated at this point, but a thin stone "on edge" where the westerly return ended suggested that the structure was intentionally finished at this point. To the north, the wall was heavily disturbed by modern services, but was visible continuing underneath a metal gas pipe. The stones ranged in size from 200 x 150 x 80mm to 550 x 400 x 50mm, and were bonded with a mid whiteish grey mortar with white flecking. Some bricks were evident in the construction, but it is not known if they were from the original construction or related to structure 221 that abutted the sandstone wall on its eastern side. This comprised a truncated and disturbed area of red bricks, up to courses occasionally visible, and bedded with a grey white mortar. The bricks measured 230 x 120 x 60mm. The two structures were c.19.50m AOD.

Layer 244 covered brick structure 244, being a 0.16m thick blue grey silty clay. This in turn was overlain by 226, another silty clay layer. Above that was a thin remnant of either heavily disturbed brick structure on a bed or mortar, or the remains of a demolition layer comprising brick and mortar. It was truncated at both its northern and southern ends, leaving it only 0.1m thick and 1.8m long. It was cut through at the southern end by ditch 209 (Plate 4). This was aligned north-east to south-west across the trench, and was filled with dark grey black silty clay with frequent charcoal and pottery, as well as some lenses of mortar and CBM fragments, dating to the late 18th to 19th century. Upper fills were cleaner brown soils. It was 0.6m wide where it was hand excavated (it was oblique in the section, so a full width was not able to be accurately determined), and 0.7m deep. Layer 216 sealed the ditch, though this may have been the final fill of the feature; truncations by later features at the northern and southern ends of the deposit removed further relationships.

Layer 217 sat above 216, and was truncated by a small pit, 214. To the north a modern truncation containing large pieces of concrete removed the edge of ditch 209 and much layer 243. This in turn was truncated by another modern service cut 219. This large intrusion contained an inspection chamber and several service pipes, and appeared to cut through the made ground deposits associated with the construction of the vinegar works (202, 201 and 200), though the edges of this part of the trench were disturbed and unstable, so were not investigated thoroughly.

5.4.2 Trench 3

The natural stratum was reached only through augering, and was definitively reached at c. 18.38m AOD at the western end of the trench, though the material above this had the appearance of a weathered natural, similar to what was seen in the sondage in Trench 2. This was observed at around c.18.62m AOD.

A machine-dug sondage at the eastern end of the trench revealed a series of blue grey clay alluvial deposits (Plates 6 and 7). The base of these was reached via augering, and was at c.18.34m AOD, at which point weathered natural geology was encountered. The deposits in the sondage changed from blue grey in the lower reaches to gleyed light brown clays. There were six distinct deposits identified in the sondage (309-314), likely representing periodic inundations. This was in turn sealed by layer 308, a gleyed brown clay layer. Two more layers of similar composition (307 and 306) lay above, with pottery recovered from layer 306 dating to the 12th-14th century. It was encountered at around 19.40m AOD. 306 was truncated at the western end by pit 322 (Plate 8). This was a roughly oval pit that emerged from the southern edge of the trench, and was 2m in length, 1.32m wide and 0.48m deep. It

contained two plastic clay fills, both containing a quantity of brick and tile, and animal bone. The articulated mandible of a cow was resting in the bottom of the pit. The pottery dated the pit to late-17th to 18th century. A further gleyed clay layer (305) sealed this pit, which in turn was cut by linear features 316 and 318 (at approximately 19.73m AOD). Feature 316 was a steep sided, slightly concave-based ditch, filled with a plastic light brown clay. It measured 1.12m wide and 0.42m deep. This was similar in profile to ditch 318, though with a less concave base. It measured 0.86m wide and 0.44m deep. It was filled mainly by a single plastic clay deposit, with the upper 0.12m derived from the layer that sealed it (304). Both features dated to the late-17th to 18th century. Layer 304 was a mid reddish grey silty clay, and was noticeably less gleyed than the underlying deposits. It had a *TPQ* of the mid-18th century. This did not extend for the full length of the trench, ending some 6.2m from the eastern end, and levelling off the ground before a more consistent and flat garden soil (303) sealed underlying deposits across the length of the trench. This deposit was 0.46m thick and comprised a dark blackish grey clay silt, with frequent charcoal flecks, and moderate animal bone, along with pottery dating it to the 19th-20th century. Above this were three layers of made ground associated with the construction of the vinegar works.

5.4.3 Trench 4

A machine-dug sondage at the eastern end of the trench revealed the natural stratum at c.18.49m AOD (Plate 10). Above this was a blue grey alluvial clay, approximately 0.2m thick (425). It has very occasional thin lenses of dark grey humic material in it, though due to the depth of the excavation it was not possible to investigate this further. This was sealed by another alluvial layer, 424, some 0.5m thick, which in turn was sealed by a gleyed mid yellow brown layer, 423 (at c.19.63m AOD). This layer was cut through by at least six linear features, one of which was excavated (418). This was a small gully similar to those seen in Trench 3. It had a slight slope from north to south, and was flat bottomed, measuring 0.94m wide and 0.34m deep. There were further similar sized ditches seen at the western end of the trench during the initial opening, but groundwater inundation meant that it was not possible to subsequently locate these.

All of these ditches were sealed by layer 414, a grey silty clay with frequent charcoal flecks, 0.34m thick. This was in turn sealed by a thin layer of silty clay with frequent CBM fragments (413), then a dark grey brown silty clay (412), before garden soil 411 (similar to 303) lay across the length of the trench. This was truncated by two features, ditch 406 and pit 410. 406 was filled with broken brick and tile fragments, and ran across the width of the trench. It may have been a robbed-out wall footing related to activity prior to construction of the vinegar works. The pit had no obvious function and was filled with three distinct but uninformative deposits. Sealing these features and the garden soil were two made ground layers associated with the vinegar works construction.

5.4.4 Trench 5

The natural stratum was reached through augering at either end of the trench, c.18.34m AOD. Above that were three layers of alluvium similar to that seen in the other trenches, totalling approximately 0.85m in thickness. The upper alluvium, 535, was sealed by gleyed material 503 (c. 19.60m AOD), which was truncated by two linear features and three small pits. Of these features, one was excavated, 504, being a brick-lined culvert (Plate 13). The bricks (505) were red, measured 140 x 110 x 80mm, and were handmade. The small unexcavated pits (518, 520, 522) were filled with grey clay with frequent charcoal fragments, whilst the unexcavated ditch (516) ran parallel to the culvert. Based on the size of the brick, these are likely to date from at least the late 18th century (Laura Griffin pers comm).

These features were all sealed by layer 507, which was in turn sealed by layer 508. Both deposits had mortar flecks and CBM fragments in them. Two thin layers (511 and 512) of clay with mortar and brick fragments lay above 508. At the western end of the trench, a thin grey mortar layer, 529, seemed to represent the construction horizon of the terrace of early 19th century houses that existed on the southern edge of site prior to the construction of the vinegar works. Above this mortar spread was compacted clay layer 530. It had some mortar and CBM fragments within it, and seems to have been

a compacted surface. Brick surface 524 was present in the south-western corner of the trench (Plate 12). It had been heavily truncated by later activity, and probably cut through the compacted layer 530, though it is imagined that they were broadly contemporary. The southern edge of the surface had collapsed into itself, as a brick culvert ran underneath the surface at this point. The bricks were handmade, red and measured 240 x 110 x 70mm. There were a number of thin layers associated with the demolition of this structure sealing it (531-534) before a truncation event could be determined in the section (527). This was likely a scarping of the ground in preparation for the construction of the vinegar works, or at least the clearing of the site further than the earlier demolition event. Following this scarping, layer 528 was put down, followed by further made ground 502. This was cut through by pipe cut 513 and rubble-filled pit 510. These were probably sealed by made ground layers 501 and 500, though the relationship was not clear.

The upper 0.5-0.6m across the site was made ground associated with the construction of the vinegar works. Wall footings from the recently demolished buildings ran across the site, with some trenches located adjacent to them.

6 Artefactual evidence, by Laura Griffin

Recovery of artefacts was undertaken according to standard Worcestershire Archaeology practice (WA 2012). The project conforms to standards and guidance issued by the Chartered Institute for Archaeologists (CIfA 2014), as well as further guidance on pottery analysis, archive creation and museum deposition created by various pottery study groups (PCRG/SGRP/MPRG 2016), the Archaeological Archives Forum (AAF 2011), and the Society of Museum Archaeologists (SMA 1993).

6.1 Project aims

This assessment aimed to identify, sort, spot date, and quantify all artefacts and describe the range of artefacts present. The information has been used to provide a preliminary assessment of the significance of the artefacts.

6.2 Project methodology

6.2.1 Recovery policy

Artefacts were recovered according to standard Worcestershire Archaeology practice (WA 2012).

All artefacts collected in the field were recovered by hand.

6.2.2 Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. All information was recorded on a Microsoft Access 2016 database, with tables generated using Microsoft Excel.

The pottery was examined under x20 magnification and referenced as appropriate by fabric type and form according to the fabric reference series maintained by Worcestershire Archaeology (Hurst and Rees 1992; WAAS 2017; www.worcestershireceramics.org).

6.2.3 Discard policy

Artefacts from topsoil and subsoil and unstratified contexts will normally be noted but not retained, unless they are of intrinsic interest (e.g. worked flint or flint debitage, featured pottery sherds, and other potential 'registered artefacts'). Large assemblages of post-medieval or modern material, unless there is some special reason to retain (such as local production), may be noted and not retained, or, if appropriate, a representative sample will be retained. Discard of finds from post-medieval and earlier deposits will only be instituted with reference to museum collection policy and/or with agreement of the local museum.

6.3 Results

The assemblage totalled 102 finds weighing 11.60kg (see Table 1). The majority of material could be dated to the later medieval and post-medieval periods, but small amounts of Roman, medieval and modern material were also identified. Level of preservation was generally good, with finds displaying low-moderate levels of surface abrasion and notably high average pottery sherd weight of 25.4g.

period	material class	material subtype	object specific type	count	weight (g)
Roman	ceramic		pot	1	3
	slag	slag(Fe)		1	49
	slag	slag(Fe)	smelting slag(tap)	1	76
medieval	ceramic		pot	6	69
	ceramic		roof tile(flat)	4	300
	ceramic		ridge tile	1	137
	ceramic		roof tile	1	6
late medieval/early post-med	ceramic		roof tile(flat)	25	5463
	ceramic		brick	5	2514
post-medieval	ceramic		pot	25	548
	ceramic		brick	3	1443
	ceramic		cbm	3	95
	ceramic		pipe	13	65
modern	ceramic		pot	9	422
undated	?plaster			1	9
	stone	sandstone		1	387
	metal	iron	nail	2	17

Table 1: Quantification of site assemblage

Broad period	fabric code	Fabric common name	count	weight (g)
Roman	12.2	Oxidised organically tempered Severn Valley ware	1	3
medieval	55	Worcester-type sandy unglazed ware	1	10
	56	Malvernian unglazed ware	1	25
	64.1	Worcester-type sandy glazed ware	3	30
	69	Oxidized glazed Malvernian ware	1	4

post-medieval	75	North Devon gravel tempered ware	1	6
	78	Post-medieval red ware	11	277
	81	Stonewares	1	12
	81.5	White salt-glazed stoneware	1	2
	82	Tin-glazed ware	2	18
	89	Agate ware	3	27
	91	Post-medieval buff wares	7	208
modern	81.4	Miscellaneous late stoneware	1	305
	83.1	Worcester porcelain	2	16
	84	Creamware	4	26
	101	Miscellaneous modern wares	1	73

Table 2: Quantification of pottery by fabric type

6.3.1 Summary of artefacts by site phase

The results below provide a summary of the finds and of their associated location or contexts by site phase. Where possible, dates have been allocated, and the importance of individual finds commented upon as necessary.

Roman

All material of Roman date was residual, consisting of two pieces of iron slag (contexts 223 and 306) and a small sherd of pottery (context 317). The pottery was identified as being of mid 1st–2nd century oxidised organically tempered Severn Valley ware (fabric 12.2).

Medieval

Finds of medieval date consisted of six sherds of pottery and six fragments of roof tile. All pottery was of Worcester (fabrics 55 and 64.1) or Malvernian production (fabrics 56 and 69). No sherds were diagnostic, but fabrics indicated a combination of cooking pot and jug or pitcher forms of 12th–14th century date.

The roof tile consisted of five fragments of sandy Worcester fabric (fabrics 2a and 2b) and one of Malvernian production (fabric 3). Those of Worcester fabric included a ridge tile (context 303) and three flat examples, one nibbed and one pegged (context 320) and could be dated 13th–15th century. They may have been produced in close vicinity of the site, with a kiln of this date identified during earlier excavations at the adjacent St Martin's Quarter (pers observ). The overfired and warped appearance of the ridge tile would be consistent with it being a kiln site waster.

One layer (context 306) could be dated to the medieval period by the pottery retrieved.

Late medieval/early post-medieval

Material of this period consisted entirely of ceramic building material dated from the late 15th century onwards. This included 25 fragments of flat roof tile (contexts 210, 223, 305, 317 and 320) and five pieces of brick (contexts 223 and 320). All was residual.

All tile was identified as being Worcester fabric 2c. Tiles of this type have a distinctive fabric containing soft, pink inclusions and are known to have been produced in a number of kilns in the city from the late 15th century onwards, including at the adjacent St Martin's Quarter site (Hurst *et al.* 2018), nearby Sansome Street (Cornah *et al.* 2019) and 9–10 The Tything (Miller *et al.* 2004). A small number of fragments were nibbed (contexts 223, 305 and 317) and an unidentifiable partial stamp

was noted on one piece (context 305). A small number of fragments appeared overfired and/or warped, suggesting them to have been wasters from the nearby St Martin's Quarter kilns.

Bricks identified as of this period were handmade, roughly formed and measured between 2 and 2.25 inches thick, indicating a date of c.16th century, possibly earlier (Crawford 2015, 142).

Post-medieval

Finds of post-medieval date formed the bulk of the assemblage and consisted of pottery, clay pipe and brick. A total of five contexts (223, 304, 315, 317 and 320) could be dated to this period based on the finds recovered.

Pottery was largely domestic and consisted of a range of fabric types commonly associated with assemblages of the 17th and 18th centuries, including dark brown/black-glazed and slip decorated buff and red wares (fabrics 91 and 78), tin glazed ware (fabric 82), early stoneware (fabric 81), North Devon gravel-tempered ware (fabric 75) and Agate ware (fabric 89). This latter fabric is fairly uncommon on sites in Worcester, with only a small number of sherds previously identified from sites in the city (cf Jacobs 2015, 125).

Forms were largely domestic and included several slip-decorated baking dishes with flanged or pie-crust rims, mottled ware and early stoneware drinking vessels, a small number of dark brown/black-glazed jars and a possible chamber pot.

Thirteen fragments of clay pipe, including four bowls, were retrieved (contexts 210, 304, 315 and 320). The bowls, all from trench 3, could be dated to the mid-late 17th century (contexts 304 and 315) and from the mid-17th–18th century (context 320). One of these later bowls had the initials 'TC' stamped on the heel.

Brick of post-medieval date was largely fragmentary. The two largest fragments (contexts 210 and 320) were both 2.5 inches thick and neither were frogged, suggesting a 17th century date (Crawford 2015, 144). One of these bricks (context 320) was particularly distinctive, being of a similar sandy fabric to the Worcester-type tiles and for having crude vertical grooves in one face, possibly scored by fingers. It is unclear what purpose these grooves were intended to serve but their crude appearance would appear to rule out a decorative function and perhaps suggest them to be keying for plaster and therefore hidden.

Modern

Modern finds consisted entirely of pottery, primarily refined tablewares including sherds of creamware (fabric 84), Worcester porcelain (fabric 83.1) and white salt-glazed stoneware (fabric 81.5). Diagnostic sherds in these fabrics included a teapot spout with moulded decoration (fabric 84; context 210), plate and dish fragments (fabric 84; context 210), a small cup or jug handle (fabric 81.3; context 210) and the base of cup/tea bowl (fabric 83.1; context 210). This latter sherd was of particular interest as it had been modified at some point and turned into a miniature saucer with deliberately smoothed edges, presumably following breakage, suggesting the vessel to have been particularly important to the owner. The sherd is decorated with a small hand-painted flower in the centre of the upper surface and also has traces of the original external decoration on what would have been the exterior of the tea bowl. The underside of the base has the hatched crescent mark, indicating it to have been made during the earliest period of porcelain production in at the Warmstry House factory in Copenhagen Street between 1760 and 1783. Vessels with this mark are rare finds today and the clear re-use of this vessel would suggest it to have been highly prized by its owner and possibly equally rare in the past.

Remaining sherds of modern date were more functional and included the base of a large stoneware jar/bottle (fabric 81.4; context 303) and the base of a brown-glazed earthenware jar with cream slip banding (fabric 101, context 210).

context	material class	material subtype	object specific type	count	weight (g)	start date	end date	finds TPQ
210	ceramic		brick	2	255			L18-19C
	ceramic		pipe	3	6			
	ceramic		pot	1	104		18C	
	ceramic		pot	1	52	M17C	18C	
	ceramic		pot	2	22	M18C	L18C	
	ceramic		pot	1	2	E18C	L18C	
	ceramic		pot	1	4	17C	18C	
	ceramic		pot	2	16	M18C	L18C	
	ceramic		pot	4	26	M18C	L18C	
	ceramic		pot	3	27	M18C	L18C	
	ceramic		pot	2	77	M17C	18C	
	ceramic		pot	1	73	L18C	19C	
	ceramic		roof tile(flat)	1	51	L15C+		
	metal	iron	nail	1	9			
223	ceramic		brick	2	1376			M17-18C
	ceramic		pot	1	25	13C	14C	
	ceramic		pot	1	7	12C	14C	
	ceramic		pot	1	13	M17C	18C	
	ceramic		roof tile(flat)	3	1610	L15C+		
	slag	slag(Fe)	pot	1	49			
303	ceramic		pot	1	6	L16C	18C	19-20C
	ceramic		pot	1	305	19C	20C	
	ceramic		ridge tile	1	137	13C	15C	
304	ceramic		pipe	2	18	M17C	L17C	M18C
	ceramic		pot	1	12	M18C		
	ceramic		pot	1	14	17C	18C	
	ceramic		pot	1	9	E18C		
	ceramic		pot	1	45	L17C	18C	
305	ceramic		roof tile(flat)	2	279	L15C+		L15C+
306	ceramic		cbm	1	6			12-14C
	ceramic		pot	2	23	12C	14C	
	slag	slag(Fe)	smelting slag(tap)	1	76			
315	ceramic		cbm	3	95			L17-18C
	ceramic		pipe	3	13	M17C		
	ceramic		pot	1	1	L17C	18C	
	ceramic		pot	1	2	M17C	18C	
317	ceramic		pot	1	3	M1C	2C	L17-18C
	ceramic		pot	1	5	M17C	18C	
	ceramic		pot	3	77	L17C	18C	

	ceramic		roof tile(flat)	3	234	L15C+		
320	?plaster			1	9			L17-18C
	ceramic		brick	4	2326			
	ceramic		pipe	5	28	L17C	18C	
	ceramic		pot	1	10	L11C	M14C	
	ceramic		pot	1	4	13C	15C	
	ceramic		pot	3	78	L17C	18C	
	ceramic		roof tile(flat)	3	285	13C	15C	
	ceramic		roof tile(flat)	1	15	13C	16C	
	ceramic		roof tile(flat)	16	3289	L15C+		
	metal	iron	nail	1	8			
	stone	sandstone		1	387			

Table 3: Finds dating by context

6.4 Discussion

The finds assemblage is consistent in both range of artefacts and date, with that retrieved from earlier excavations on the adjacent St Martin's Quarter site. The physical location of the evaluation trenches has enabled the investigation and analysis of the finds from an area of the site which wasn't included in this earlier project and is, therefore, usefully contributing to our overall understanding of this part of Worcester.

The Lowesmoor/St Martin's Gate area of Worcester was made up of a mixture of residential housing and industrial workshops, and this is reflected in the range of finds retrieved with domestic pottery found alongside waster material from the nearby tile kilns.

6.5 Recommendations

This material and that from any further fieldwork from this site would benefit from being fully analysed and a more detailed report produced, viewing the material alongside that from the St Martin's Quarter excavations and Worcester as a whole.

7 Environmental evidence, by Elizabeth Pearson

7.1 Introduction

Environmental sampling was undertaken according to standard Worcestershire Archaeology practice (WA 2012).

The environmental project conforms to guidance by ClfA (2014) on archaeological evaluation, further guidance by English Heritage (2011) and the Association for Environmental Archaeology (1995).

7.2 Methodology

7.2.1 Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (2012). A single sample (of 20 litres) was taken from the lower fill of a medieval to post-medieval ditch (Table 4).

7.2.2 Processing and analysis

The sample was processed by flotation using a Siraf tank. The flot was collected on a 300µm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residue was scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammer scale. The flot was scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by Worcestershire Archaeology, and a seed identification manual (Cappers *et al* 2012). Nomenclature for the plant remains follows Stace (2010).

Animal bone was quantified according to weight (g) and count and tabulated by context (Table 5). Comments are made on selected bones with the aid of modern bone reference collections housed at the Worcestershire Archaeology offices and identification guides (Schmid 1972 and Hillson 1992).

context	sample	Short description	Position of fill	Provisional date	Volume (L)	volume processed (L)	residue assessed	flot assessed
236	1	Fill of ditch 237	Lower	Medieval to post-medieval	20	20	Yes	Yes

Table 4: List of bulk samples

7.2.3 Discard policy

Remaining soil sample and residues (post scanning) will be discarded after a period of three months following submission of this report unless there is a specific request to retain them.

7.3 Results

7.3.1 Animal bone

A total of 3.3 kg (133 fragments) of animal bone was hand-collected during excavation. Most of this assemblage was well-preserved.

Medieval

A small number of sheep/goat metapodials and a large cattle horncore were noted in layer (305), a land reclamation deposit.

Undated

In layer (241), through which walls 221 and 229 may be cut, the assemblage was similar to (305) above, being made up of sheep/goat metapodials and a single large cattle horncore. A large horse lower mandible, complete with teeth, and loose horse teeth, were recovered from fill (321) of pit 322. A single bird bone was noted in fill (317) of ditch [318].

context	Count	Weight (g)	Feature type	Context description	Provisional date
210	2	31	Ditch	Ditch fill	Uncertain/Not known
210	23	299	Ditch	Ditch fill	Uncertain/Not known
223	1	21	Ditch	Initially thought to be fill of pit 222, now fill of ditch 207	Uncertain/Not known
241	9	692		Layer through which walls 221 and 229 may be cut	
305	5	429	Layer	Land reclamation deposit	Medieval
315	3	17	Ditch	Fill of ditch 316	Uncertain/Not known
317	3	8	Ditch	Fill of ditch 318	Uncertain/Not known
321	87	1773	Pit	Fill of pit 322	Uncertain/Not known
Totals	133	3271			

Table 5: Hand-collected animal bone

7.3.2 Charred plant and macrofossils and charcoal

The results are summarised in Tables 6 and 7.

Medieval to post-medieval period

Waterlogged plant remains from the fill (236) of ditch 237 were well preserved, consisting of seeds of plants which are weeds of cornfields, such as corn marigold (*Glebionis segetum*), or cultivated ground generally (knotgrass: *Polygonum aviculare*). Some may derive either from cultivated land or grassland, such as prickly and smooth sow-thistles (*Sonchus asper* and *S. oleraceus* respectively).

There is also some evidence of wetland habitat, in the form of alder fruits (*Alnus glutinosa*), celery-leaved buttercup (*Ranunculus scleratus*), and sedges (*Carex* sp). Of note, is the presence of the herb hyssop (*Hyssopus officinalis*), which may be an escape from cultivation.

context	sample	large mammal	charcoal	waterlogged plant	artefacts
236	1	occ	occ	abt	occ coal/clinker, cbm, worked shale (??)

Table 6: Summary of environmental remains; occ = occasional, mod = moderate, abt = abundant, * = probably modern and intrusive, ** = oyster shell/fragments/burnt bone

site code	context	sample	preservation type	species detail	category remains	quantity/diversity
P5450	236	1	wa	<i>Ranunculus acris/repens/bulbosus</i> , <i>Ranunculus sceleratus</i> , <i>Alnus glutinosa</i> (fruits), <i>Polygonum aviculare</i> , <i>Chenopodium album</i> , <i>Hyssopus officinalis</i> , <i>Sonchus oleraceus</i> , <i>Sonchus asper</i> , <i>Glebionis segetum</i> , <i>Anthriscus sylvestris</i> , <i>Carex</i> sp (2-sided) nutlets, <i>Carex</i> sp (3-sided) nutlets	seed	+++/medium

Table 7: Plant remains from bulk samples

Key:

preservation	quantity
wa = waterlogged	+ = 1 - 10
	++ = 11- 50
	+++ = 51 - 100
	++++ = 101+

7.4 Discussion

The waterlogged plant remains from ditch 237 show the potential for recovering well-preserved waterlogged plant remains which have the potential to contribute towards interpretation of the medieval to post-medieval meadow landscape. There is a possibility that the ditch is Civil War in date.

Plant macrofossil, pollen and fungal spore remains from the Civil War ditch excavated during the Silver Street South (Attenuation Tank) phase of St Martin's Quarter (Dalwood and Hurst 2018) provide information on the immediate environment of the ditch, indicating a similar environment to that recorded at St Martin's. Of interest, at the Attenuation Tank site, fungal spores included genera (*Alternaria* sp) which is 'a major plant pathogen causing blight, lesions and canker on a wide variety of species, including potatoes, carrots, wheat and tomatoes' (Dalwood and Hurst 2018). *Ustilago* species, which were present, are smut fungi parasitic to grasses (both wild and cultivated) but may have infected stored hay or cereals on the site. These results show the potential for environmental remains to reflect economic activity in the vicinity of waterlogged deposits in the Lowesmoor area.

The animal bone is likely to be waste from tanning or hornworking industry, particularly as a tannery is shown on Young's map of 1779. Considering the industrial character of the area, bone waste of this nature may have had further use in glue making, tallow extraction and production of bone ash for the porcelain industry.

Overall, as the site was fringed by urban and industrial settlement, well-preserved debris relating to urban and industrial activity may be present, owing to the waterlogged conditions.

7.5 Significance

The waterlogged organic deposits of medieval to post-medieval date are of local significance in providing environmental information on the surrounding environment, and because they have

potential to contain waterlogged waste associated with economic activity associated with urban and industrial activity.

8 Discussion

The alluvial deposition seen under the medieval layers in all of the trenches illustrate the early landscape of the area. The name Lowesmoor has its root in 'mere', and the marshland defined the eastern limits of the medieval city (Pat Hughes, pers comm). This land may be part of 'Aeglordes marsh', as mentioned in an eleventh century Anglo-Saxon Charter (Pat Hughes, pers comm).

The area is known as the Frog Brook Valley, but the course of the brook is poorly understood. Indeed, there is no evidence for a brook to run across Lowesmoor at all; recent research suggest that streams were flowing down from Perry Wood and the appropriately named Spring Hill to the east, before being diverted into drainage channels to clean the town ditch, and power the mill to the south of the cathedral on Severn Street (Pat Hughes, pers comm). Such channels were identified in the land immediately surrounding the site during excavations in the early 2010s (Dalwood and Hurst 2018) but these were recognised as being intentionally dug ditches rather than canalisation of natural channels.

The channel that was revealed at the bottom of the sondage in Trench 2 was probably naturally derived, being as it was filled with a clean alluvial clay and buried beneath a thick deposit of similar material. However, excavations for an attenuation tank to the west of the site revealed a number of Roman ditches running eastwards to the north of the site, and those were interpreted as potential drainage ditches. It is possible that this feature was dug as a drainage channel into the marshland, and has subsequently filled up with alluvium as the area has been inundated. Other than this, only a small amount of residual Roman pottery was recovered from the site, suggesting that the landscape at the time was not a viable proposition for exploitation.

The material above the alluvial deposits became increasingly less gleyed. A reddish brown clay layer of probably 12th-14th century date seemed to represent an end to the alluviation, suggesting an intentional attempt to reclaim the land, or at least to drain it. This was certainly the case in the 17th-18th century, when a number of small ditches were dug across the site, channelling water down slope to the south. This must have had the desired effect, as the overlying agricultural soil was not gleyed at all.

A large ditch was identified during the excavation of the sondage in Trench 2. This was dated to the mid-17th -18th century, though it contained several residual artefacts from the medieval period. It was at least 1.4m deep and 3.7m wide, but could be much greater in extent. From its size and dating, it is possible that it formed part of the defences of the city during the Civil War. Whilst the main circuit of the defensive ditch is fairly well understood, especially in this part of the city, further bastions close to weak points such as gateways are possible. The excavations at the Hive to the north-east demonstrated that earthworks associated with the defence of the city could be ephemeral and many will not have been located on maps of the time (Bradley *et al*, 2018).

The stone structure in Trench 2 aligns well with a building represented on Young's 1779 map of Worcester. This would suggest that the ditch identified in Trench 1 (Lovett 2015) represents the eastern boundary of the building plot. The bone assemblage recovered from the deposits around the wall is indicative of tannery work, and a tannery was known to have existed on the land immediately to the west in the late 19th century. It is possible that that industry had an earlier presence in the vicinity. It also has implications for the locations of any possible water courses flowing through the site.

The yard surface and brick culvert in Trench 5 were likely remnants of the small terrace of houses that were built along what was Clapgate before the road was repositioned and became St Martin's Gate. These buildings had appeared by the 1808 Roper map but were demolished between 1840 and 1870, to make way for the Vinegar Works.

9 Significance

The results of the evaluation have the potential to inform some research priorities as outlined in the Research Framework for Worcester (WCC 2007).

- RP 1.2 The character and development of the Frog Brook valley and stream
- RP7.6 Investigation of the Frog Brook – stratified cultural and alluvial deposits
- RP 3.12 Roman activity in the Frog Brook valley
- RP6.11 Gloves and leather industries
- RP6.14 Analysis of the city defences in the post- medieval period

The results of the trenching demonstrate that the landscape was prone to heavy inundation of alluvium over a prolonged period of time. No definite channels for water courses were identified, though one potential channel was present in Trench 2. No significant organic material was observed, despite conditions for preservation being good. Further work may help to define the hydrological nature of the landscape, as well as more accurately defining the phases of reclamation and subsequent development. This would likely be of local significance.

No definitive evidence for Roman activity was identified, suggesting the landscape was not fit for exploitation. As such, any activity of this date is likely to be of local significance, and would help to characterise the area and define the extent of the marshland in this period.

The presence of a potential tannery on the western edge of the site would help to illustrate the later development of the site, and would be of local significance.

The presence of a potential Civil War defensive ditch beyond the known circuit would be of regional significance. The environmental evidence from this feature also identifies the potential for waterlogged remains to survive.

10 Conclusions

Four trenches and four test pits were excavated across the site as this phase of evaluation. A previous trench had been excavated in 2015. Undisturbed natural substrate was only reached by machine-dug sondages or via augering. A thick band of alluvium lay over the natural ground, which could be broadly divided into three layers. A paleochannel or possible ditch was observed at the bottom of this sequence, and was itself filled by clean sterile alluvium. This was sealed by a gleyed medieval soil layer dating to 12th-14th century. A large ditch that may relate to the city defences during the Civil War was observed in Trench 2; it contained pottery of mid-17th-18th century date. Elsewhere the medieval layer was cut by a number of small drainage channels, running roughly north to south. These were backfilled in the 17th-18th century.

A red sandstone and brick wall was revealed in Trench 2, which correlates well with a building on Young's 1779 map of Worcester, and around which were recovered a number of animal bones indicative of tanning.

By the nineteenth century most of the area had dried out and was under agricultural use. A remnant of an early 19th century terrace was revealed in the form of a heavily truncated brick yard surface.

The methods adopted allow a high degree of confidence that the aims of the project have been achieved. Conditions were suitable in all of the trenches to identify the presence or absence of archaeological features. It is considered that the nature, density and distribution of archaeological features provides an accurate characterisation of the development site as a whole.

11 Project personnel

The evaluation was led by Peter Lovett, ACIfA, assisted by Beth Williams PCIfA, Elspeth Iliff PCIfA, and Jesse Wheeler ACIfA. The watching brief was led by Jesse Wheeler, ACIfA.

The project was managed by Tom Rogers, MCIfA. The report was produced and collated by Peter Lovett. Specialist contributions and individual sections of the report are attributed to the relevant authors throughout the text.

12 Acknowledgements

Worcestershire Archaeology would like to thank the following for the successful conclusion of the project: Chris Clarke (Consultant, RPS) for commissioning the work, and Ian Rodger (Contracts Manager, HCD Ltd) for their help on site. The project was monitored by James Dinn (Archaeological Officer, Worcester City Council) and Worcestershire Archaeology would also like to thank them for their advice.

Special thanks go to Pat Hughes for sharing her work on the origins of the Frog Brook.

13 Bibliography

AAF, 2011 *Archaeological archives: a guide to the best practice in the creation, compilation, transfer and curation*. Archaeological Archives Forum

Association for Environmental Archaeology, 1995 *Environmental archaeology and archaeological evaluations: recommendations concerning the environmental component of archaeological evaluations in England*. Working Papers of the Association for Environmental Archaeology 2

BGS, 2020 Geology of Britain viewer. Available: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
Accessed: 4 February 2020

Bradley, R, Evans, C J, Pearson, E, Richer, S, and Sworn, S, 2018 *Excavation at the site of The Hive, The Butts, Worcester*, Worcestershire Archive and Archaeology Service Research Report no. 10

Cappers, T R J, Bekker, R M, & Jans, J E A, 2012 *Digitale Zadenatlas van Nederland: Digital seed atlas of the Netherlands*. Groningen Archaeological Studies, 4, Barkhuis Publishing and Groningen University Library: Groningen

ClfA, 2014 *Standard and guidance: for archaeological field evaluation*. Reading: Chartered Institute for Archaeologists

ClfA, 2014 *Standard and guidance: for collection, documentation, conservation and research of archaeological materials*. Reading: Chartered Institute for Archaeologists

Cherrington, R H, and Cuttler, R, 2002 *An archaeological evaluation at Lowesmoor Trading Estate, Worcester 2002*, University of Birmingham, Birmingham University Field Archaeology Unit, project 963

Cornah, T 2019 *Archaeological watching brief at the former Toby Tavern site, 9, Sansome Street, Worcester*, Worcestershire Archaeology report **2633**

Crawford, A 2015 Ceramic building material: bricks, in P Davenport (ed), *Excavations at Newport Street, Worcester, 2005. Roman Roadside Activity and Medieval to Post-Medieval Urban Development on the Severn Floodplain*, Cotswold Archaeology Monograph 4 with Worcestershire Archaeology, 140-145

Dalwood, H, and Hurst, D, 2018 *Assessment and updated Project Design for a programme of archaeological mitigation at St Martin's Quarter, Worcester (omitting 'Unit 1')*, unpublished Worcestershire Archaeology report

Dingwall, L, and Ramsey, E, 2011 Archaeological fieldwork at St Martin's Gate, in S Butler and R Cuttler (eds) *Life and Industry in the suburbs of Roman Worcester*. *Birmingham Archaeology Monogr Ser 8/British Archaeol Rep* (Brit Ser) 533, 8-26

English Heritage, 2011 Environmental archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation. English Heritage, Centre for Archaeology Guidelines

Hillson, S, 1992 *Mammal bones and teeth: an introductory guide to methods of identification*. London: The Institute of Archaeology, University College London

Hurst, D and Dalwood, H, 2018 *Assessment and updated project design for a programme of archaeological mitigation at St Martin's Quarter, Worcester*, Worcestershire Archaeology **P3310**

Hurst, J D, & Rees, H, 1992 Pottery fabrics; a multi-period series for the County of Hereford and Worcester, in S G Woodiwiss (ed), *Iron Age and Roman salt production and the medieval town of Droitwich*. York: CBA Research Report **81**, 200–209

Jacobs, A J, 2015 Post-medieval pottery, in P Davenport (ed), *Excavations at Newport Street, Worcester, 2005. Roman Roadside Activity and Medieval to Post-Medieval Urban Development on the Severn Floodplain*, Cotswold Archaeology Monograph **4** with Worcestershire Archaeology, 121-130

Lovett, P, 2015 *An archaeological evaluation at St Martin's Gate, Worcester, Worcestershire*, Worcestershire Archaeology, internal report, **2247**

Miller, D, Griffin, L and Pearson, E, 2004 *Programme of Archaeological Work at 9-10 The Tything, Worcester*, Worcestershire Historic Environment and Archaeology Service, internal report, 1150

Miller, D, 2010 *Archaeological evaluation (fieldwork stage 1) of the Lowesmoor Trading Estate, Worcester*, Historic Environment and Archaeology Service, Worcestershire County Council, report 1723 (revised report dated 11th March 2010)

PCRG/SGRP/MPRG, 2016 *A standard for pottery studies in archaeology*. Prehistoric Ceramics Research Group, Study Group for Roman Pottery, Medieval Pottery Research Group

SMA, 1993 *Selection, retention and dispersal of archaeological collections*. Society of Museum Archaeologists

Schmid, E, 1972 *Atlas of animal bones for prehistorians, archaeologists and Quaternary geologists*. Amsterdam, London & New York: Elsevier

Stace, C, 2010 *New flora of the British Isles* (3rd edition). Cambridge: Cambridge University Press

Tyler, R 2015 *Former Hill and Evans Vinegar Works, St Martin's Gate, Lowesmoor, Worcester*; Historic Building Record. Project No: 2015_009

WA, 2012 Manual of service practice, recording manual, Worcestershire Archaeology Unpubl report **1842**. Worcestershire County Council

WA, 2019 Written Scheme of Investigation for an archaeological watching brief and evaluation at land off St Martin's Gate, Worcestershire Archaeology Unpubl document dated 25 November 2019. Worcestershire County Council

WAAS 2017 *Worcestershire Ceramics Online Database*. Available: <https://www.worcestershireceramics.org/> Accessed: 26/11/2019

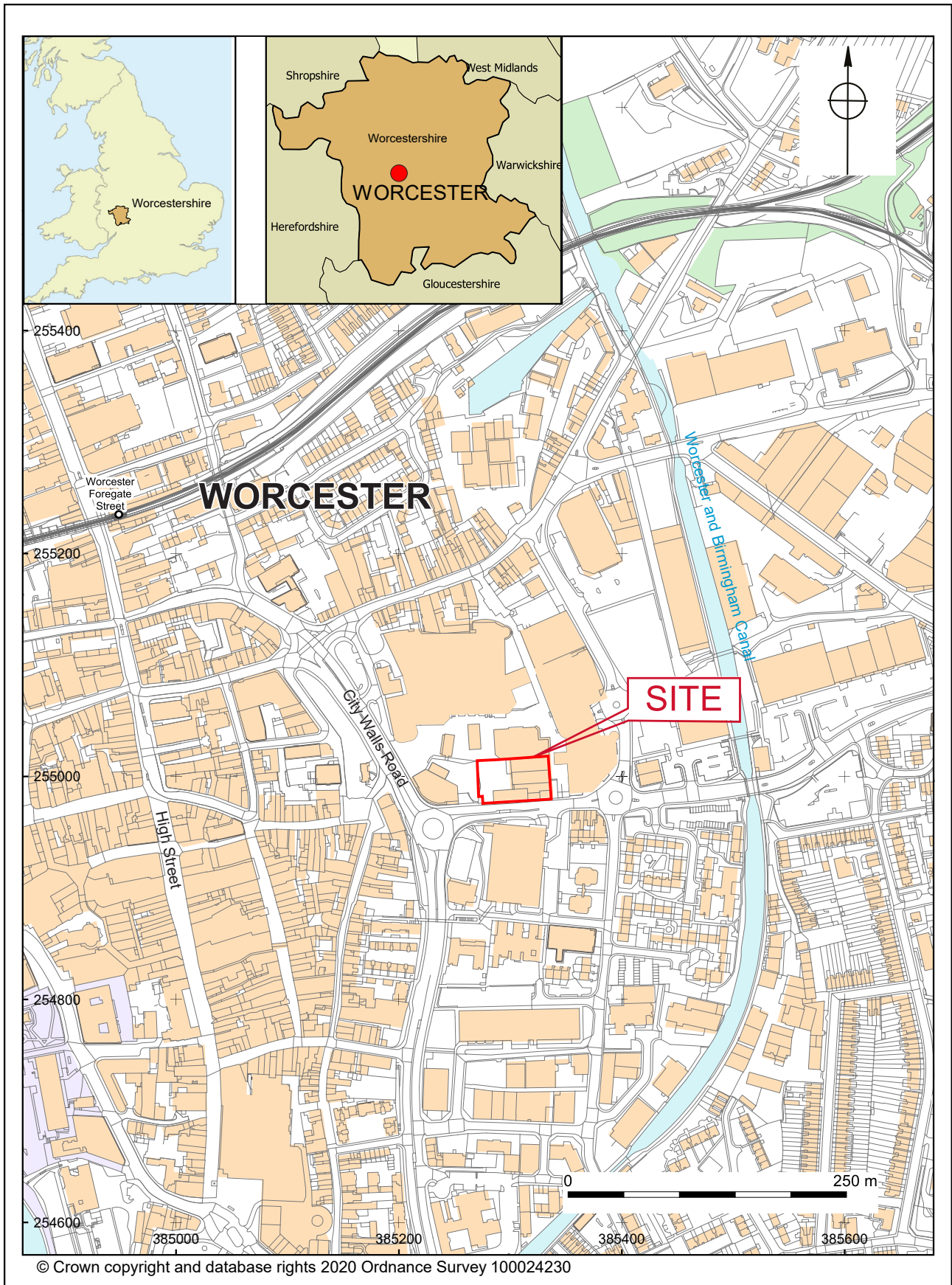
Wcc 2007 *An outline resource assessment and research framework for the archaeology of Worcester*. Worcester City Council, dated September 2007

Woodiwiss, S, 2006 *Desk-based assessment at Lowesmoor Trading Estate, Worcester*, Historic Environment and Archaeology Service, Worcestershire County Council, report **1492**

Worcester City Council 2007 *Archaeology and the Historic Environment*, Supplementary Planning Document, Local Development Framework. Worcester City Council

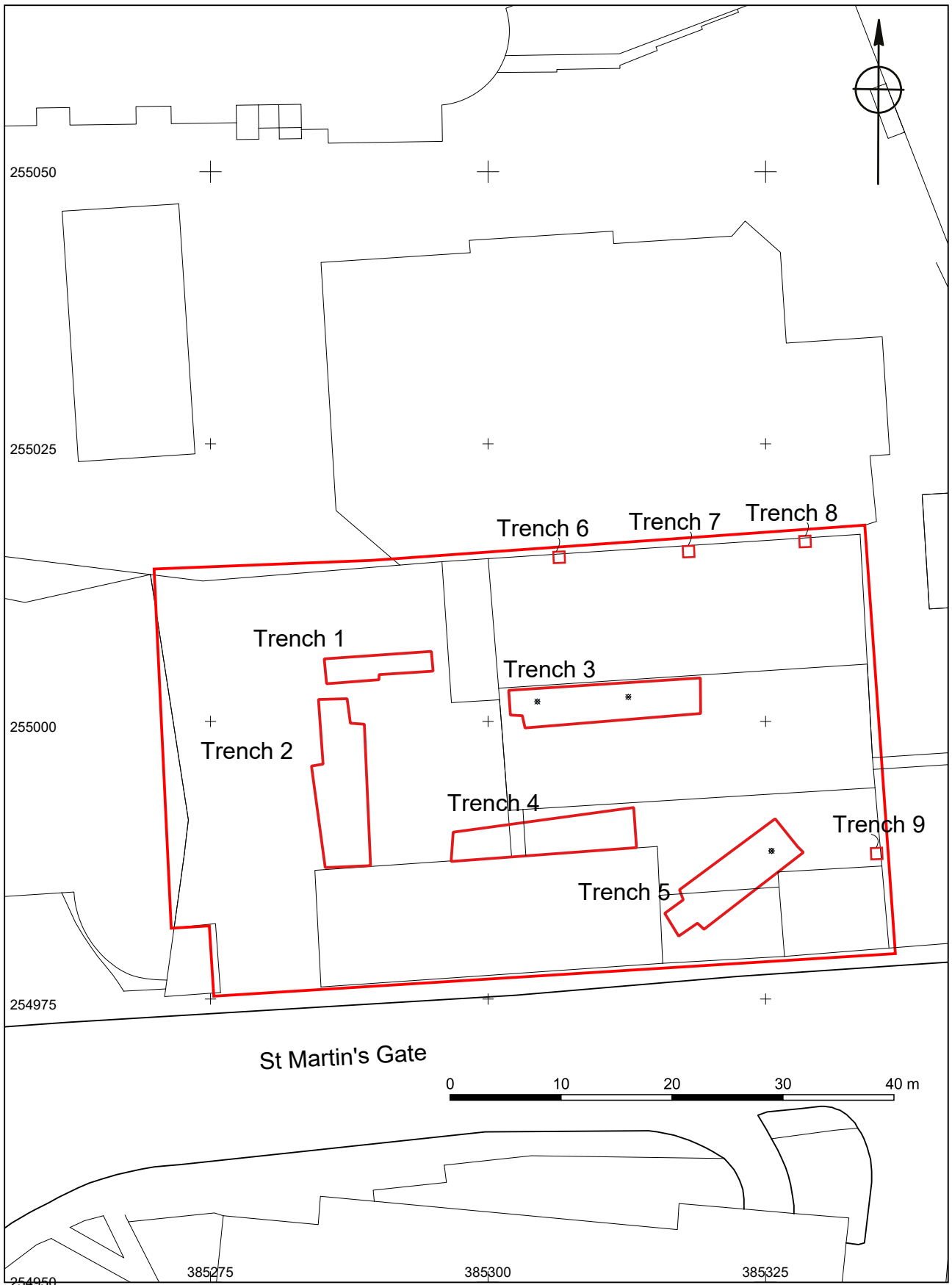
Worcester City Council 2016 *Guidelines for archaeological work in Worcester*. Worcester City Council

Figures



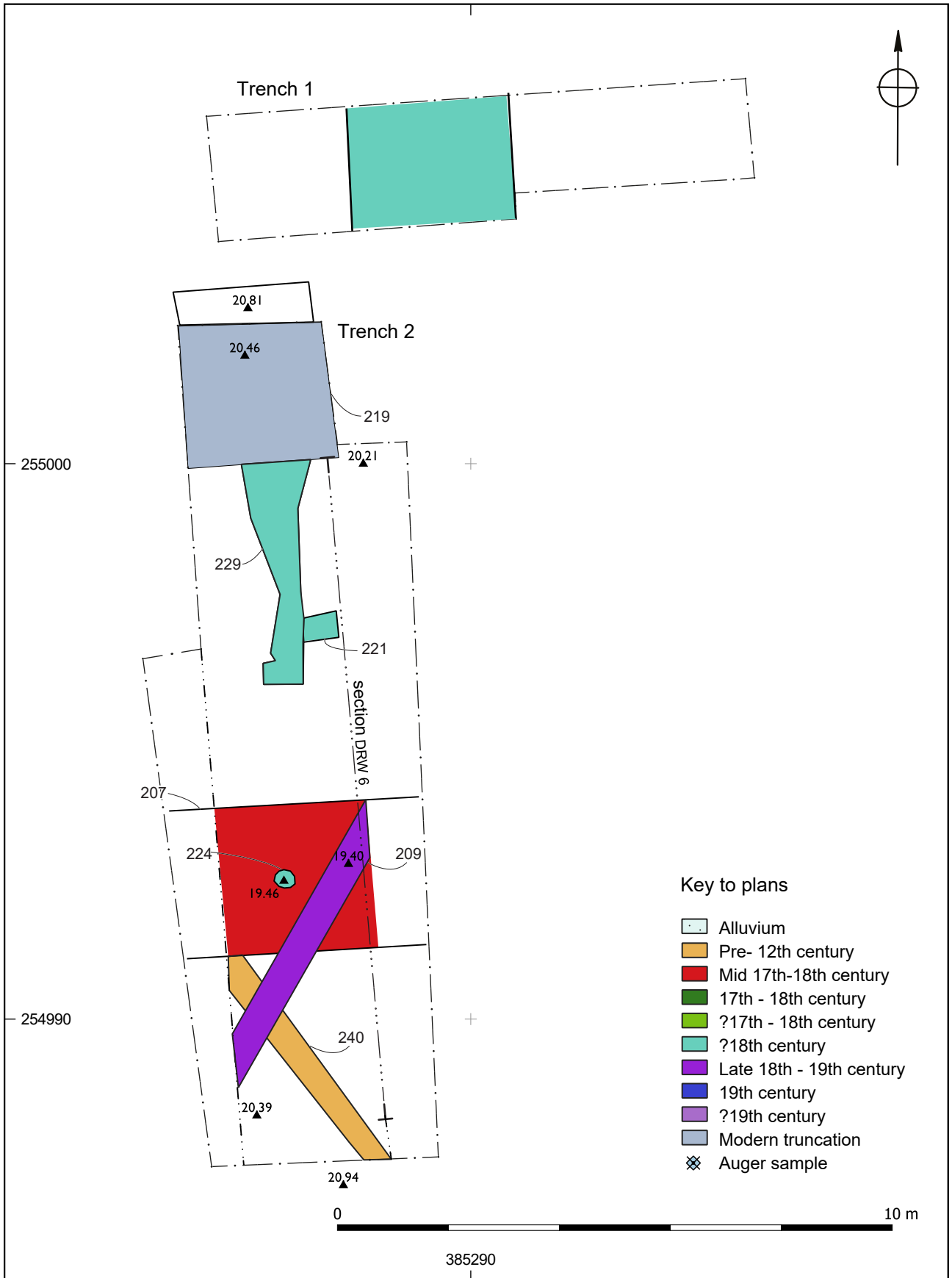
Location of the site

Figure 1



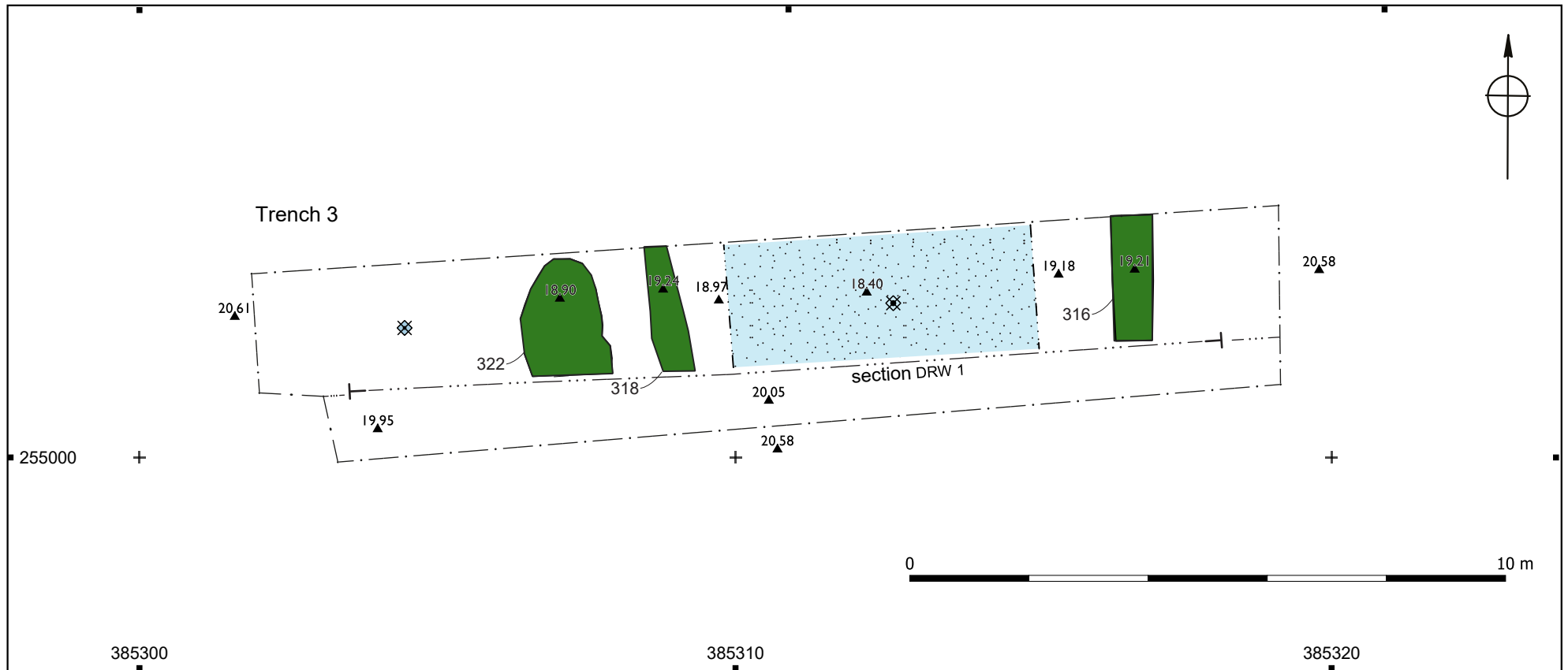
Trench locations

Figure 2



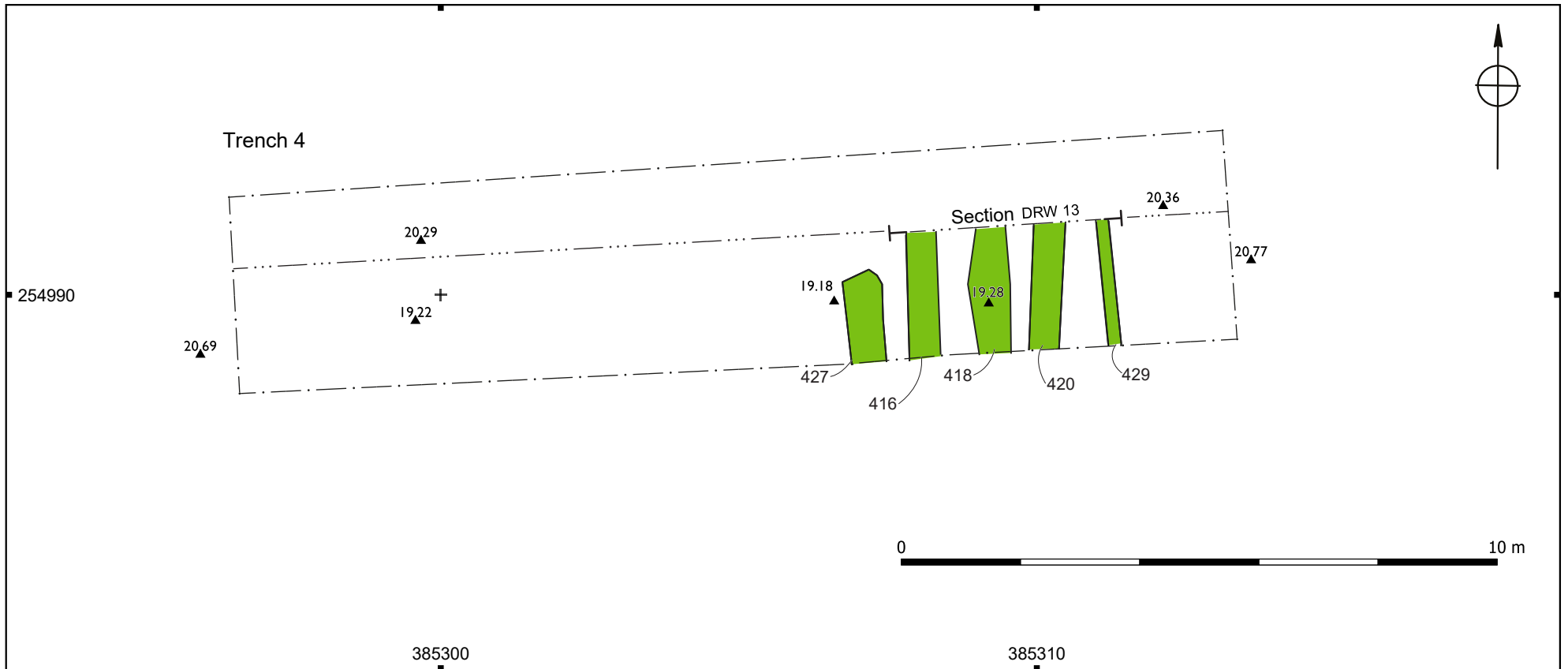
Trench 1 and Trench 2, Archaeological features

Figure 3



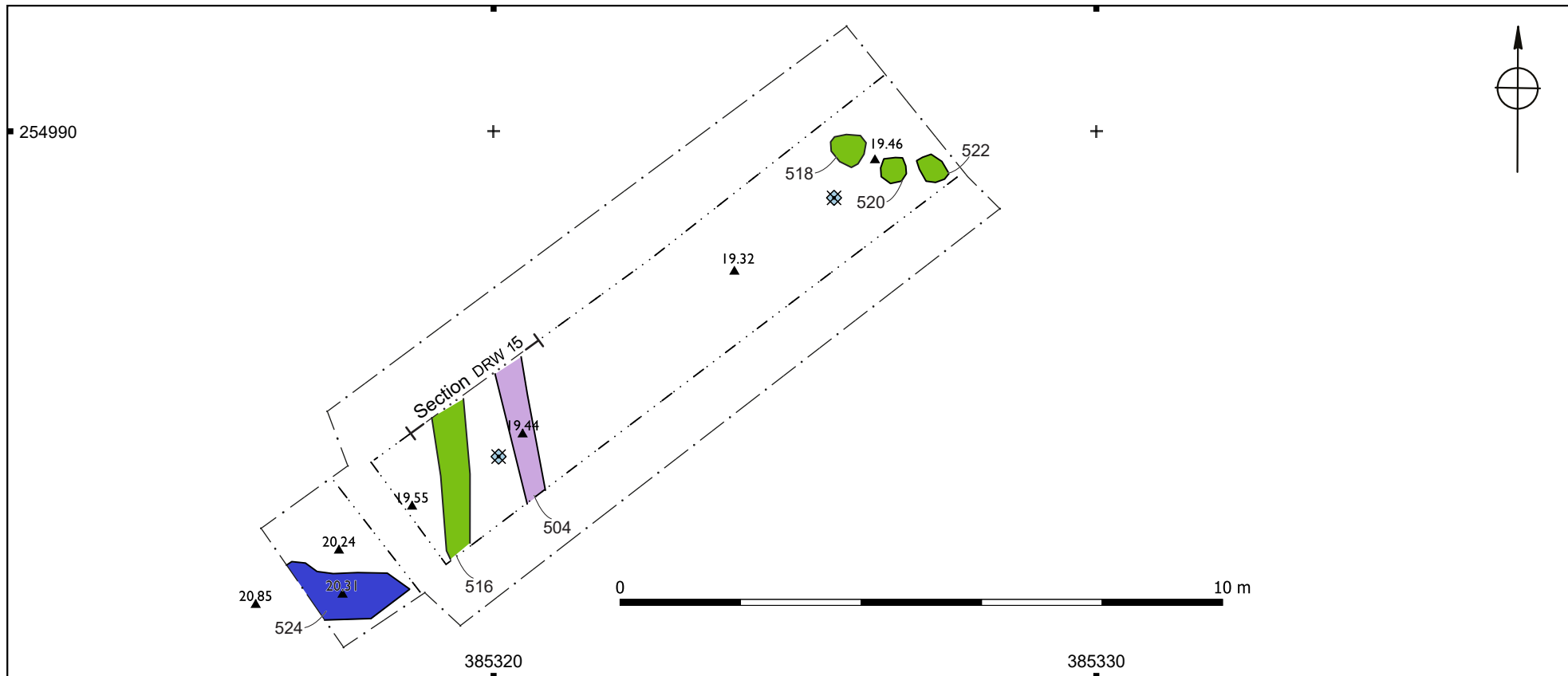
Trench 3, Archaeological features

Figure 4



Trench 4, Archaeological features

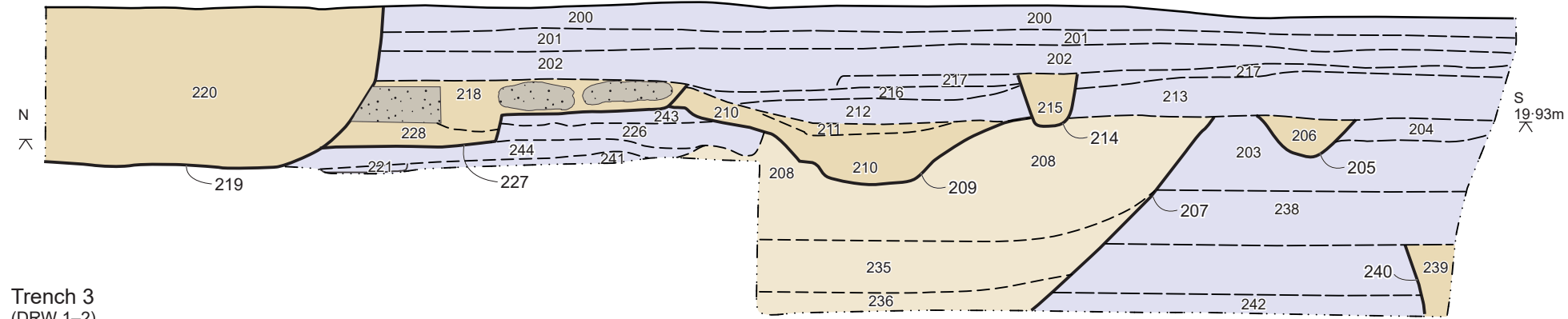
Figure 5



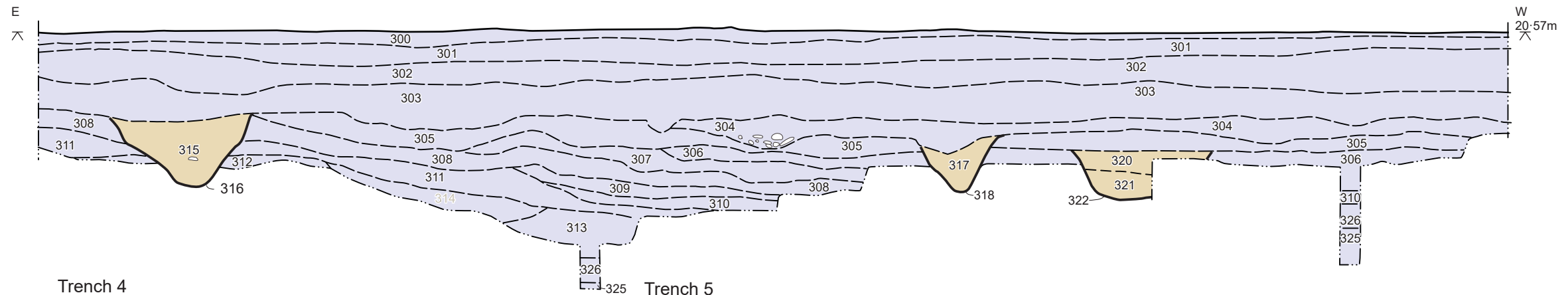
Trench 5, Archaeological features

Figure 6

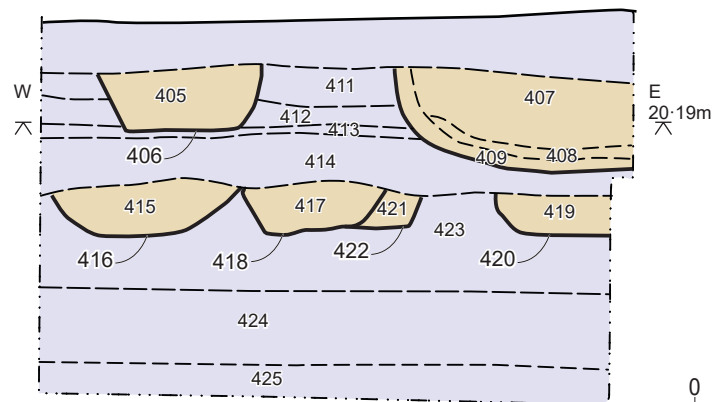
Trench 2
(DRW 6-7)



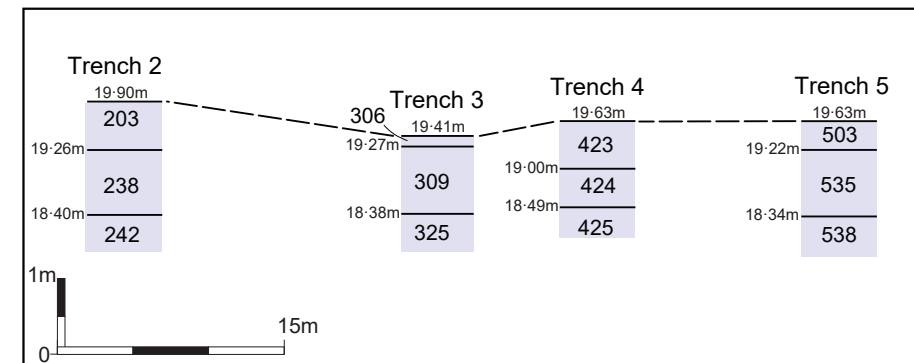
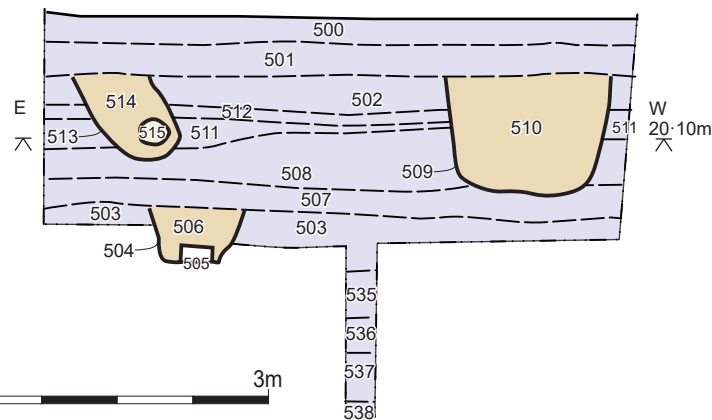
Trench 3
(DRW 1-2)



Trench 4
(DRW 13)



Trench 5
(DRW 15)



Sections of trenches and heights of specific deposits across the site

Figure 7



Trenches 1 and 2 features in relation to the Young 1779 map of Worester

Figure 8

Plates



Plate 1 General view of the site, looking south



Plate 2 Trench 2, looking north (1m scales)



Plate 3 Structures 221 and 229, looking north (1m scales)



Plate 4 Ditch 209, looking east. 1m scale



Plate 5 Sondage in Trench 2, showing ditch 207 and channel 240. 2m scale



Plate 6 Trench 3, looking south-east. 1m scales



Plate 7 sondage through alluvium in Trench 3. Looking south, 1m scales



Plate 8 Pit 322, with cow mandible in base, looking south-west. 1m and 0.3m scales.



Plate 9 Trench 4, looking north-west. 1m scales



Plate 10 Sondage through alluvium in Trench 4, looking north. 2m scale



Plate 11 Trench 5, looking north-east. 1m scales



Plate 12 Yard surface 524, looking east. 1m scales



Plate 13 Brick culvert 504, looking east. 1m scales



Plate 14 Test Pit 6, looking west. 1m scale



Plate 15 Test Pit 9 showing brick structure 905. Looking east, 1m scale



Plate 16 Acidifying shed B2 during early stages of demolition, looking north-east



Plate 17 Acidifying shed B1, looking west



Plate 18 Toilet block with Stables D to right, looking east



Plate 19 Stables D, looking east



Plate 20 Filtering Shed C, looking west



Plate 21 Removal of toilet block, looking east



Plate 22 Final stage of monitored demolition, looking east



Plate 23 Half-ton Yale Model BB Spur Geared Block Manual Chain Hoists in Acidifying shed B2



Plate 24 Vaulted cellars and machine bases under and near Infill block E

Appendix 1: Trench descriptions

Trench 2

Length: 15

Width: 2

Orientation: N-S

Context summary:

Context	Feature type	Context type	Interpretation	Height/ depth	Deposit description
200	Layer	Layer	Top surface / overburden		Black Scaley demolition layer
201	Layer	Layer	Top surface / overburden	0.36	Black Includes some white and red rubble
202	Layer	Layer	Top surface / overburden	0.42	Dark Demolition layer with mixed rubble
203	Layer	Layer	Clay layer	0.2	Light reddish brown Clay
204	Layer	Layer	Clay layer	0.18	Mid grey Silty clay
205	Pit	Cut	Stone pit	0.32	
206	Pit	Fill	Fill of pit [205]	0.32	mid grey Silty clay
207	Ditch	Cut	Cut of large ditch.		
208	Ditch	Fill	Fill of ditch 207		Moderately compact Red and grey rubble and brick
209	Ditch	Cut	Ditch	0.5	
210	Ditch	Fill	Ditch fill		Dark Clay
211	Ditch	Fill	Demo fill in top of ditch 209	0.1	Whiteish yellow Mix of mortar and brick
212	Ditch	Fill	Fill of ditch 209	0.38	Mid black Clay
213	Layer	Layer	Layer	0.38	lighter black clay
214		Cut	Small pit seen in section	0.4	
215	Posthole	Fill	Fill of post hole 214	0.42	Dark brown and black Mix of rubble and tile
216	Layer	Layer	Layer	0.1	Firm Mid brown Clay
217	Layer	Layer	Layer	0.12	Dark grey Demolition
218	Ditch	Fill	Rubble fill	0.38	Modern truncation fill of concrete and rubble with air gap
219	Ditch	Cut	Modern trunk cut	1.3	
220	Ditch	Fill	Fill of cut [219]	0.52	Dark Mixed rubble
221	Wall	Structure	Brick structure		
222	Pit	Cut	Cut of pit	0.26	
223	Pit	Fill	Initially thought to be fill of pit 222, now fill of ditch 207	0.26	Mid reddish brown mix of tile and brick
224	Posthole	Cut	cut of pit	0.11	
225	Posthole	Fill	Fill of post hole 224	0.11	Mid blackish brown Silty clay
226	Layer	Layer	Clay layer	0.26	Firm Dark grey Silty clay
227	Ditch	Cut	Modern truncation	0.5	

228	Ditch	Fill	Clay layer	0.18	Dark reddish grey Clay
229	Wall	Structure	Stone wall		
230		Cut	Construction cut for 221		
231		Fill	Fill of 221		
232	Wall	Cut	Construction cut of 229		
233	Wall	Fill	Fill of 229		
234	Ditch	Fill	Upper fill of ditch 237		Firm Mid yellow brown Clay
235	Ditch	Fill	middle fill of ditch 237		Firm Blueish grey Clay
236	Ditch	Fill	Lower fill of ditch 237		Firm Mid blue Clay
237	Ditch	Cut	Ditch		
238		Layer	Clay layer		Light yellowish brown Clay
239		Layer	Clay layer		Light blueish grey Clay
240		Cut	Layer		
241		Layer	Layer through which walls 221 and 229 may be cut		Firm Mid grey silty clay
242		Layer	Natural clay		Firm Mid yellow orange sandy clay
243		Layer	Layer of brick and mortar. Rubble or wall?	0.1	Soft Pinkish white and orange red
244		Layer	Layer above wall 221	0.15	Firm Mid blue grey silty clay

Trench 3

Length: 17.5 Width: 2 Orientation: E-W

Context summary:

Context	Feature type	Context type	Interpretation	Height/ depth	Deposit description
300	Layer	Layer	Tarmac		
301	Layer	Layer	Overburden	0.14	Light greyish brown Silty clay
302	Layer	Layer	Overburden	0.36	Compact Mid brownish grey Silty clays
303	Layer	Layer	Post-medieval garden soil	0.46	Compact Dark Blackish grey Clayey silt
304	Layer	Layer	Post medieval garden subsoil	0.32	Compact Mid grey Silty
305	Layer	Layer	Land reclamation deposit		Compact Mid yellowy grey Silty clay
306	Layer	Layer	Layer	0.16	Compact Mid brownish grey Silty clay
307	Layer	Layer	Alluvium	0.24	Compact Mid reddish blue Clay
308	Layer	Layer	Alluvium	0.28	Compact Mid blueish red Clay
309	Layer	Layer	Alluvium	0.16	Compact Light greyish pink Clay

310	Layer	Layer	Alluvium	0.14	Compact Light yellowish blue Clay
311	Layer	Layer	Alluvium		Compact Light pink and blue Clay
312	Layer	Layer	Alluvium	0.16	Compact Mid greyish pink Silty clay
313		Layer	Alluvium	0.34	Compact Light blue Gleyed clays
314	Layer	Layer	Alluvium	0.24	Compact Pinkish grey Silty clay
315	Ditch	Fill	Fill of ditch 316	0.44	
316	Ditch	Cut	Cut of ditch	0.42	
317	Ditch	Fill	Fill of ditch 318	0.44	
318	Ditch	Cut	Cut of ditch	0.44	
319	Posthole	Cut	Cut of posthole		
320	Pit	Fill	Fill of pit 322	0.2	Plastic Mid reddish brown clay
321	Pit	Fill	Fill of pit 322		Plastic Light yellowish brown Clay
322	Pit	Cut	Cut of pit	0.48	
323	Layer	Layer	Footings		
324	Layer	Layer	Concrete		
325	Natural	Layer	Natural		
326	Natural	Layer	Weathered natural	0.24	

Trench 4

Length: 17 Width: 2 Orientation: E-W

Context summary:

Context	Feature type	Context type	Interpretation	Height/depth	Deposit description
400	Layer	Layer	Overburden		Moderately compact Dark black Tarmac
401	Layer	Layer	Overburden		
402	Layer	Layer	Overburden	0.1	
403		Layer	Footings		
404	Layer	Layer	Layer		Compact Mid greyish brown Silty clay
405	Pit	Fill	Fill of pit 406	0.42	Moderately compact Dark greyish black Silty clay
406	Pit	Cut	Cut of pit	0.42	
407	Pit	Fill	Fill of pit 410	0.46	Moderately compact Dark blackish brown Silty CLay
408		Fill	Fill of pit 410	0.1	Moderately compact Dark blackish grey Silty clay

409	Pit	Fill	Fill of pit 410	0.36	Moderately compact Greyish Black Silty clay
410	Pit	Cut	Cut of pit 410	0.62	
411	Layer	Layer	Layer	0.26	Moderately compact Dark blackish grey Silty clay
412	Layer	Layer	Layer	0.12	Moderate compact Dark grey brown Silty clay
413	Layer	Layer	Layer	0.06	Moderately compact Mid grey Silty clay
414	Layer	Layer	Layer	0.36	Compact Mid - light grey Silty clay
415	Pit	Fill	Fill of ditch 416	0.34	Compact Mid - light grey Silty clay
416	Ditch	Cut	Cut of ditch 416		
417	Ditch	Fill	Fill of ditch 418	0.34	Compact Mid - light grey Silty clay
418	Ditch	Cut	Cut of ditch 418	0.34	
419	Ditch	Fill	Fill of ditch 420	0.26	Compact Mid - light grey Silty clay
420	Ditch	Cut	Cut of ditch 420	0.26	
421	Unknown	Fill	Fill of feature 422	0.22	Compact Mid brownish grey silty clay
422	Unknown	Cut	Cut of feature		
423	Layer	Layer	Made ground	0.68	Compact Mid yellow grey Silty clay
424	Layer	Layer	Upper alluvial	0.48	Mid yellow blue clay
425	Layer	Layer	Lower alluvial		Mid yellow blue clay
426	Ditch	Fill			
427	Ditch	Cut			
428	Ditch	Fill			
429	Ditch	Cut			

Trench 5

Length: 13 Width: 2 Orientation: E-W

Context summary:

Context	Feature type	Context type	Interpretation	Height/depth	Deposit description
500	Layer	Layer	Overburden	0.22	Moderately compact Dark black Tarmac
501	Layer	Layer	Overburden	0.26	Moderately compact Mid whiteish yellow Gravels
502	Layer	Layer	Overburden		Brick surface 230 x 80 x 100mm bricks
503	Layer	Layer	Layer	0.24	Light greyish brown Clay
504	Ditch	Cut	Cut of conduit	0.36	

505	Field drain	Fill	Fill of conduit cut 504		Brick - handmade rough 140 x 110 x 80mm Unbounded
506	Field drain	Fill	Fill of conduit cut 504	0.36	Mid greyish brown clay
507	Layer	Layer	Layer	0.2	Mid greyish brown Clay
508	Layer	Layer	Layer	0.38	Mid brown Clay
509	Pit	Cut	Cut of pit	0.54	
510	Pit	Fill	Fill of pit 509	0.54	Dark Blackish brown Clay
511	Layer	Layer	Layer	0.28	Slightly pinkish brown Clay
512	Layer	Layer	Layer	0.08	Whiteish yellow Clay
513	Field drain	Cut	Cut of drain	0.52	
514	Field drain	Layer	Fill of drain 513	0.52	dark grey mixed rubble
515	Field drain	Fill	Pipe within drain 513		Ceramic varnished red pipe
516	Ditch	Cut	Cut of ditch		
517	Ditch	Fill	Fill of ditch 516		
518	Pit	Cut	Cut of pit		
519	Pit	Fill	Fill of pit 318		Mid greyish brown clay
520	Pit	Cut	Cut of pit		
521	Pit	Fill	Fill of pit 520		mid grey brown clay
522	Pit	Cut	Cut of pit		
523	Pit	Fill	Fill of pit 522		
524	Layer	Layer	Surface		
525	Surface	Fill	Fill of structure 526		red mix of sandy clay and cobbles
526		Structure	Structure 526		
527	Layer	Cut	Cut of western part of trench		
528		Layer	Mixed deposits		
529		Layer	Construction layer		
530	Layer	Layer	Layer	0.1	Dark brown Clay
531	Layer	Layer	Layer		Yellowish white mortar
532	Layer	Layer	Layer	0.04	red
533	Layer	Layer	Layer	0.04	black
534		Layer	Layer	0.06	grey clay
535	Layer	Layer	Alluvium		Mid blue grey Clay
536	Layer	Layer	Alluvium		Mixed yellowish blueish orange Clay
537	Layer	Layer	Alluvium		Yellowish blueish orange Clay
538	Natural	Layer	Natural		Mid blue grey Clay

Trench 6

Length: 1

Width: 1

Orientation:

Context summary:

Context	Feature type	Context type	Interpretation	Height/ depth	Deposit description
600	Layer	Layer	Top surface	0.2	Reinforced concrete
601	Wall	Fill	Backfill	0.76	Soft and loose Mid greyish brown Silty sand
602	Natural	Layer	Natural		Compact Mid greenish grey Silty clay
603	Wall	Structure	Wall		
604	Floor	Structure	Floor	0.16	
605	Field drain	Cut	Cut of drain		
606	Field drain	Structure	Drain pipe		

Trench 7

Length: 1 Width: 1 Orientation:

Context summary:

Context	Feature type	Context type	Interpretation	Height/ depth	Deposit description
700	Layer	Layer	Top surface	0.2	
701	Wall	Fill	Backfill		Soft and loose Mid greyish brown Silty sand
702	Wall	Structure	Wall		
703	Wall	Structure	Flooring	0.16	
704		Structure	Water pipe		

Trench 8

Length: 1 Width: 1 Orientation:

Context summary:

Context	Feature type	Context type	Interpretation	Height/ depth	Deposit description
800	Layer	Layer	Top surface	0.2	Concrete flooring
801	Wall	Fill	Backfill	0.68	Soft and loose Mid greyish brown Silty sand
802	Wall	Structure	Footings		
803	Layer	Structure	Flooring	0.16	
804	Unknown	Structure	Water pipe		

Trench 9

Length: 1 Width: 1 Orientation:

Context summary:

Context	Feature type	Context type	Interpretation	Height/ depth	Deposit description
900	Layer	Layer	Top surface	0.06	
901	Layer	Layer	Modern layer	0.06	Concrete

902	Layer	Fill	Fill	0.18	Moderately compact Black Silts, charcoal and clinker ash
903	Wall	Structure	Wall		
904	Wall	Cut	Cut of semi circular structure		
905	Wall	Structure	Semi circular structure		
906	Wall	Fill	Fill of 904		Moderately compact Dark blackish grey Clay silt
907	Wall	Fill	Fill of structure 905		Rough concrete

Appendix 2: Summary of project archive (WCM102428)

TYPE	DETAILS*
Artefacts and Environmental	Animal bones, Ceramics, Environmental,
Paper	Context sheet, Drawing, Matrices, Photograph, Plan, Report, Section,
Digital	Database, GIS, Images raster/digital photography, Spreadsheets, Survey, Text

**OASIS terminology*

Appendix 3: Summary of data for HER

period	material class	material subtype	object specific type	count	weight (g)
Roman	ceramic		pot	1	3
	slag	slag(Fe)		1	49
	slag	slag(Fe)	smelting slag(tap)	1	76
medieval	ceramic		pot	6	69
	ceramic		roof tile(flat)	4	300
	ceramic		ridge tile	1	137
	ceramic		roof tile	1	6
late medieval/early post-med	ceramic		roof tile(flat)	25	5463
	ceramic		brick	5	2514
post-medieval	ceramic		pot	25	548
	ceramic		brick	3	1443
	ceramic		cbm	3	95
	ceramic		pipe	13	65
modern	ceramic		pot	9	422
undated	?plaster			1	9
	stone	sandstone		1	387
	metal	iron	nail	2	17

Table 1: Quantification of site assemblage

Broad period	fabric code	Fabric common name	count	weight (g)
Roman	12.2	Oxidised organically tempered Severn Valley ware	1	3
medieval	55	Worcester-type sandy unglazed ware	1	10
	56	Malvernian unglazed ware	1	25
	64.1	Worcester-type sandy glazed ware	3	30
	69	Oxidized glazed Malvernian ware	1	4
post-medieval	75	North Devon gravel tempered ware	1	6
	78	Post-medieval red ware	11	277
	81	Stonewares	1	12

	81.5	White salt-glazed stoneware	1	2
	82	Tin-glazed ware	2	18
	89	Agate ware	3	27
	91	Post-medieval buff wares	7	208
modern	81.4	Miscellaneous late stoneware	1	305
	83.1	Worcester porcelain	2	16
	84	Creamware	4	26
	101	Miscellaneous modern wares	1	73

Table 2: Quantification of pottery by fabric type

context	material class	material subtype	object specific type	count	weight (g)	start date	end date	finds TPQ
210	ceramic		brick	2	255			L18-19C
	ceramic		pipe	3	6			
	ceramic		pot	1	104		18C	
	ceramic		pot	1	52	M17C	18C	
	ceramic		pot	2	22	M18C	L18C	
	ceramic		pot	1	2	E18C	L18C	
	ceramic		pot	1	4	17C	18C	
	ceramic		pot	2	16	M18C	L18C	
	ceramic		pot	4	26	M18C	L18C	
	ceramic		pot	3	27	M18C	L18C	
	ceramic		pot	2	77	M17C	18C	
	ceramic		pot	1	73	L18C	19C	
	ceramic		roof tile(flat)	1	51	L15C+		
metal	iron	nail	1	9				
223	ceramic		brick	2	1376			M17-18C
	ceramic		pot	1	25	13C	14C	
	ceramic		pot	1	7	12C	14C	
	ceramic		pot	1	13	M17C	18C	
	ceramic		roof tile(flat)	3	1610	L15C+		
slag	slag(Fe)	pot	1	49				
303	ceramic		pot	1	6	L16C	18C	19-20C
	ceramic		pot	1	305	19C	20C	
	ceramic		ridge tile	1	137	13C	15C	
304	ceramic		pipe	2	18	M17C	L17C	M18C
	ceramic		pot	1	12	M18C		
	ceramic		pot	1	14	17C	18C	
	ceramic		pot	1	9	E18C		
	ceramic		pot	1	45	L17C	18C	

305	ceramic		roof tile(flat)	2	279	L15C+		L15C+
306	ceramic		cbm	1	6			12-14C
	ceramic		pot	2	23	12C	14C	
	slag	slag(Fe)	smelting slag(tap)	1	76			
315	ceramic		cbm	3	95			L17-18C
	ceramic		pipe	3	13	M17C		
	ceramic		pot	1	1	L17C	18C	
	ceramic		pot	1	2	M17C	18C	
317	ceramic		pot	1	3	M1C	2C	L17-18C
	ceramic		pot	1	5	M17C	18C	
	ceramic		pot	3	77	L17C	18C	
	ceramic		roof tile(flat)	3	234	L15C+		
320	?plaster			1	9			L17-18C
	ceramic		brick	4	2326			
	ceramic		pipe	5	28	L17C	18C	
	ceramic		pot	1	10	L11C	M14C	
	ceramic		pot	1	4	13C	15C	
	ceramic		pot	3	78	L17C	18C	
	ceramic		roof tile(flat)	3	285	13C	15C	
	ceramic		roof tile(flat)	1	15	13C	16C	
	ceramic		roof tile(flat)	16	3289	L15C+		
	metal	iron	nail	1	8			
	stone	sandstone		1	387			

Table 3: Finds dating by context

context	sample	Short description	Position of fill	Provisional date	Volume (L)	volume processed (L)	residue assessed	flot assessed
236	1	Fill of ditch 237	Lower	Medieval to post-medieval	20	20	Yes	Yes

Table 4: List of bulk samples

context	Count	Weight (g)	Feature type	Context description	Provisional date
210	2	31	Ditch	Ditch fill	Uncertain/Not known
210	23	299	Ditch	Ditch fill	Uncertain/Not known
223	1	21	Ditch	Initially thought to be fill of pit 222, now fill of ditch 207	Uncertain/Not known
241	9	692		Layer through which walls 221 and 229 may be cut	
305	5	429	Layer	Land reclamation deposit	Medieval
315	3	17	Ditch	Fill of ditch 316	Uncertain/Not known
317	3	8	Ditch	Fill of ditch 318	Uncertain/Not known
321	87	1773	Pit	Fill of pit 322	Uncertain/Not known
Totals	133	3271			

Table 5: Hand-collected animal bone