University of Leicester

Archaeological Services

An Archaeological Watching Brief at Jubilee Square, Leicester

NGR:
SK 583 044

Wayne Jarvis

ULAS Report No. 2015-003
Accession Number A14 2013

An Archaeological Watching Brief at Jubilee Square, Leicester

(SK 583 044)

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An Archaeological Watching Brief for Jubilee Square, Leicester

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Summary

An archaeological watching brief was carried out during the new Jubilee Square open space works at St Nicholas Place, Leicester on behalf of Leicester City Council. The investigation consisted of the observation of groundworks within the area of a new open space, the groundworks consisting of the planting of trees, new walling, paving and lawns and the diversion of services. Activity on the former Highcross Street/Applegate frontage was largely truncated by modern cellaring. However, features of Roman, medieval and later date were found during the watching brief, with archaeology being concentrated to the west of Carey's Close. The Roman evidence included the Fosse Way road as it runs through the town to the south of the forum site. Either side of this road, parallel wall-lines and roadside ditches were exposed. On the north side of the road further substantial walling of a type suggesting public works may be the forum insula XXII precinct wall. Adjacent to the south edge of the Fosse Way was the north-west corner of a stone building with associated floor make ups. Sealing the Roman activity, a 'dark earth' of Saxon or later date was also identified in some areas. The medieval activity included a series of surfaces and occupation layers most likely levels for the medieval Hotgate street, pottery evidence for these being of Saxo-Norman date. Further medieval evidence included stone walling, occupation levels, and pit activity, including a probable 12th-century pit with cess deposits. Later activity included stone and brick structures with much reuse and reworking of Roman and later materials being observed, the line of Thornton Lane being confirmed across site, and two wells one each of stone and brick construction. The Planning Authority is Leicester City Council (Planning application no. 20130191). The archive will be deposited in due course with Leicester City Museums, subject to their confirmation, Accession No. A14 2013.

1. Introduction

In accordance with National Planning Policy Framework (NPPF), Section 12 (Conserving and Enhancing the Historic Environment) this document presents the results of an archaeological watching brief carried out by University of Leicester Archaeological Services (ULAS) on land at Jubilee Square, Leicester. The watching brief was commissioned by Leicester City Council as part of a planning application for the new Jubilee Square public open space works These landscaping works would require the excavation of tree-pits, foundations for revetment walling and seating, and reduced levels for lawn areas and paving. Additionally, some diversion of live services would be necessary. The proposed development lies within an area of significant archaeological potential. The work was carried out between October 2013 and September 2014.

2. Site Description, Land use, Topography and Geology

The site occupies St Nicholas Place, between Carey's Close, Janet Setchfield Place and St Nicholas Circle in the west of the historic core of Leicester (SK 583 044; Figure 1 - Figure 3). The assessment area consists of approximately 6000 sq m. currently used as car parking, landscaping and a bus/taxi rank. The natural ground level lies at 3.34 – 4.70m below the present ground surface of *c.*63 – 64m aOD. The Ordnance Survey of Great Britain Sheet 156 indicates that the underlying geology consists of Mercia mudstone, with overlying river sands and gravels.
http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html.

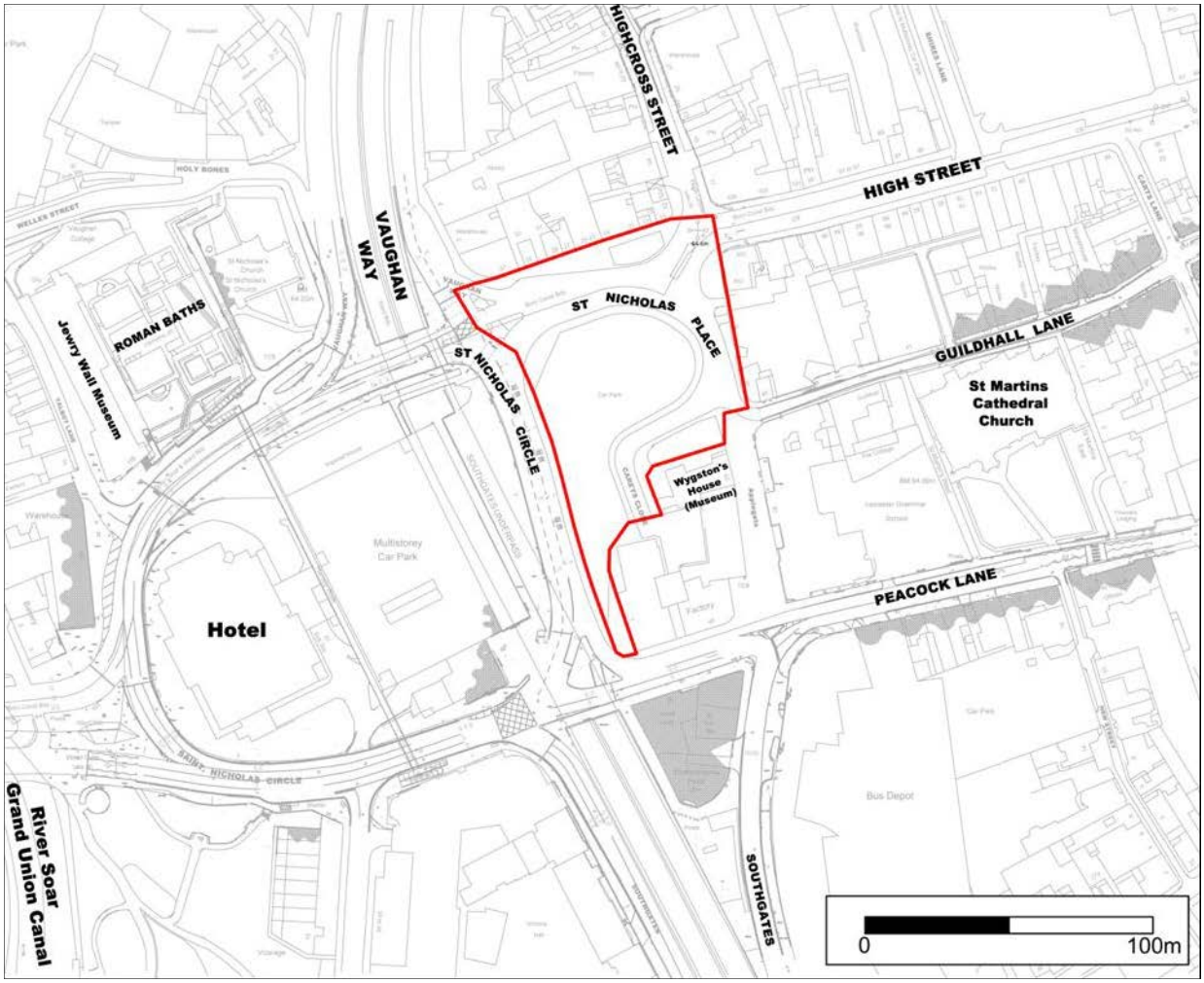

Figure 1 Site Location.
Reproduced from the Landranger 1:50000 map by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright 1996. All rights reserved. Licence number AL 100029495.

3. Archaeological and Historical Background, and Archaeological Potential

Roman: The site lies in the central part of Roman Leicester, across the line of the principal east-west street of the town (the Fosse Way) and over the south and east ranges of the forum, constructed in the mid-2nd century (Figure 2). The plan of this major public building has been projected from numerous minor archaeological interventions over the past century, together with excavations in the 1960s and 70s, published in 1973 (Hebditch and Mellor 1973). The most recent excavations to have reached the Roman forum levels were in 1971 and 1973 (A302.1971 and A295.1973), the latter furnishing new information on the layout of the south range, the principal entrance to the forum. The forum comprised a large rectangular

open space with ranges of shops on the eastern and western sides (with evidence for subsidiary entrances, perhaps for wheeled traffic) and with internal and external porticoes. The basilica lay on the north side and may also have had one or more external porticoes. Excavations have indicated that the forum walls may have survived into the 12th century, exerting an influence on the development of the medieval street pattern, before being extensively robbed subsequently.

Roman street levels are at a depth of between 2.36 and 4.08m below present and Roman floor levels have been recorded at between 3.33 - 4.33m below present.

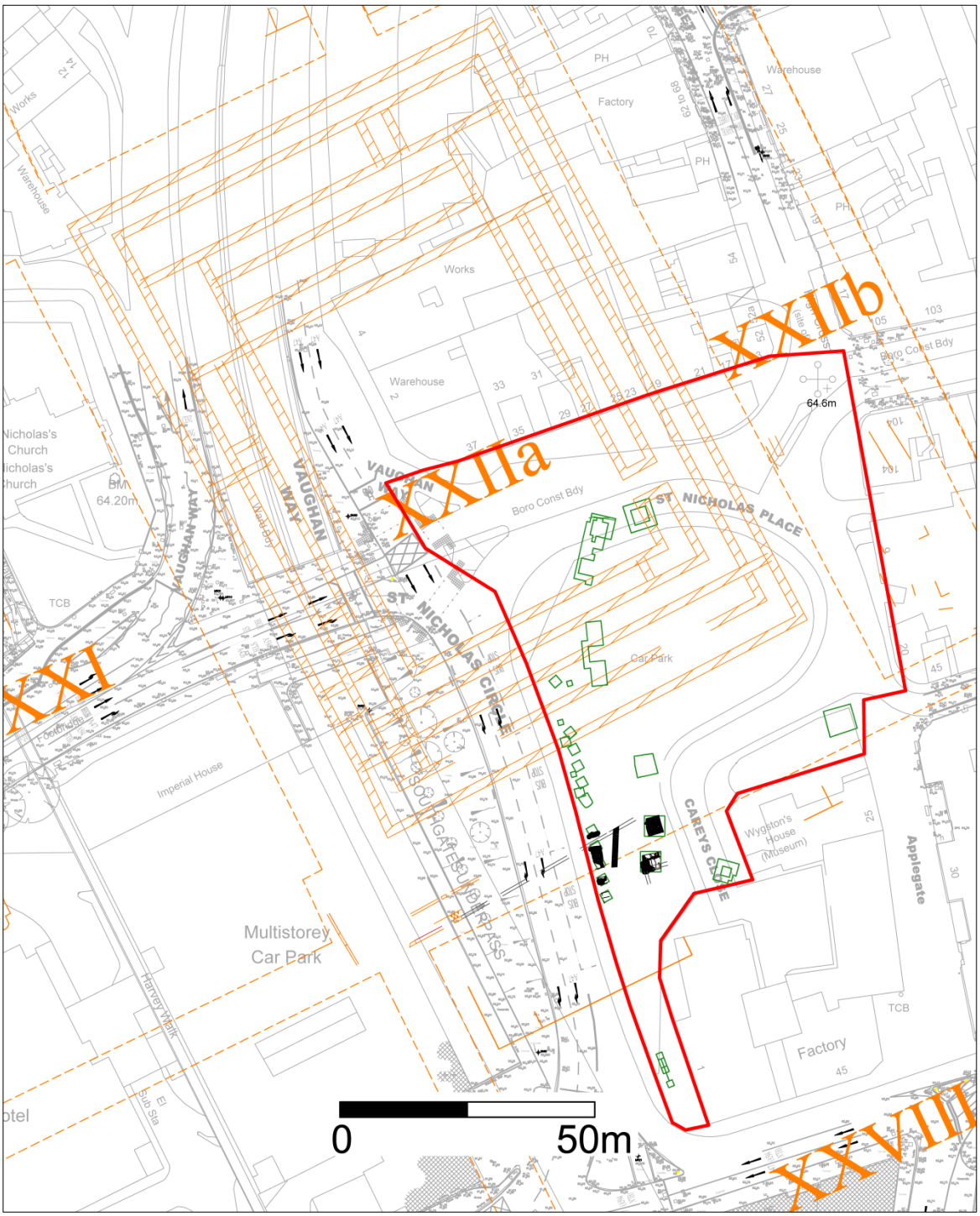

Figure 2 Site area, showing Roman forum and previous results (orange). Main tree-pits shown (green). Current stage, Roman results in black.

Anglo-Saxon: The site lies in an area where post-Roman dark earths, perhaps of the 5th-6th centuries AD have been encountered (site A302.1971) and in an area postulated as the focus of late Saxon and early Norman occupation (Courtney 1998). Dark earths have also been found nearby at 9 St Nicholas Place and Freeschool Lane, in both cases over the latest Roman street metallings.

High medieval (11th-15th century) and Post-medieval (15th century to 17th century).

The site lies over the lines of a number of medieval streets, most significantly the principal thoroughfares, High Street (now Highcross Street/St Nicholas Place/Applegate in this area) and Swinesmarket (modern High Street and St Nicholas Place). At the junction lay the town's Wednesday Market and site of the Highcross, a 16th century circular colonnaded butter market of which one column survives (now moved from the present market place to Jubilee Square).

One of the forum excavations previously referred to, A302.1971, revealed evidence for a complex sequence of medieval and post-medieval burgage plots on the western side of the medieval High Street, and others running back from the frontage of medieval Hotgate (later Thornton Lane; Kipling 2010). Further investigations in 1999 provided evidence of these properties closer to the medieval street frontage (Meek 2000). Although in places, the medieval levels were found at a depth of 1.22m or sometimes less below present, the archaeology in this area is unpredictable, and in places they can be as deep as 2.5m. Medieval street level generally lies at around 1.5m below present. A similar picture has come from nearby excavations on the east side of the medieval High Street at 9 St Nicholas Place, which revealed part of a plot with a high-status building which may have related to medieval High Street, together with plot tails of properties on the south side of medieval Swinesmarket. This important evaluation also exposed probable Roman Fosse Way levels at 1.78m in depth. In 2009 more recent fieldwork on site exposed short sections of walling including a cellar; these were thought to be of post-medieval date (Gnanaratnam 2009).

4. Scope of Works and Impact Assessment

The groundworks were to consist of landscaping works requiring the excavation of tree-pits, foundations for revetment walling and seating, and reduced levels for lawn areas and paving. Additionally, some diversion of live services would be necessary. Based on an analysis of anticipated depths of archaeological deposits from previous investigations, an assessment of formation depths on the scheme plans, and the requirements of the archaeological brief set by the City Archaeologist, an initial assessment of the proposed groundworks devised a strategy for monitoring the groundworks dependent on the potential for archaeology and the nature of the groundworks (WSI: 3-4, here Figure 4). However, early observations on site indicated that the groundworks were going to be of a greater effect than initially anticipated due to the requirement to divert deep buried services and the greater depth of tree-pits as the methodology for these had changed. Additionally, some work had identified archaeological remains on the frontages at a shallower depth than anticipated. A meeting was held on 11/02/2014 and agreement was made between the City Archaeologist and the client that potentially all groundworks greater than 700mm in depth would be monitored, if deemed necessary by the archaeologist in attendance. Monitoring would be flexible, being stepped up or down between intermittent and continuous attendance dependent on ongoing observations. Additionally, the excavation of those tree-pits, that would potentially have the greatest archaeological impact would be carried out under archaeological supervision and prior to the actual construction works to prevent any possible delays to the work schedule.

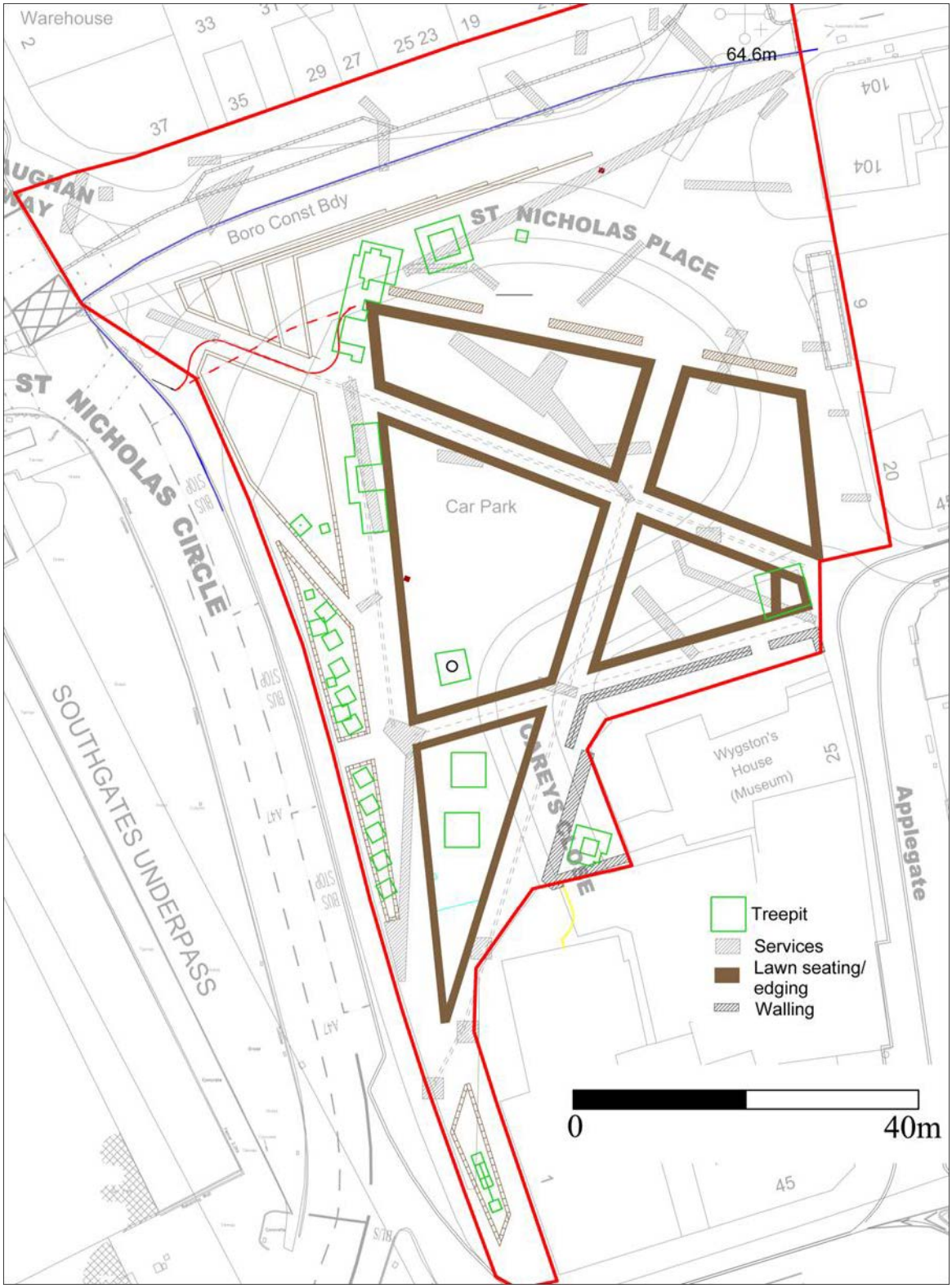

Figure 3 Developer plan showing types of main groundworks.

Figure 4 Initial watching brief strategy (WSI).

5. Aims and Objectives

Aims

The purpose of the archaeological work may be summarised as follows:

- To identify the presence/absence of any archaeological deposits.
- To describe, record and if possible provide a date range for the stratigraphy.
- To produce an archive and report of any results to inform the need for further work and to provide supplementary data for the Heritage Assessment.

Research objectives

All mitigation work will be considered in light of the East Midlands Research Framework (Cooper ed. 2006) and strategy (Knight *et al*. 2012), along with targeting national research aims. Research aims will be reviewed and updated as the work progresses and new information comes to light. The following research objectives have the potential to be addressed by this project:

1. Urbanism: How did the major towns and smaller market towns of the region develop after the Norman Conquest.

2. Can we define more closely the industrial and trading activities associated with the towns and the nature and extent of urban influence on the countryside.

3. Can we shed further light on the commercial role of fairs, markets, ports and other trading centres? (Knight 2012, para 7.1, 94).

6. Methodology

The fieldwork followed the design specification (WSI, Buckley 2014), approved by Leicester City Archaeologist as advisor to the planning authority, and adhered to the Institute for Archaeologists (IfA) *Code of Conduct* (2010) and their *Standard and Guidance for Archaeological Watching Briefs (2008)*.
The site brief for 'Archaeological attendance for inspection and recording' was as follows:-

- Any stratigraphy identified will be recorded by sketch or drawn sections (ass appropriate), photographs and written descriptions of samples and deposits including any artefacts.
- Archaeological deposits will be excavated and recorded using standard ULAS procedures.
- Spoil will be monitored for artefacts.
- Any human remains encountered will be initially left in situ, covered and protected, and only be removed in accordance with a Ministry of Justice licence and in compliance with relevant environmental health regulations. The landowner and/or developer, the Planning Authority and the coroner will be informed immediately of their discovery.

Internal monitoring procedures were undertaken including visits to the site by the project manager where necessary. These ensured that project targets were met and professional standards maintained. Provision was made for external monitoring meetings with the Planning Authority and the Client, where required.

7. Results

Fieldwork took place between October 2013 and September 2014. The majority of work involved intermittent visits as new areas became available for groundworks to be carried out and observed. Continuous work took place when tree-pits were being excavated and recorded. The groundworks can be divided into ground level reduction (Figure 5, R) service trench works (S) and tree-pits (TP), with the areas referred to in the text where necessary with a number suffix (e.g. TP4 was tree-pit no. 4, Table 1).

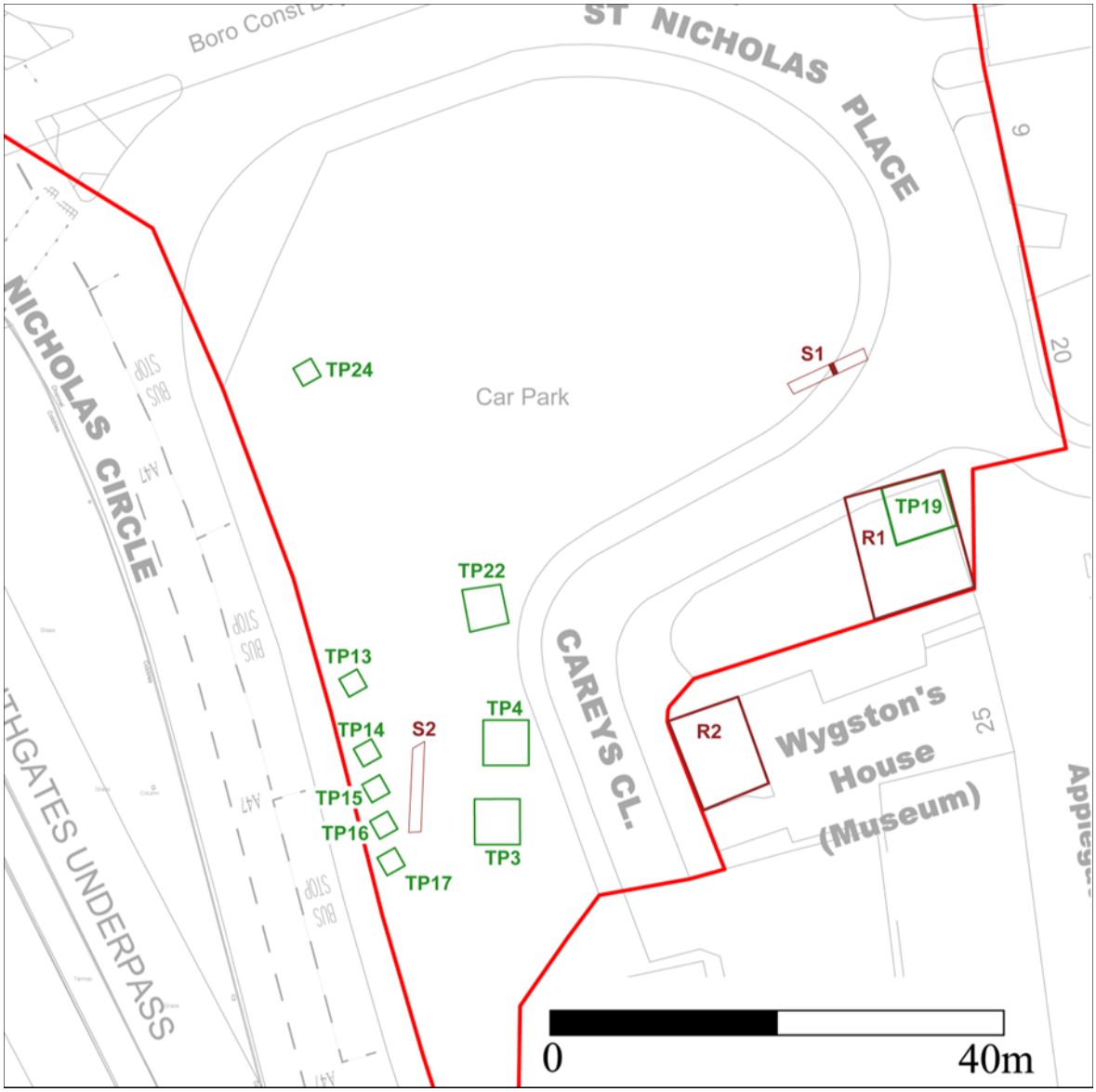

Figure 5 Main areas with positive results, by type of works (see text).

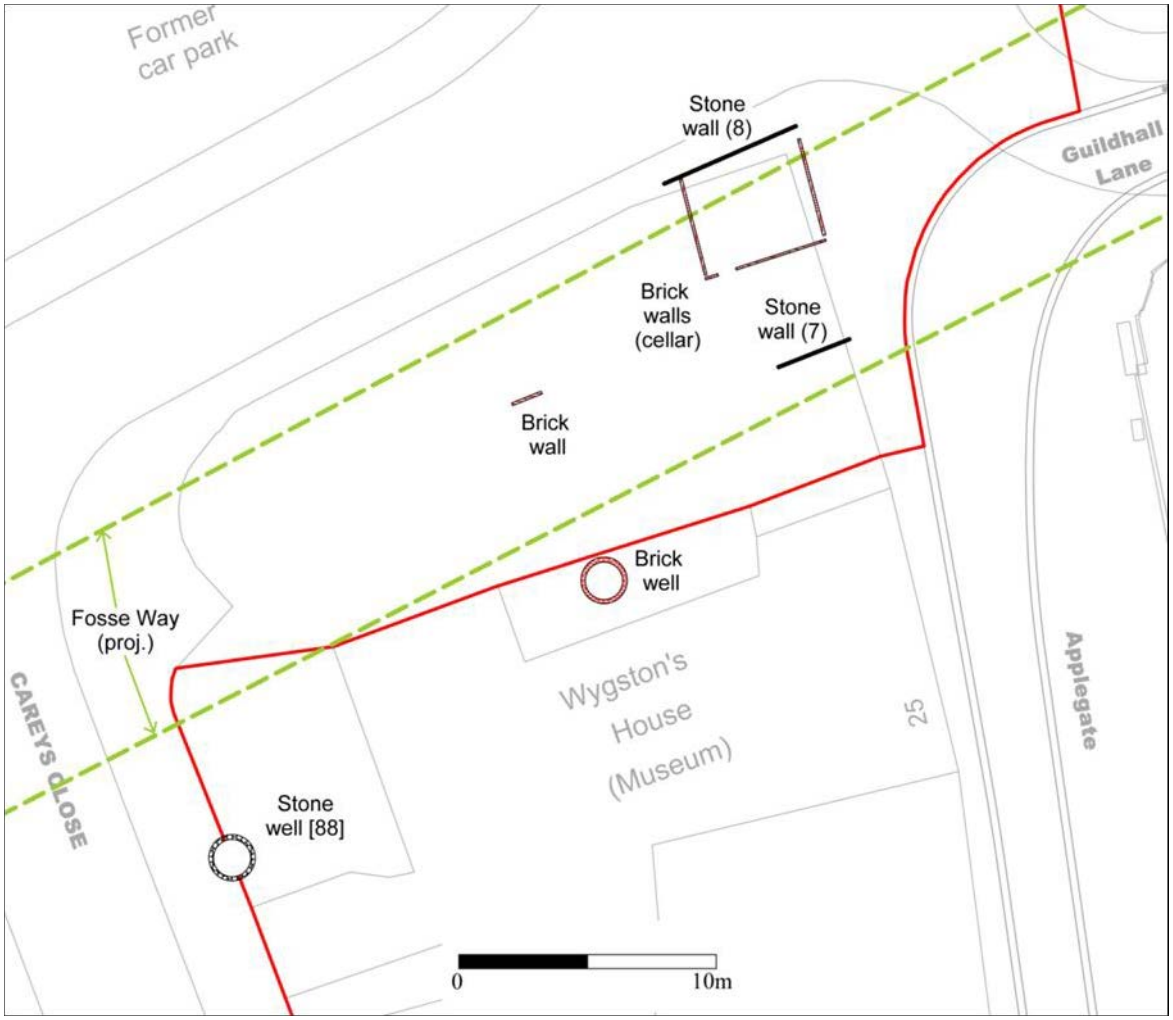

Figure 6 Features identified in south-east area (Wygston's House area).

Reduced level works

Minor reduction in ground levels was carried out across the majority of the site area (Figure 8). These indicated that generally over 0.7m of cover was present before less disturbed deposits were exposed, although this was shallower on the Applegate frontage (R1).

Applegate frontage R1

Here, two east-west stone wall-lines were exposed at depths of as little as 0.6m from current ground level, contexts (7) and (8) (Figure 7). The depth to these structures is unsurprising as the survival of medieval Wygston's House at 'ground level' indicates very little build-up of deposits here. The two walls were exposed more fully during the tree-pit works and are therefore dealt with fully below.

Figure 7 Wall line (8) as initially exposed on the Applegate frontage.

Wygston's House West R2

To the west of Wygston's House, levels reduction exposed a stone-built well, context (88) [89] (Figure 5 R2, Figure 6). The well was slate capped, and had been backfilled loosely to within 1.4m of the top (Figure 9, Figure 10). The structure consisted of a 0.4m-thick lining of roughly hewn curved stones. The outer diameter of the well was 1.8m. It is probably post-medieval in date, the upper courses exhibiting some patches where the stone had been added to with brick fragments.

Figure 8 Reduced level works, in the area west of Carey's Close, looking west.

Figure 9 Stone well [88] (87), rear of Wygston's House property to right, High Street in background.

Figure 10 Stone well [88] (87).

Service trench works

Service trench S1 north of Carey's Close and adjacent to St Nicholas Place exposed a short stretch of stone wall (Context (1), Figure 5, Figure 11). This was over 0.6m long and 0.45m wide, built of sandstone fragments bonded together with hard mortar. It is potentially related to walling identified in the 1999 evaluation where trenching just to the north exposed structures considered to be part of the Golden Lion public house which was sited here (Meek 2000). Although probably originally constructed in the medieval period, the pub was rebuilt on at least one occasion. The wall context (1) is probably also late in date, considering its build. Further to the west, the service trench crossing the line of Carey's Close exposed demolition deposits that look comparable to levelling episodes seen during the evaluative works of 1999 (Meek 2000) where they were interpreted as street levels for Thornton Lane (*ibid.*).

Figure 11 Stone wall (1) in service trench S1, during cleaning.

To the west of Carey's Close, deep service-trench works (Figure 5, S2) exposed features of Roman date. The trench crossed a 5m-wide stretch of Fosse Way metalling, context (3). The south side of this was disturbed by previous works here and on the north side a substantial wall was recorded, context (4). Beyond this wall to the north, the stratigraphy was more disturbed from a previous manhole that the new service was being keyed into, but there were suggestions that lower layers were slumping into an east-west linear feature, potentially an early roadside ditch. Further work in tree-pits TP3 and TP4 clearly identified the north and south edges of the Fosse Way (see below and Figure 16). The upper level of the Fosse Way metalling (3) was at a depth of 1.6m from current ground level (at a height of 62.2m aOD). Excavation of the service trench to formation depth exposed a series of make ups for the Fosse Way with a total thickness of more than 0.75m (Figure 12). These consisted of cemented (iron-panned) sands and gravels and some larger rounded cobbles up to 0.2m across. Late 1st- to early 2nd-century pottery was recovered from context (3), somewhat early for a deposit this high in the sequence and therefore perhaps residual. The topmost layer on the Fosse Way line was 0.1m of stony material, mainly Dane Hills sandstone probably a demolition layer. A deposit at the base of the service trench below the metalling layers was a pale loamy soil, but this could be within the road sequence rather than a deposit actually below the base of the road. The north edge of metalling here (3) butted up to wall-line (4) at the base of the exposed section. The line of the wall was only 0.7m in length, as it had been cut through to the east by the previous service line running to the manhole. At the top of the exposure of wall there was a break between the two features (3) and (4), filled with a loose soil. This soil infilled the stepped south profile of the wall, a profile due to the different courses incorporated into the structure (Figure 13). These courses consisted of at the base, two courses of stone, then two tile levelling courses, two above again of stone and the topmost course again of tile. This type of build with alternating courses is characteristic of public buildings in Leicester (for example the Jewry Wall baths and *macellum*, e.g. Coward and Speed 2009, 42). The lowest course was wider at the south, suggesting a deliberate plinth course presumably indicating a wider foundation than the superstructure. The wall was built of granodiorite rubble up to 0.4m by 0.25m by 0.1m, with the tiles being up to 0.4m by 0.2m by 0.06m and of *lydion* type (flat bricks). The mortar was a buff coloured shelly mortar with occasional gravel filler. The wall did not have a distinct rubble core. Both faced sides of the

wall appeared to be original at the base, indicating a wall thickness of 0.7m with the visible height of the wall being 0.8m. The lower section of the wall and its foundations were not observed at the base of the formation depth. The orientation of the faces indicates that the wall is on the same orientation as the forum walls seen to the north, slightly north of east-west (Figure 2). The location of the wall-line is right on the south edge of the forum insula (XXII). Previous observations 20m to the west on the line of the Southgates Underpass identified a short stretch of wall on the same alignment (Figure 2). These therefore most likely form the line of the forum insula precinct south wall.

Figure 12 Fosse Way metalling (3) and, at the rear, wall-line (4).

Figure 13 Wall-build (4) to north of Fosse Way metalling.

Figure 14 Possible late structure (5) with reused Roman masonry SF1.

At the south end of this service run a new manhole pit was excavated. At 1.2m in depth (i.e. at a depth of c. 61.8m aOD) and cutting garden soils to the south was a setting of stone and tile, context (5). This was four courses deep (0.7m in depth total) of mixed geology, with a

very loose mortar possibly residual on the reused materials. This feature could potentially be a late wall-line, running for at least 1m north-east to south-west, although probable Roman stratigraphy was exposed below this. The north edge of context (5) was also associated with an occupation layer, a greenish-brown silty clay with common mortar flecks and oyster shell. The top stone of feature (5) was a reused piece of monumental masonry of Roman origin, SF1 (see appendix). The tile is also worthy as note as it was a wedge-shaped arch tile. Removal of this stonework exposed a small pocket of stratigraphy (Figure 15). This comprised a series of occupation layers 0.5m in total depth, potentially of Roman date, one of which was a thin layer of crushed Mercia mudstone, perhaps a floor make up. These were observed at a depth of 1.5m (*c*.61.5m aOD)

Figure 15 Small area of stratigraphy exposed in service trench S2.

Tree-pit works

The initial tree-pit arrangement is shown in Figure 3, and tree-pits where features were observed are highlighted on Figure 5. Only tree-pits which produced archaeological evidence are dealt with in the text, the records for all tree-pits and indicating depths reached is shown in Table 1.

Table 1 tree-pit results

Tree-pit Area/No.	Location	Depth Reached (m)	Archaeology
1	very SW planter, adj. to CityBlock	1.0	N
2	very SW planter, adj. to CityBlock	1.0	N
3	W of Carey's Cl., S lawn	1.3	Y
4	W of Carey's Cl., S lawn	1.4	Y
5	N of the 2 W planters	1.1	N
6	N of the 2 W planters	1.5	N
7	N of the 2 W planters	1.5	N
8	N of the 2 W planters	1.5	N
9	N of the 2 W planters	1.5	N

10	N of the 2 W planters	1.1	N
11	N of the 2 W planters	1.6	N
12	N of the 2 W planters	1.6	N
13	N of the 2 W planters	1.5	Y
14	S of the 2 W planters	1.0	Y
15	S of the 2 W planters	1.0	Y
16	S of the 2 W planters	1.0	Y
17	S of the 2 W planters	1.0	Y
18	S of the 2 W planters	1.0	N
19	Applegate frontage	2.2	Y
20	N end St Nich's Pl., W of TP21	1.0	N
21	N end St Nich's Pl (Xmas tree-pit)	1.0	N
22	W of Carey's Cl, mid lawn area	1.3	N
23	W of Wygston's Ho.	1.7	N
24	NW planter	1.2	Y
25	NW planter (cont'd)	1.4	N

Tree-pits TP3 and TP4

These tree-pits were sited in the south lawn area (Figure 5). These measured 4m x 4m and with a depth of 1.3m-1.4m. Both tree-pit excavations exposed Fosse Way metalling in plan (Figure 16). As this stratigraphy survived at a level higher than the required formation depth, sample excavation of deposits was carried out to characterise their nature. The Fosse Way metalling consisted of further layers of cemented sands and gravels including context (9), with some large cobbles and stone rubble up to 0.5m by 0.2m and 0.1m (context 42). From just above context (42) in the garden soil in the west section (Figure 17), a fragment of a column drum was recovered, SF6 (see appendix). In the south-east corner of tree-pit TP4 a fine gravel surface was exposed above these layers, context (23), see Figure 23. The north end of tree-pit TP4 had a cleaner layer, a more or less linear context (10) on a north-east to south-west alignment. This context unsurprisingly had a rather mixed assemblage of pottery including earlier and later Roman material (2nd-4th century), and perhaps indicates a period of lower maintenance and reworking of deposits. Context (10) was removed to expose a deposit of larger granodiorite rubble, context (43), see Figure 18. This was probably associated with adjacent (42), and is most likely a levelling layer along the northern edge of the Fosse Way, perhaps to consolidate the surface due to slumping into the adjacent roadside ditch as suggested by layer (58) at the base of the sequence exposed here (see Figure 19, Figure 20). Material from (58) suggests this activity dates to the late 2nd to early 3rd-century or later.

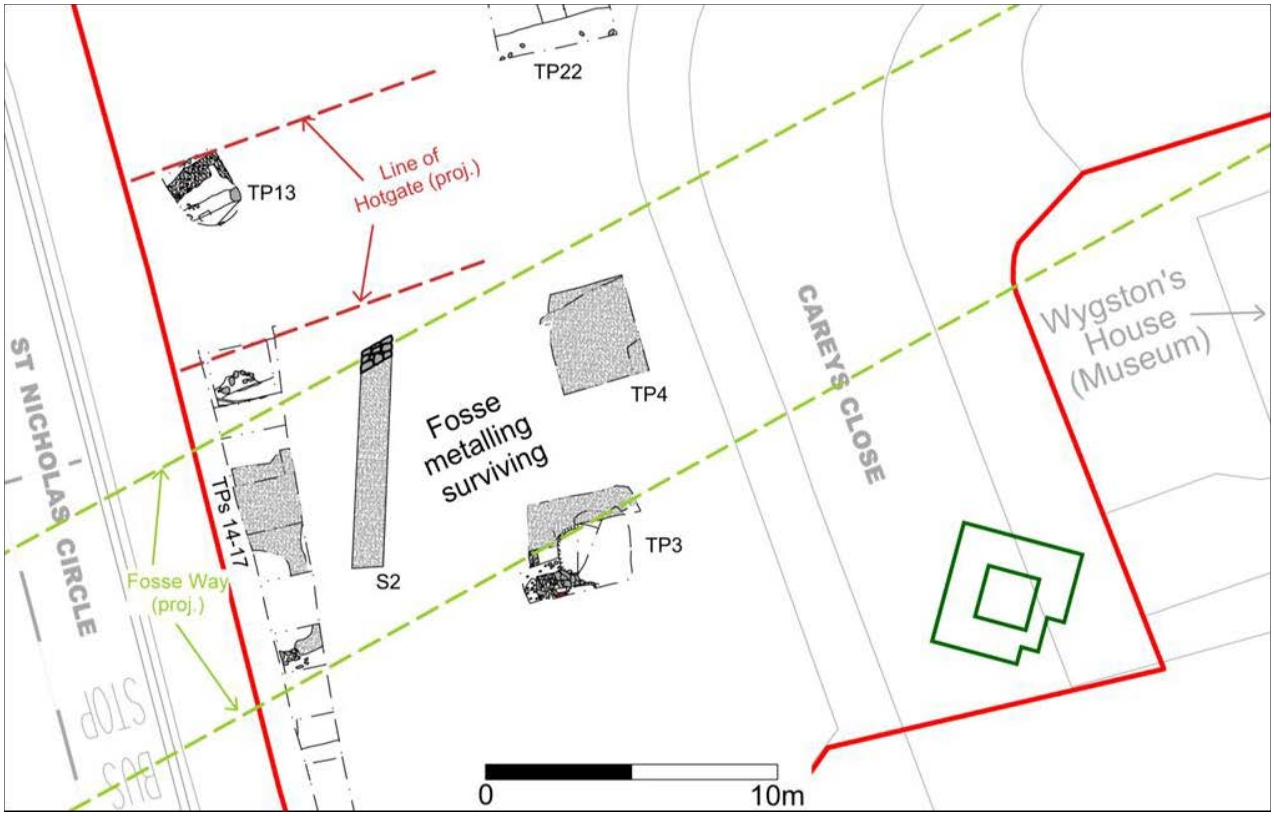

Figure 16 Features identified in south-west area (west of Carey's Close).

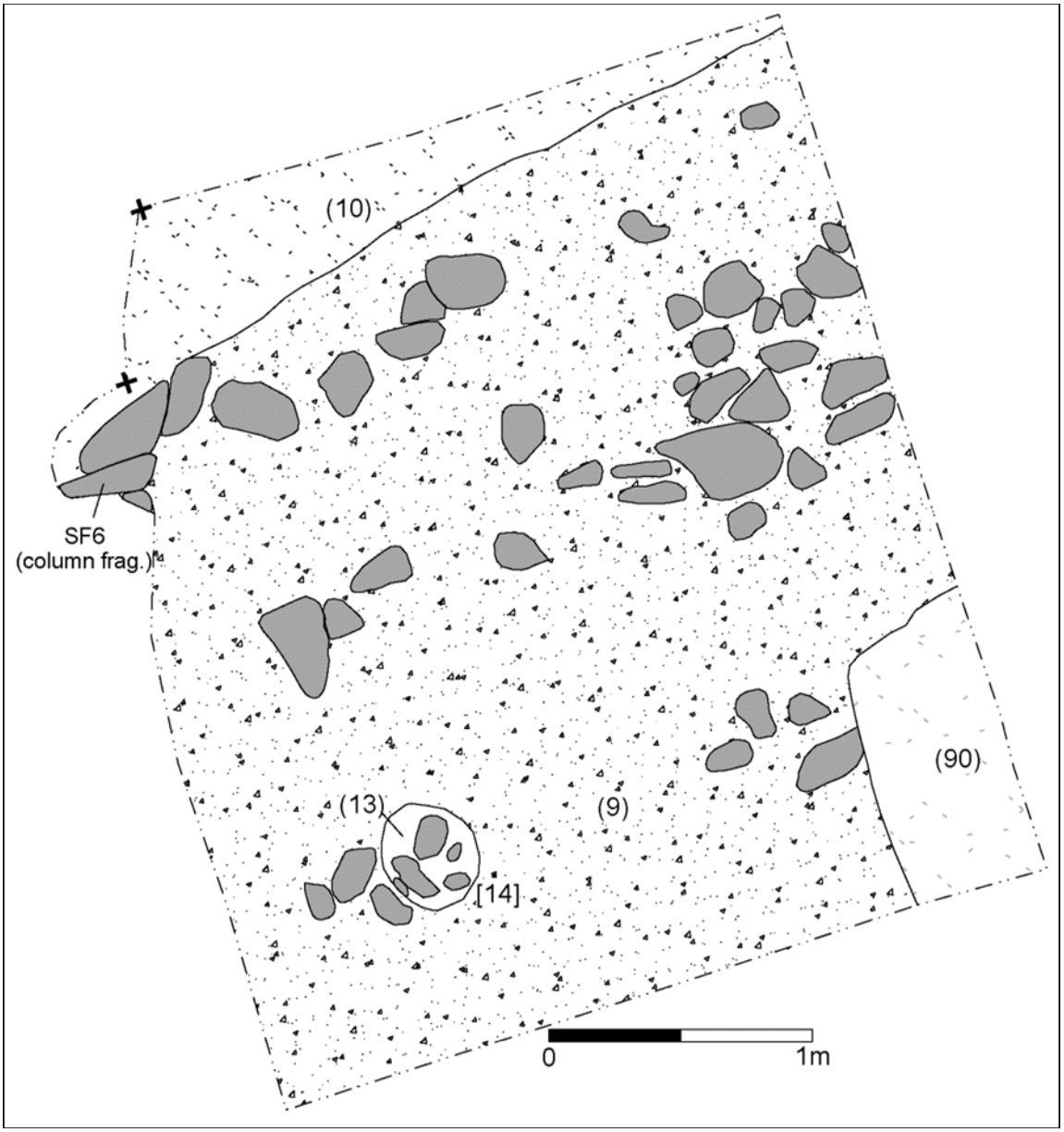

Figure 17 Features exposed in Tree-pit TP4, preliminary plan.

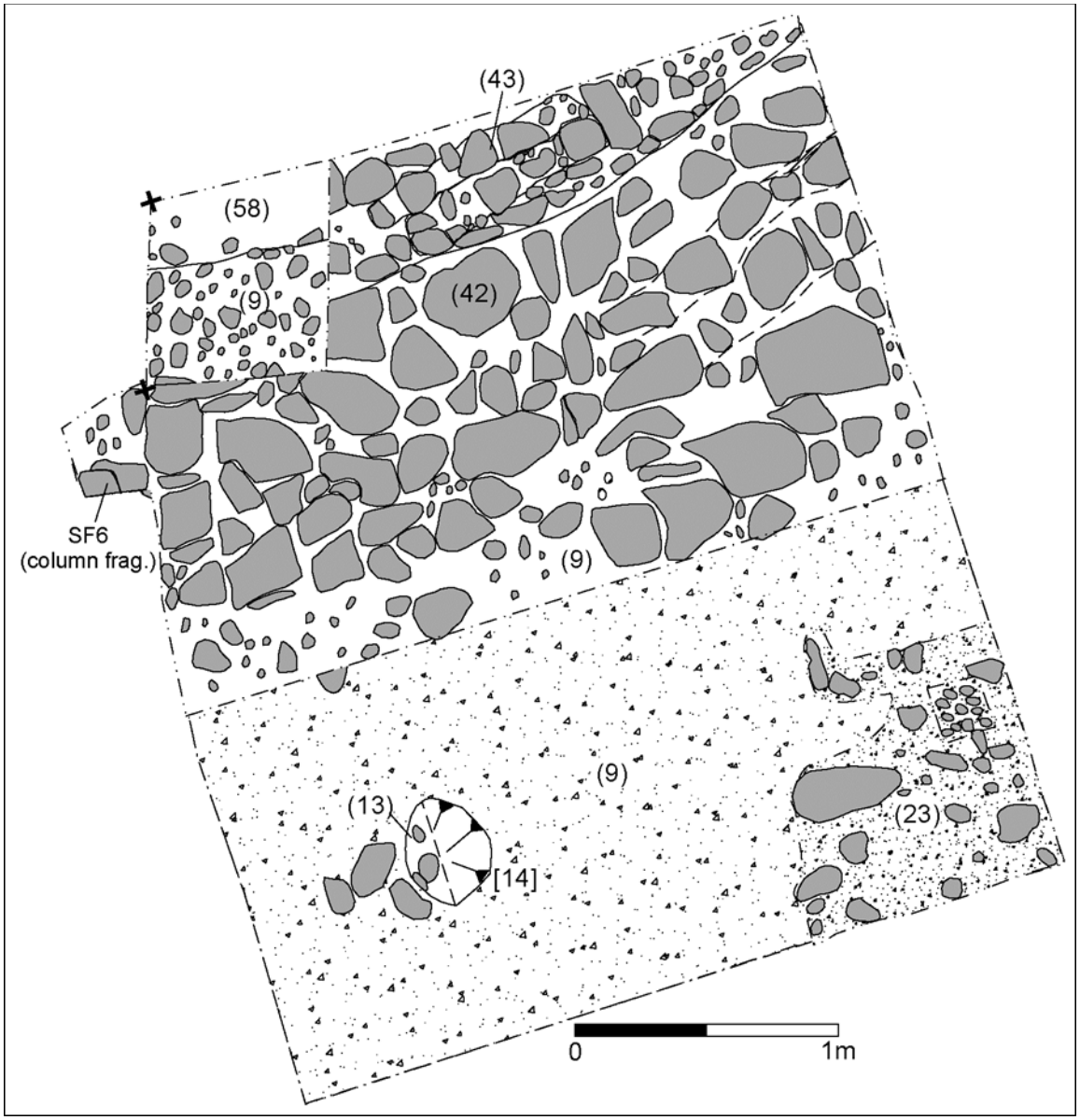

Figure 18 Features exposed in Tree-pit TP4, Secondary plan.

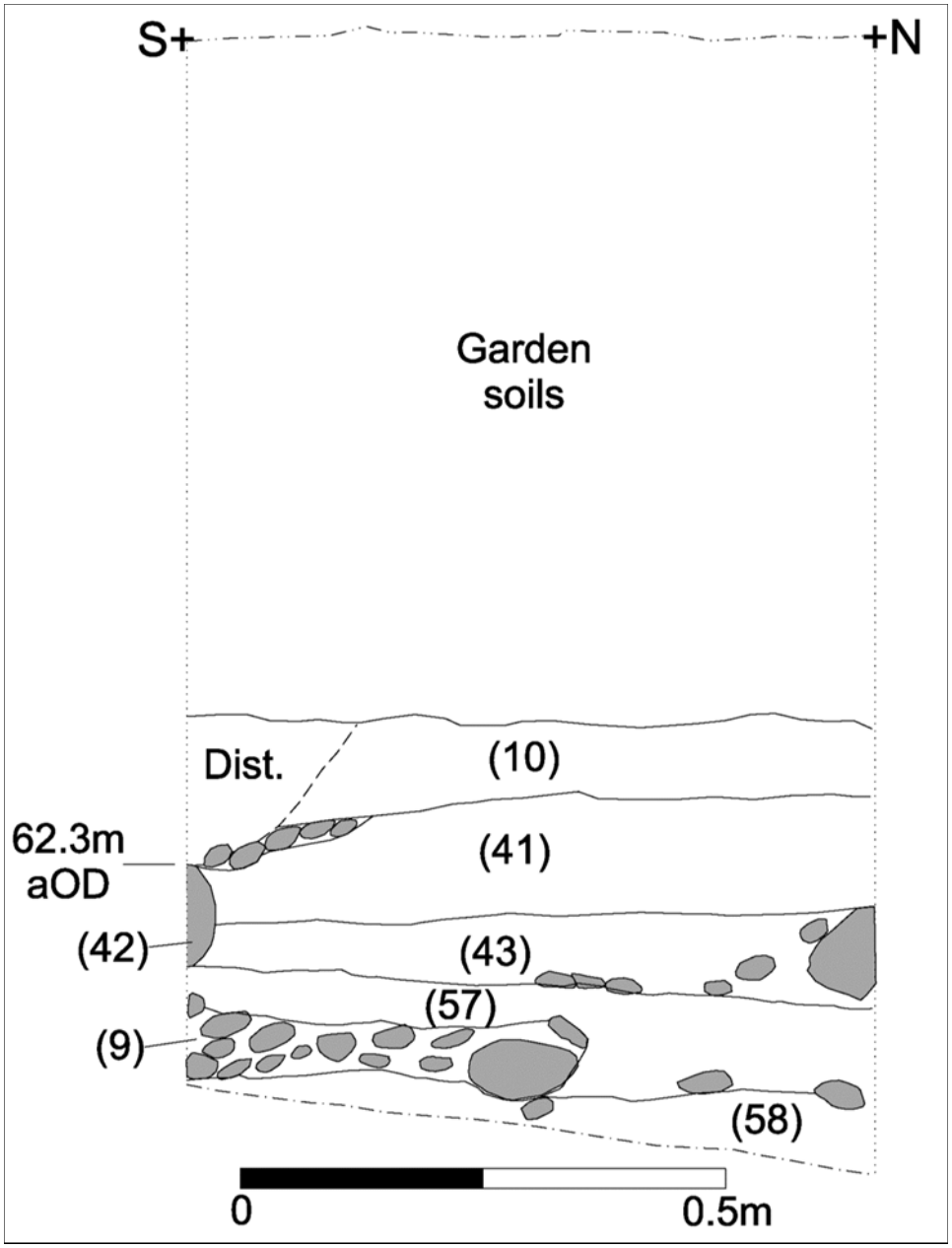

Figure 19 North-west section of Tree-pit TP4.

Figure 20 Rubble on north edge of Fosse Way, TP4.

Figure 21 Tree-pit TP3 after initial cleaning (pre-ex).

Figure 22 Tree-pit TP4 after initial cleaning (pre-ex).

Figure 23 Tree-pit TP4 surface (23) on Fosse Way surviving.

The southern edge of the Fosse Way metalling context (22) was defined in tree-pit TP3 to the south by a series of features (Figure 21, Figure 24). The distance from this south edge to the north edge of the metalling as observed in service trench S1 and tree-pit TP4 is *c*.8.9m. This would indicate the width of the Fosse Way here, at least where it is demarcated by wall lines. The features on the south side of the Fosse Way included a roadside ditch cut [44], a wall line [59] (60) parallel to and cutting the ditch, and then to the south the corner of a stone building (27) [33] (Figure 26, Figure 27). These features were only sample excavated to characterise them down to the formation depth of the tree-pit. The roadside ditch [44] was over 1m wide and over 0.65m deep filled with silts and slumped metalling (context 29). The wall line [59] (60) consisted of a 0.8m wide granodiorite clay bonded footing, over 0.15m deep. Only a 0.4m length of this footing was observed. Stone building (27) [33] to the south consisted of a further clay bonded granodiorite footing, 0.8m wide, and at least 0.4m deep. An east-west stretch of this walling ran for 1.1m then at the west there was a return continuing for 0.8m into the south baulk (Figure 25). Within the internal corner of this structure, context (53) was a sand levelling layer with a flagstone measuring 0.34m by more than 0.15m and 0.04m thick, and possibly indicating a floor level. Externally, to the west of the structure, was a series of layers, contexts (46) to (50) and (56). These represented a series of thin occupation levels of total observed depth 0.27m, with context (48) incorporating a fine surface of gravel metalling (Figure 25). This occupation evidence continued below the formation level of the tree-pit. The pottery evidence from tree-pits 3 and 4 in particular consists of a high proportion of mortaria, with a suggestion that there may have been commercial activity nearby.

Figure 24 Features identified in Tree-pit TP3.

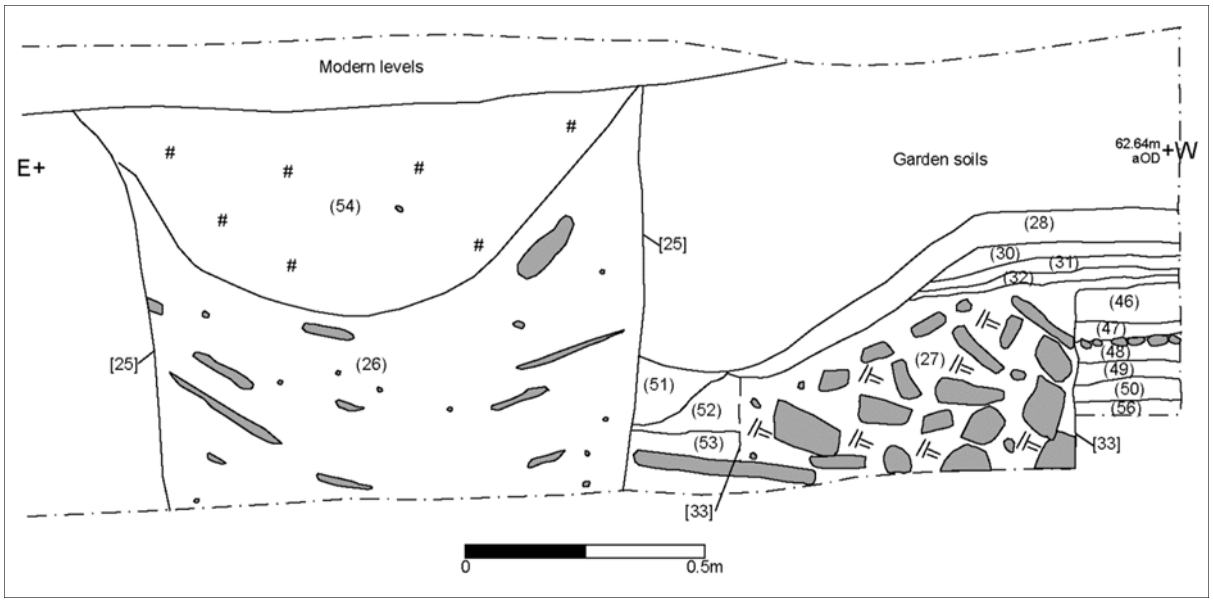

Figure 25 Section at south-west end of Tree-pit TP3.

Figure 26 Roman stratigraphy in the south-west area of TP3.

Figure 27 Roman stratigraphy in the south-west area of TP3 (cont'd).

The Roman levels were cut by a series of medieval pits and later truncations. Pit [25] (26) (54) was characterised most fully as removal of some of the fills allowed the sides to be examined where cutting the Roman stratigraphy. This pit was sub-rounded in plan, *c.*1.2m in diameter, and over 0.8m deep. The pottery indicates a 12th- or perhaps 13th-century date for infilling. Fill (26) in particular had a rich assemblage of refuse and some cessy material in it with bones and plant material indicating human waste was deposited here. Some slate fragments indicate it was probably originally lined. The other pits exposed in tree-pit TP3 may have been primarily quarry pits as their fills were more sterile. Pit [38] to the north was larger, *c.*1.75m across and probably near circular in plan, and cut the Fosse Way metalling. The top fill (35) was 0.16m deep, and below this, the lower fill (37) was over 0.29m deep (not bottomed). Pits [21] and [40] also cut the Fosse. Pit [21] (17)-(20) to the east was probably 1.3m in diameter and over 0.6m deep. The fills were occasionally charcoal-rich but otherwise sterile. Pit [40] (39) was *c.*1.4m diameter and over 0.3m deep, with the upper fill (39) being a dark stony sandy clay. The east of the tree-pit had a 2.25m length of stone and brick walling running north-south (context 11), to the east of which again was modern demolition backfill.

Tree-pits TP13-TP17

These were sited along the west edge of the Jubilee Square works (Figure 5). Tree-pit TP13 was the more northerly of these tree-pits which exposed archaeological material, and was located in the south end of the northern of the two long planters. Tree-pits to the north in this planter only exposed modern disturbance, with this frontage exhibiting some Victorian cellaring. Tree-pit TP13 exposed a series of metalled surfaces which are on the line of the medieval east-west street Hotgate. The top of these surfaces was observed at a depth of 1.04m from previous ground level (i.e. and at 62.86m aOD, Figure 31). Layers (68), (70) and (72) were stone surfaces, each up to 0.14m thick and comprised of granodiorite fragments, reused Roman building materials and river cobbles (Figure 28, Figure 29). Between these surfaces was a series of greenish silty layers, quite mixed and with occupation material mixed in. Pottery from these layers was of a 10th or perhaps 11th century date. The greenish layers, and occupation material, including animal bone (some of which was gnawed by dogs), suggests a somewhat insanitary street despite it being central to the medieval town. The total depth of these surfaces and occupation layers was *c*.0.6m. Below these was a greenish-grey loam with frequent granite rubble, potentially the post-Roman dark earth seen elsewhere (e.g. to the east at the Norman Undercroft site at 9 St Nicholas Place, Kipling 2010). This produced pottery of 10th-century date from a layer that was 0.5m thick. Below this in turn was a further metalled surface, potentially of Roman date (context 74, Figure 30). This was just 0.06m thick with a clear surface of river gravels up to 0.04m in a sandy clay bonding. A section excavated through this indicated further occupation layers (75), (76) and (79) continuing down below the formation level. Layer (76) was a dark grey 'greasy' sandy clay, perhaps a make up for the surface above. Layer (75) below was a sandy loam, quite loose gritty and with frequent mortar and building material flecks, and 0.2m thick. Occupation layer (79) below, was over 0.15m thick, a greenish-brown loam with occasional oyster shell. Contexts (74) and (76) produced material of later Roman date (late 3rd – 4th centuries). Context (75) below these was more mixed probably indicating some reworking of earlier deposits.

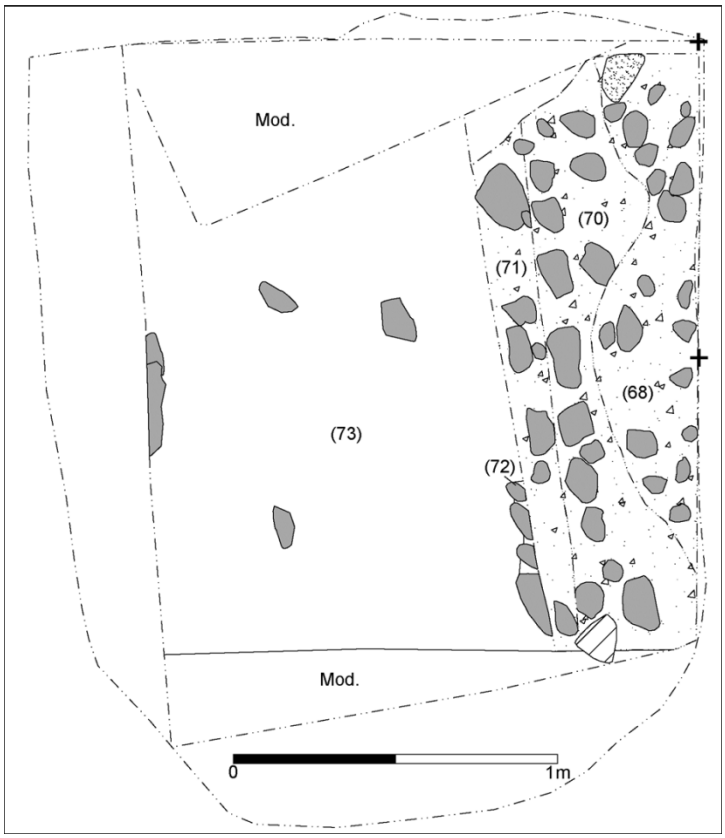

Figure 28 Features initially exposed in Tree-pit TP13.

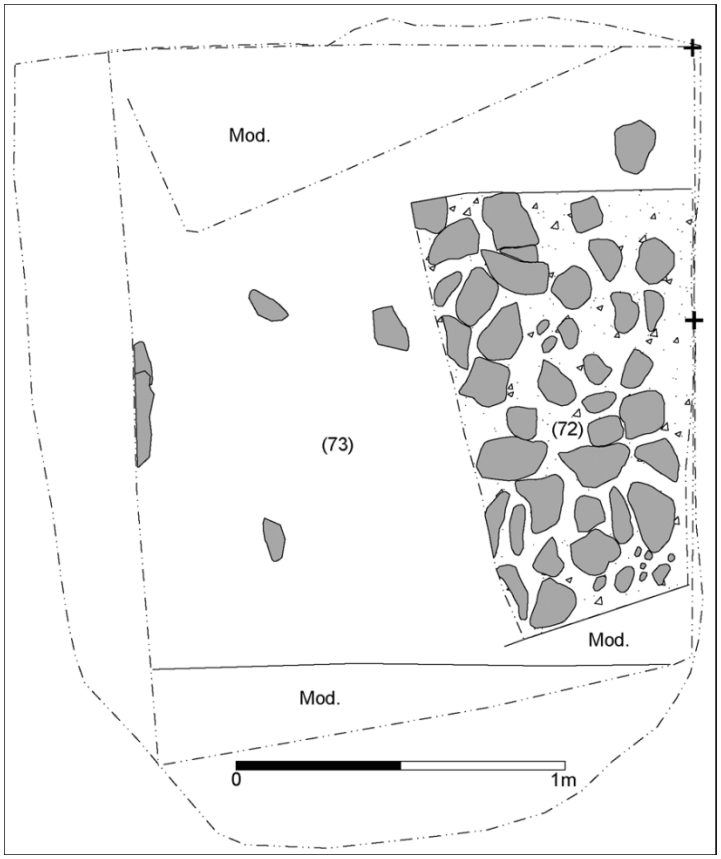

Figure 29 Surface (72) exposed in Tree-pit TP13.

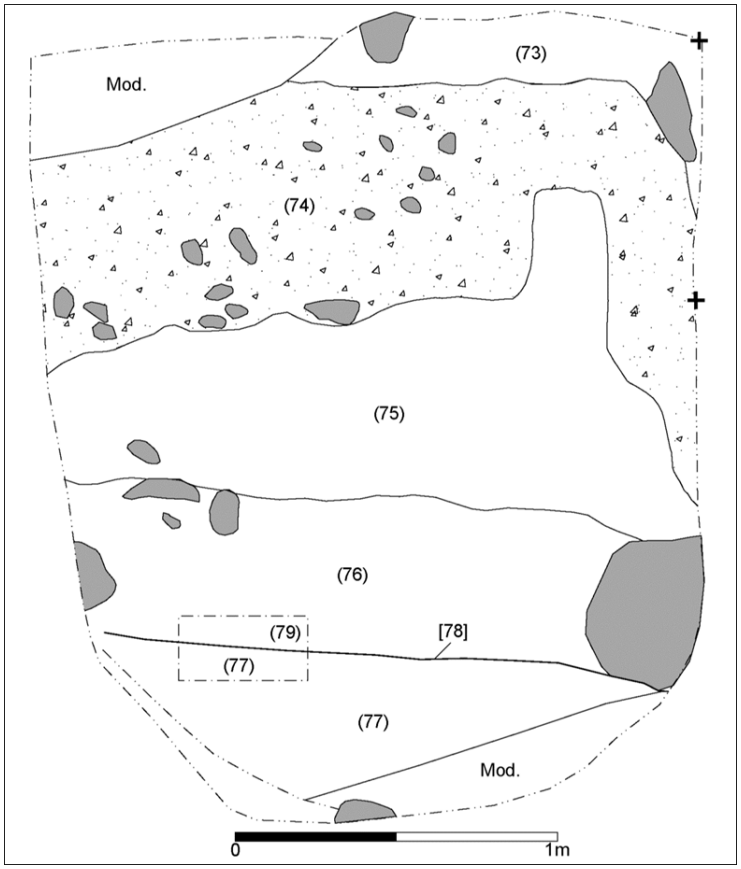

Figure 30 Early surface (74) exposed in Tree-pit TP13.

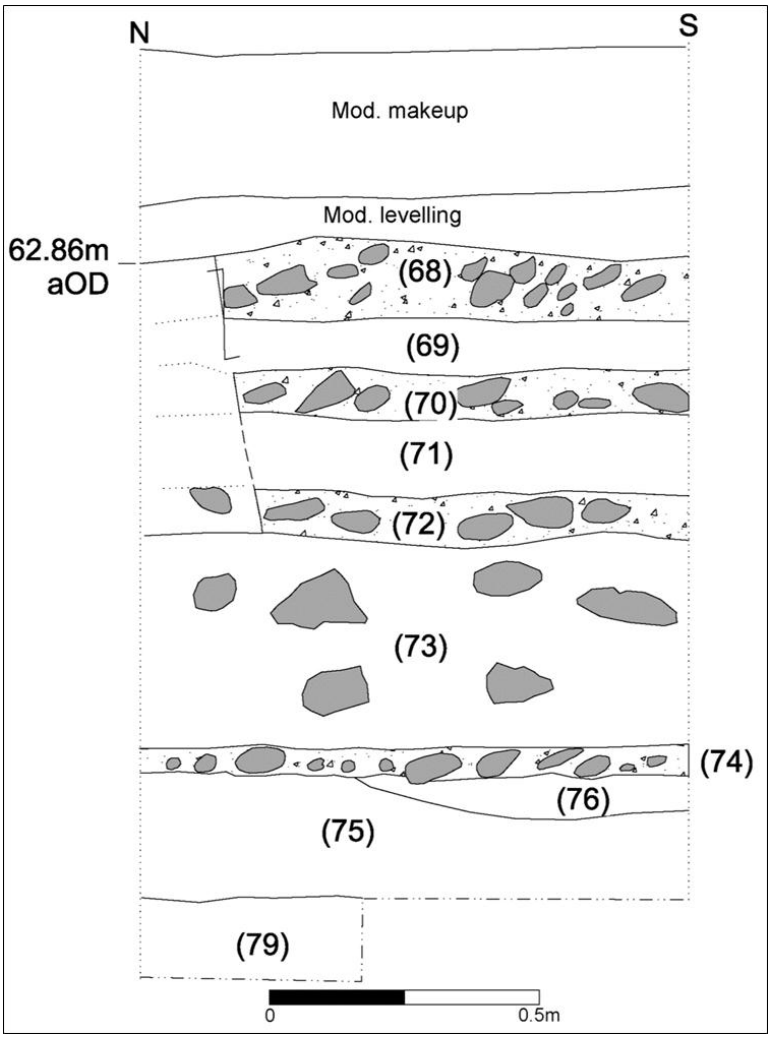

Figure 31 East section of Tree-pit TP13.

Figure 32 Hotgate surfaces in TP13

South of the line of Hotgate, tree-pits TP14-17 crossed the line of the Roman Fosse Way and again TP15-17 indicated that survival of the Fosse metalling was good here, and at a depth of 62.2m aOD (Figure 33, Figure 34). The metalled surface was at the formation level of these tree-pits so was not excavated further (Figure 35). Tree-pit TP14 exposed contexts (62) and (63) very rubbly deposits of garden soil, probably indicating undisturbed deposits in the vicinity. Context (63) produced late Roman pottery. Tree-pit TP17 exposed a short stretch of mortared stonework (66) [67], probably an east-west wall line, cutting the Fosse metalling (Figure 36). This masonry was over 0.6m long, 0.5m wide and with a depth of more than 0.2m. The feature was not fully excavated as it continued below the formation level for the tree-pit. The masonry was granodiorite and sandstone with a bonding of a shelly flecked pink mortar. It is possible this is a continuation of the roadside wall line seen in tree-pit TP3 (context [59] 60).

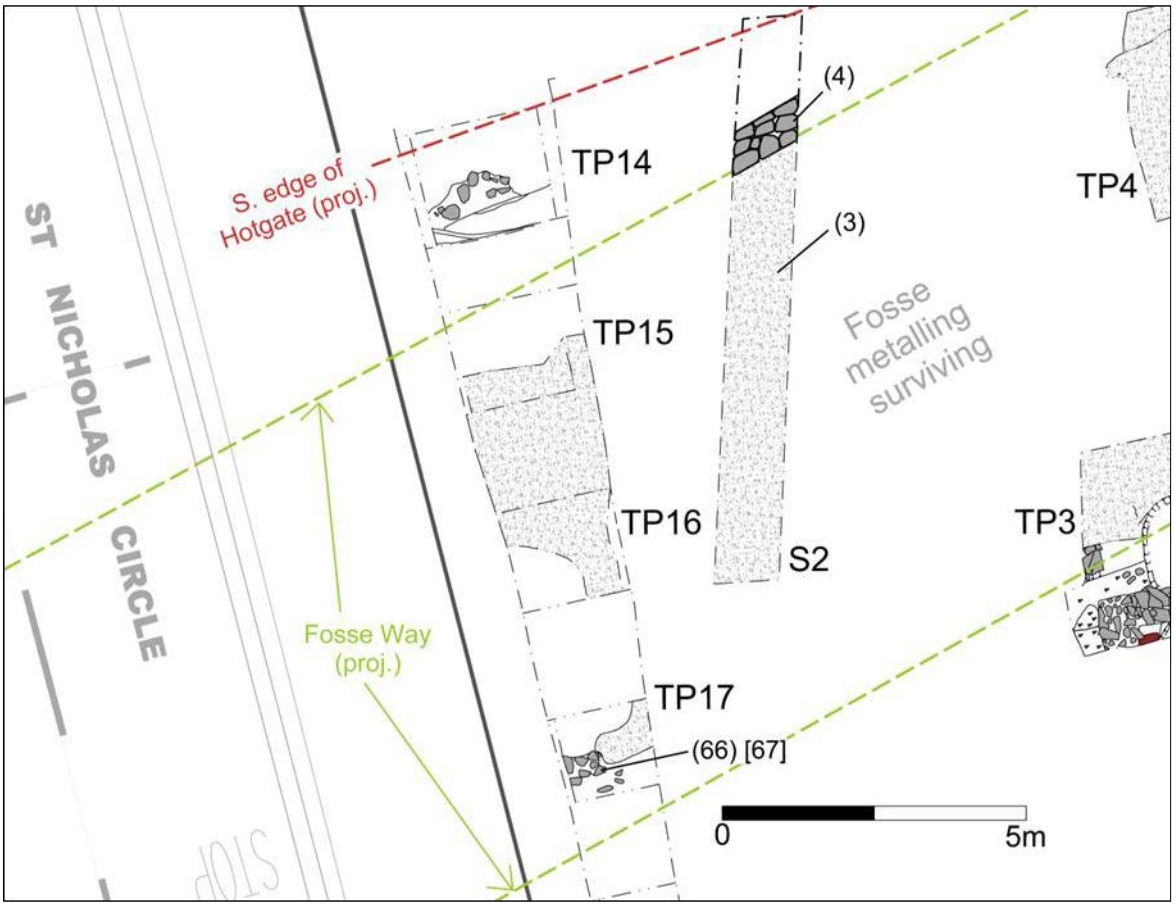

Figure 33 Area plan of features either side of Fosse Way, Tree-pits TPs14-17 and Service Trench 2 (S2). Location of TP3 and TP4 also shown.

Figure 34 TP14 (foreground) – TP18

Figure 35 TP16 Fosse Way metalling.

Figure 36 TP17 wall line (66).

Tree-pit TP19

This was the most substantial tree-pit (5.5m by 5m and 2.2m deep from previous ground level), and was sited on the Applegate frontage just north of Wygston's House (Figure 5, Figure 6). This was an area that had seen preliminary reduced level groundworks (see above), which had exposed two east-west stone wall lines, contexts (7) and (8) running perpendicular to the street. The location of the tree-pit was directly to the south of the south face of wall (8). Excavation of the tree-pit to formation level encountered only modern cellar backfill, with an east-west brick wall dividing the area into two cellars (Figure 37). The 'back' north-south wall of the brick built cellar was also exposed at the west edge of the tree-pit. The cellar brick floor was at a depth of 62.52m aOD. This was removed by machine to allow for adequate drainage for the tree which was to be set here, but removal of the floor only exposed modern levels for its construction, and no deeper excavation was carried out.

Figure 37 Tree-pit TP19 during excavation. Cellar wall at south, and cellar floor being exposed. Looking south-west.

Wall (8) was of very substantial construction (Figure 38). A 4.5m length of this was seen running along the edge of the tree-pit. The wall was 0.45m wide, with an orange shelly sand mortar bonded stonework mostly of granodiorite with some cobbles, the rubble being up to 0.3m by 0.15m and 0.15m and nine courses being visible. The wall was more than 0.75m deep, continuing below the brick floor level and the tree-pit formation depth. Both wall faces were faced. The south (internal) face had render surviving with a pale greyish white limewash. Wall (7), 8m to the south, was very similar in character (Figure 39). A 3m length of this wall was exposed; it was 0.48m wide, and was of the same composition as wall (8). A fragment of brick/tile was recorded in the external (south) face, but this could be residual Roman material rather than indicating a late date, however. The wall was more than 0.55m deep, six courses being visible, and had a lime render on the north (internal) wall. Both wall faces were faced. Built up against the north internal wall and parallel to it was a brick cellar wall. The two stone walls (7) and (8) are probably plot boundary walls representing properties running back from the Applegate frontage (the medieval High Street), and potentially of an earlier rather than later date. It is though perhaps possible they are undercroft walls, as examples of this type of structure have been recorded just to the north (Meek 2000), and on Guildhall Lane to the east (Kipling 2010). The evidence is inconclusive when only this depth of wall was exposed; plot boundaries on the Guildhall Lane site are a similar width apart (*c*.8m), whilst the longer length of the undercroft structure there is larger

at 8.8m internally. If the latter, then this would suggest that the undercroft fronted on to Hotgate rather than Applegate, i.e. walls (7) and (8) represent the front and back of the structure rather than the sides.

Figure 38 Tree-pit TP19, showing stone wall (8), looking north.

Figure 39 Tree-pit TP19, showing stone wall (7), looking south-west.

Test-pit TP22

This was sited slightly to the north-east tree-pits TP14-17, adjacent to Carey's Close (Figure 5, Figure 16). The south edge of the tree-pit exposed east-west deposits representing further Hotgate/Thornton Lane levels. This consisted of a very loamy layered rubbly deposit 1m

wide, not excavated to a greater depth as it was at the formation level of 62.36m aOD. Running perpendicular to this (slightly west of north-south) was context (86). This was a 4m length of grey sandy clay with frequent mortar and rubble, probably a backfilled robber trench. The trench appeared to cut over 1m of garden soils and its alignment was different to that of the Roman street grid (including the forum walls to the north), so it is possibly robbing of a later building. To the north-east of this was a later structure built of large reused unmortared stones, contexts [81] (82), Figure 40b. The stonework was granodiorite, dressed and with post-holes for iron railings. This wall was clearly late. Removal of this structure exposed another wall line a further 0.2m down and a small area of stratigraphy at a level of 1.15m below previous ground level (i.e. at a height of 62.8m aOD). The lower wall [84] (85) was exposed running almost parallel to the east baulk of the tree-pit, could be traced for 2m, was over 0.25m wide, and had a depth of more than 0.5m (Figure 40c, Figure 41). It was also on a similar alignment to robber (86) to the west. The wall-build was of granite rubble up to 0.3m by 0.1m and 0.1m, neither mortared nor clay-bonded, but at least two stones wide in profile. Between this wall and the robber (86) in the north section a 1m long sequence of stratigraphy was recorded (Figure 40b), including (83) an occupation layer of dark grey silt with charred Roman tile fragments perhaps representing a disturbed floor level. Separating this stratigraphy from garden soil and loose silty deposits to the south was context (87), also 1m in length (east-west) and 0.3m wide. This consisted of dark grey sandy silt with frequent granodiorite rubble and was probably a wall-footing. This was perpendicular to (86) and possibly related. Fill to the south was a loose backfill possibly indicating the structure was cellared. The level at which the stratigraphy and wall survive suggests that they may possibly be medieval in date, and associated with activity on the Hotgate frontage.

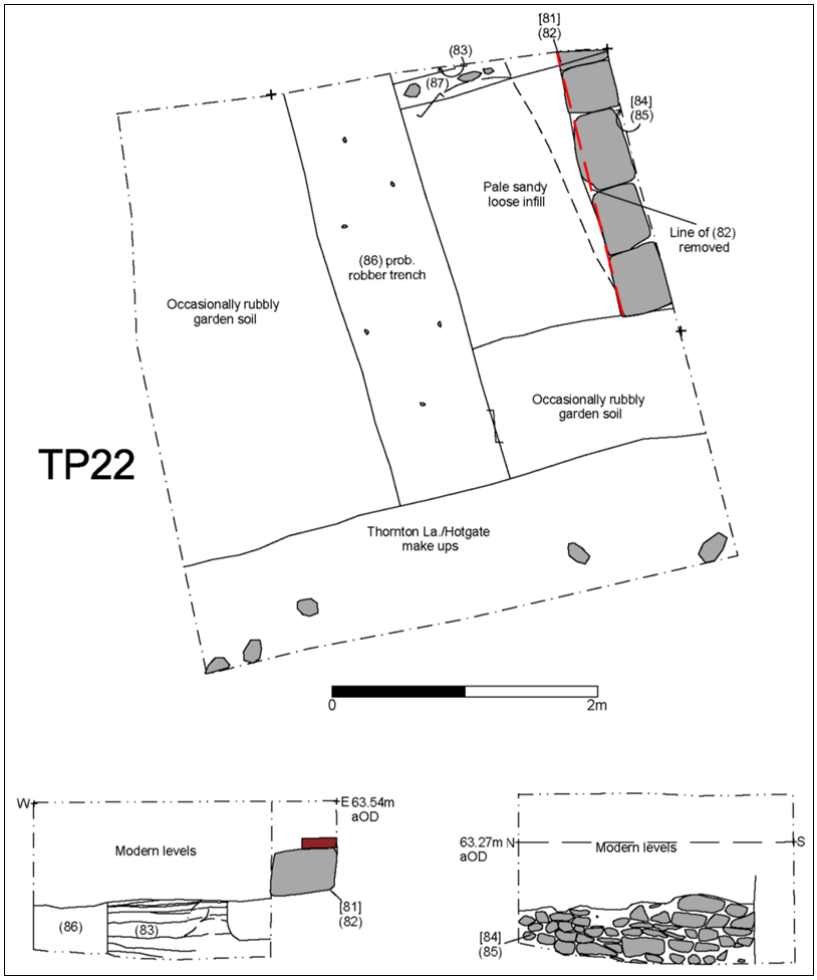

Figure 40 Features exposed in Tree-pit TP22.

Figure 41 TP22 wall line [84] (85), and stratigraphy surviving to left.

Figure 42 TP22 stratigraphy surviving (83etc.), and late wall line [81] (82), to right.

Tree-pit TP24

In the north-west planter, tree-pit TP24 was excavated only through modern levels (Figure 5). However, at a depth of *c*.1.5m (i.e. at a height of *c*.62.3m aOD) a clean yellowish brown silty clay with occasional gravels was identified, potentially the top of undisturbed stratigraphy.

9. Discussion and Conclusions

The watching brief at Jubilee Square, Leicester identified features of Roman, medieval and later date. There was considerable variation in levels at which archaeology survived. The high potential for deeply stratified archaeology on the Applegate frontage was not realised due to the area being previously cellared. However, observation of stone walls either side of the cellaring – probable early property boundaries, and at a depth of just 0.5m below current ground levels (at *c.*64m aOD) indicates that there is good potential for survival of deep stratigraphy outside cellared areas here. Further west, features of Roman and medieval date were identified at levels of between 62.2-62.86m aOD, i.e. at 1.3-1.9m below current levels. These features can be associated with the former roadlines of the Roman Fosse Way, medieval Hotgate and the more recent Thornton Lane, and frontage activity either side of these thoroughfares. The most significant discoveries have been the survival of the Roman

Fosse Way, together with a substantial wall to its north potentially indicating public building works, and to the south of the roadline the north-west corner of a further stone building. On the line of the medieval Hotgate, a series of metalled street surfaces separated by occupation layers perhaps as early as Saxo-Norman in date, indicate a rather unkempt area despite being so close to the town's High Street. Below these levels a probable Roman metalled yard surface was identified. To the north of Hotgate, stratigraphy was identified indicating floor levels and a probable robbed-out building. South of Hotgate, further stratigraphy survived indicating occupation and cess and refuse pit digging presumably back yard activity away from the street frontage.

The monitoring of groundworks on this project has indicated that urban landscaping schemes like Jubilee Square, despite being apparently limited in extent, have the potential to reveal extensive and fragile archaeological evidence. In particular, the work has produced important new information relating to the infrastructure and buildings of the Roman town (the Fosse Way and adjacent structures), the occupation of the town in the early Anglo-Saxon period following the end of Roman occupation (dark earths), the origins of the medieval borough in the late Anglo-Saxon period (Hotgate) and the development of properties on the principal commercial street of medieval Leicester (the medieval High Street, later Highcross Street and Applegate). The archive includes valuable information on the depth and extent of significant deposits to add to the growing body of evidence for this part of the town which will feed into the archaeological deposit model for Leicester as a whole.

10. Archive

The site archive will be held by Leicester City Museums, with the accession no. A14 2013. The archive contains:

8 tree-pit (trench) recording sheets and 1 tree-pit sheet index
24 Watching Brief sheets and site notes
70 Context record sheets and 3 Context Summary sheets
2 Drawing indices and 8 A3 permatrace drawings
Other site indices – 1 Sample Index, 1 Small Finds sheet, 2 Masonry sheets,
2 Photo Index sheets
Thumbnail prints of digital photographs
CD containing digital photographs
Black and white negatives and contact sheet
Unbound copy of this report 2015-003
Finds: 3 boxes

The report is listed on the Online Access to the Index of Archaeological Investigations (OASIS) held by the Archaeological Data Service at the University of York. Available at: http://oasis.ac.uk/

ID	OASIS entry summary
Project Name	Jubilee Square, Leicester
Summary	An archaeological watching brief was carried out as part of the new Jubilee Square open space works at St Nicholas Place, Leicester and on behalf of Leicester City Council. The investigation consisted of the observation of groundworks within the area of a new open space, the groundworks consisting of the planting of trees, new walling, paving and lawns and the diversion of services. Activity on the former Highcross Street/Applegate frontage was largely truncated by modern cellaring. However, features of

	Roman, medieval and later date were found during the watching brief, with archaeology being concentrated to the west of Carey's Close. The Roman evidence included the Fosse Way road as it runs through the town to the south of the forum site. Either side of this road, parallel wall-lines and roadside ditches were exposed. On the north side of the road further substantial walling of a type suggesting public works may be the forum insula XXII precinct wall. Adjacent to the south edge of the Fosse way was the north-west corner of a stone building with associated floor make ups. Sealing the Roman activity, a 'dark earth' of Saxon and later date was also identified in some areas. The medieval activity included a series of surfaces and occupation layers most likely levels for the medieval Hotgate street, pottery evidence for these being of Saxo-Norman date. Further medieval evidence included stone walling, occupation levels, and pit activity, including a probable 12th century pit with cess deposits. Later activity included stone and brick structures with much reuse and reworking of Roman and later materials being observed, the line of Thornton Lane being confirmed across site, and two wells one each of stone and brick construction.
Project Type	Watching Brief
Project Manager	Richard Buckley
Project Supervisor	Wayne Jarvis
Previous/Future work	---
Current Land Use	Car parking, landscaping
Development Type	Public open space
Reason for Investigation	NPPF Section 12 Conserving and Enhancing the Historic Environment
Position in the Planning Process	Condition
Site Co ordinates	SK 583 044
Start/end dates of field work	October 2013 – September 2014
Archive Recipient	Leicester City Museums
Study Area	6000 sq m.
Associated project reference codes	Acc No. A14 2013

11. Publication

A summary of the work will be submitted for publication in a local archaeological journal in due course. The report has been added to the Archaeology Data Service's (ADS) Online Access to the Index of Archaeological Investigations (OASIS) database held by the University of York.

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14. The Finds

Roman Pottery by Elizabeth Johnson

Assemblage size and condition

A stratified assemblage comprising 103 sherds of Roman pottery weighing 1.473kg was retrieved from the excavations, along with a further 1.048kg of re-deposited material from post-Roman layers. The average sherd weight of 14.3g suggests reasonably good levels of preservation overall.

Methodology

The material was identified according to the Leicestershire Museums Fabric Series (Pollard 1994), as shown in the table below.

Table 1: Summary of Leicestershire Museums Fabric Series (Pollard 1994, 112-114).

Fabric Code:	**Fabric Type:**
SG/CGSam	South/Central Gaulish samian ware
C2/3NV	Nene Valley colour-coated wares
C12	"Rhenish" wares from Central Gaul and Trier
C13	Oxfordshire red-brown colour-coated wares
MO4	Mancetter-Hartshill mortaria
MO6	Nene Valley mortaria
BB1/BB2	Black Burnished wares
CG1	Shelly wares
OW5	Medium sandy oxidised wares
WS2	Fine and fine sandy white-slipped wares
WS4	Coarse sandy white-slipped wares
GW1	Medium and coarse sandy grey wares "BB1 imitations"
GW4	Nene Valley grey ware
GW5, 6	Medium and coarse sandy grey wares

Quantification was by sherd count and weight (grams). Vessel forms were assigned where diagnostic sherds allowed. The complete dataset was recorded and analysed within an Excel workbook, which comprises the archive record. References to percentages relate to percentage sherds unless otherwise stated.

Stratified Features

The stratified pottery was recovered from four tree-pit areas with the addition of one context from the south-west watching brief area of the site.

Tree-pit TP3

Contexts: [33] (27); [44] (29), (55); [60] (59); (32); (48).

Nineteen sherds (462g) of pottery were recovered from features within Tree-pit TP3. Two sherds of shelly ware were recovered from a wall adjacent to the Fosse Way [33] (27). Unfortunately they are not particularly datable and could date any time from the 2nd century onwards. However the layer (48), below [33], contained a shelly ware jar and a Nene Valley colour-coated ware beaker, suggesting a late 2nd-early 3rd century date. Above (27) [33], the pottery from a possible occupation layer (32), suggests a later date. Three separate mortaria were recovered from this context, including two from Mancetter-Hartshill with hammerhead rims. One has traces of orange paint and is comparable to an example from Vine Street in Leicester dating to the later 3rd or 4th century (Johnson 2009, 76, fig.29.111). The other is comparable to Gillam form 285, typologically dated to the 4th century (Gillam 1968, 29, 69 fig.29).

As with [33] (27), only two small sherds of pottery were recovered from [60] (59); a wall footing also at the side of the Fosse Way. Both sherds were from white-slipped ware flagons dating to the 2nd century. The roadside ditch fills [44] (29) and (55) contained pottery mostly dating within the 2nd century, the latest datable vessels comprising a beaker in (29) dating to the later 2nd-early 3rd century, and a mortarium in (55) dating from the mid-2nd to the early 3rd century. Both vessels types are from the lower Nene Valley and are common in Leicester.

Tree-pit TP4

Contexts: (9), (10), (41), (57), (58).

The largest concentration of stratified pottery was recovered from Tree-pit TP4, comprising 41 sherds weighing 471g. All the features are layers over or underlying the Fosse Way. The lowest layer in the sequence is (58), from which five sherds were recovered including two colour-coated ware beakers. One is a Central Gaulish "Rhenish" ware beaker and the other is from the lower Nene Valley. Both indicate a mid/late 2nd-early 3rd century date (Howe *et al* 1980, 16; Tyres 1996, 137-138). Above this, seven sherds of pottery representing two vessels were recovered from (9), a layer of metalling on the Fosse Way. The first is a Central Gaulish samian ware mortarium Form 45, dating to the later 2nd century (Webster 1996, 55-56). The other vessel is a mortarium from Mancetter-Hartshill with a hammerhead rim dating from the middle of the 3rd to the middle of the 4th century (Gillam form 283) (Gillam 1968, 29, 69 fig.29). Overlying (9), make-up layer (57) revealed only five sherds of pottery including a samian ware Drag.33 cup, a Black Burnished ware jar and a lower Nene Valley colour-coated ware beaker. All could date within the 2nd century however the beaker suggests a late 2nd-early 3rd century date. Layer (41) overlies the Fosse Way and the presence of a Black Burnished ware grooved rim bowl with intersecting arc decoration suggests a date from the late 2nd to 3rd century (Holbrook and Bidwell 1991, 109-110).

The most substantial group of pottery comprising 21 sherds, was recovered from the uppermost layer (10), a greenish-silty layer overlying the Fosse Way. The group is quite mixed, comprising typical 2nd century wares (grey, white, shelly, samian and Black Burnished wares), alongside later colour-coated wares. Six colour-coated vessels were present including a "Rhenish" ware beaker from Trier dating from the later 2nd century to the middle of the 3rd century (Tyres 1996, 138-139), and an Oxfordshire red-brown colour-coated ware bowl or dish dating to the 4th century (Young 1977, 133-134). The remaining four vessels are all from the lower Nene Valley, comprising two folded funnel necked beakers dating to the mid-3rd century, a flagon with roulette banded decoration, and a bowl or dish dating to the 4th century (Howe *et al* 1980, 18-19, 22-26).

Tree-pit TP13

Contexts: (74), (75), (76).

The second largest concentration of pottery was recovered from Tree-pit TP13, with 38 sherds (502g) found within three layers. Twenty sherds were retrieved from surface (74), comprising a Nene Valley colour-coated ware dish, a Black Burnished ware bowl and a Mancetter-Hartshill mortarium, along with some shelly and grey ware. The colour-coated ware dish dates to the 4th century (Howe *et al* 1980, 24-25), whilst the Black Burnished ware bead and flange bowl dates from *c.*AD270 onwards into the 4th century (Holbrook and Bidwell 1991, 109-110). The mortarium is a hammerhead form with traces of red paint visible on abraded surfaces. This also probably dates to the later 3rd or 4th century. Layer (76) lies underneath (74), with the presence of a Black Burnished ware jar and Nene Valley colour-coated ware beaker suggesting a 3rd century date.

A further 14 sherds of pottery were recovered from the lowest layer (75), and as with layer (10) above, the pottery is fairly mixed with 2nd century grey, shelly and Black Burnished wares found alongside later colour-coated wares. All the colour-coated wares appear to be from the lower Nene Valley industry and comprise a dish, castor box lids and beakers dating to the 3rd and 4th centuries. One of the castor box lids shows signs of sooting after initial breakage.

Tree-pit TP14

Contexts: (63), (65).

Only three sherds (26g) of pottery were recovered from two layers within Tree-pit TP14. A Nene Valley colour-coated ware flagon with white painted and roulette band decoration suggests a 4th century date for layer (63). A single sherd of Black Burnished ware was recovered from (65). The vessel is a plain rimmed dish with intersecting arc decoration. This form is not closely datable as it appears during the second half of the 2nd century and continues in production until the end of the Black Burnished ware industry in the 4th century (Holbrook and Bidwell 1991, 111-112).

South-West Watching Brief Area

Context: (3).

Two sherds (12g) from a South Gaulish samian ware dish or bowl were recovered from (3), a layer of metalling on the Fosse Way. A late 1st century date is most probable, though South Gaulish vessels continued to be imported into the very early part of the 2nd century.

Discussion

The earliest datable material was recovered from the South-west watching brief area, comprising late 1st century samian ware from (3). Apart from this, the material appears to date from the 2nd century onwards, with most dating from the later 2nd-early 3rd century through to the 4th century.

The proportion of imported (10.7%), local (29.1%) and regional (60.2%) wares, is fairly typical of an assemblage from Leicester dating to the 3rd or 4th centuries (Johnson 2009, 90-91). Samian ware, mostly from Central Gaul, accounts for almost all the imported wares, the exception being the two "Rhenish" ware beakers from Central Gaul and Trier. Grey and shelly coarse ware jars make up the local component, whilst colour-coated wares, Black Burnished wares and mortaria are the significant regional wares. The quantity of colour-coated and Black Burnished wares is as would be expected for an assemblage of this date however, there appears to be a disproportionate amount of mortaria. Mortaria would usually account for between 1% and 3% of an assemblage from Leicester, but here we have 18.4%. This does seem inexplicably high. Even at the Vine Street courtyard house, the highest proportion found in association with the peak of activity at the site was 8% (*Ibid*, 96). The sources of these vessels are Mancetter-Hartshill and the Nene Valley, which are the two main suppliers of mortaria to Leicester during the 3rd and 4th centuries and there is nothing unusual about the vessels individually. It is possible they represent commercial rather than domestic activity, however these excavations were small scale and additional work would be necessary to explore this idea.

Summarised Pottery Catalogue

Area	Cont	Fabric	Form	Ves part	Sherds	Weight (g)	Dating
SW	3	SGSam	Bowl/Dish	Body	2	12	late1st-early2ndC
TP4	9	CGSam	Mortarium	Body	4	56	late2ndC
TP4	9	MO4	Mortarium	Rim	3	69	3rdC+
TP4	10	BB1	Jar	Body	3	22	2ndC+
TP4	10	CGSam	Bowl/Dish	Body	2	22	2ndC
TP4	10	C13	Bowl/Dish	Body	1	9	late3rdC-4thC
TP4	10	C3NV	Beaker	Rim	1	14	mid3rdC
TP4	10	C2NV	Beaker	Body	1	7	mid3rdC
TP4	10	C2NV	Flagon	Body	1	15	late2nd-3rdC+
TP4	10	C3NV	Bowl/Dish	Body	1	12	4thC
TP4	10	C12	Beaker	Body	1	1	late2nd-mid3rdC
TP4	10	WW2	Flagon	Body	2	7	2ndC+

TP4	10	CG1	Jar	Body	1	24	2ndC+
TP4	10	BB2	Bowl	Rim	1	31	mid-late2ndC
TP4	10	GW3	Jar	Base	2	36	2ndC+
TP4	10	GW5	Jar	Body	3	53	2ndC+
TP4	10	GW5	Jar	Body	1	4	3rdC+
TP3	27	CG1	Jar	Body	2	55	2ndC+
TP3	29	SGSam	Bowl	Body	1	14	late1st-early2ndC
TP3	29	C2NV	Beaker	Body	1	8	late2ndC+
TP3	32	MO4	Mortarium	Rim	1	81	mid3rdC+
TP3	32	MO6	Mortarium	Body	1	34	mid2ndC+
TP3	32	MO4	Mortarium	Rim	1	39	4thC
TP3	32	OW5	Jar	Base	1	10	2ndC+
TP4	41	CGSam	Bowl/Dish	Body	1	14	2ndC
TP4	41	BB1	Bowl	Rim	1	40	late2nd-3rdC
TP4	41	GW5	Jar	Body	1	8	2ndC+
TP3	48	CG1	Jar	Body	3	85	2ndC+
TP3	48	C2NV	Beaker	Base	1	12	late2nd-early3rdC+
TP3	55	MO6	Mortarium	Rim	2	96	mid2nd-early3rdC
TP3	55	WW2	Flagon	Body	1	5	2ndC
TP3	55	GW1	Bowl/Dish	Base	1	4	2ndC+
TP3	55	GW5	Jar	Body	1	15	2ndC+
TP4	57	CGSam	Cup	Body	1	3	2ndC
TP4	57	C2NV	Beaker	Body	1	1	late2nd-early3rdC+
TP4	57	BB1	Jar	Body	2	6	mid2ndC+
TP4	57	GW5	Jar	Body	1	6	2ndC+
TP4	58	C12	Beaker	Body	1	1	mid2nd-early3rdC
TP4	58	C2NV	Beaker	Body	1	4	late2nd-early3rdC+
TP4	58	GW3	Jar	Rim	3	6	2ndC+
TP3	59	WS2	Flagon	Body	1	2	2ndC
TP3	59	WS4	Flagon	Body	1	2	2ndC
TP14	63	C3NV	Flagon	Body	1	10	4thC
TP14	63	BB1	Jar	Body	1	5	mid2ndC+
TP14	65	BB1	Dish	Rim	1	11	mid2ndC+
TP13	74	C2NV	Dish	Rim	5	98	4thC
TP13	74	MO4	Mortarium	Rim	8	116	3rd-4thC
TP13	74	CG1	Jar	Body	1	8	2ndC+
TP13	74	BB1	Bowl	Rim	1	9	late3rd-4thC
TP13	74	GW3	Jar	Body	2	15	2ndC+
TP13	74	GW5	Jar	Rim	3	33	2ndC+
TP13	75	MO6	Mortarium	Body	1	13	mid2ndC+
TP13	75	C2NV	Dish	Rim	1	27	4thC
TP13	75	C2NV	Lid	Rim	2	32	3rdC+
TP13	75	C2NV	Beaker	Body	3	16	late2nd-early3rdC+
TP13	75	CG1	Jar	Body	3	35	2ndC+
TP13	75	GW4	Bowl/Dish	Body	1	8	mid2ndC+
TP13	75	BB1	Bowl/Dish	Body	1	4	mid2ndC+
TP13	75	GW6	Jar	Body	1	11	2ndC+
TP13	75	C3	Beaker	Base	1	39	3rdC+
TP13	76	MO4	Mortarium	Body	2	22	2ndC+
TP13	76	BB1	Jar	Rim	1	11	3rdC
TP13	76	C3NV	Beaker	Body	1	5	3rdC

Post-Roman Pottery and Ridge Tile by Deborah Sawday

The Finds

Methodology

The pottery and tile was examined under a x20 binocular microscope and catalogued with reference to the guidelines set out by the Medieval Pottery Research Group, (MPRG 1998), (MPRG 2001) and the ULAS fabric series (Sawday 2009a-c).

The Ceramic Evidence

The stratified pottery comprised 79 sherds, weighing 1.687kg, with a vessel rim equivalent of 0.8615, (calculated by adding together the circumference of the surviving rim sherds, where one vessel equals 1.00). Part of a roof tile and an unstratified object, either pottery or roof furniture, (plate 1) were also recorded. The results are shown below (tables 1-3).

Table 2: The stratified medieval pottery and ridge tile fabrics.

Fabric	**Common Name/Kiln & Fabric Equivalent where known**	**Approx. Date Range**
ST3-2	Stamford ware – coarse/fine fabrics E/F, H A/D	*c*.850/900-12th C.
LI	Lincoln Kiln type/Lincoln late Saxon Shelly ware (2)	*c*.870–early 12th C.
RS	Reduced Sandy wares-? Local (3)	*c*.850-*c*.1400
PM	Potters Marston ware - Potters Marston, Leicestershire (4)	*c*.1100-*c*.1300/50+
SP4	Splashed ware - ?Leicester (5)	*c*.1100-1250
CS	Coarse Shelly - Northampton fabric T1/2, T2, (11) Northants CTS 330 (6)	*c*.1100-1400
CC1	Chilvers Coton A/Ai, Warwick CTS WW01,?WW012, ?SQ51, (7)	*c*.1250-1400
NO3	Nottingham Light Bodied/Reduced Green Glazed ware NOTGL/NOTGR (8)	Early/mid 13th *c*.1350

(1) Kilmurry 1980, Leach 1987	(5) Davies and Sawday 1999
(2) Young *et al* 2005	(6) Northants CTS.
(3) Davies and Sawday 1999	(7) Mayes & Scott 1984, Soden & Ratkai 1998
(4) Sawday 1991	(8) Nailor & Young 2001, Nailor 2005

Table 2: The stratified medieval pottery and tile site totals by fabric, sherd/fragment numbers and weight (grams).

Fabric	**Common Name**	**Sherds**	**Gr**	**EVES**	**Av. Sherd weight**
POTTERY					
LI	Lincoln/Lincs Shelly ware	1	6	0.052	
ST3-2	Stamford ware	8	81	0.010	10.12
RS	Reduced Sandy ware	2	50		25.0
PM	Potters Marston	62	1293	0.6495	20.85
SP4	Splashed ware 4	1	164		164.00
CS	Coarse Shelly	4	66	0.15	16.5
NO3	Nottingham Green Glazed ware	1	27		
	Site Total	79	1687	0.8615	21.25
RIDGE TILE					
CC1	Chilvers Coton A ware	1	37		
	Site Total	1	37		

The Stratigraphic Record

Bearing in mind the limitations inherent in such small assemblages in terms of dating evidence; the pottery has been divided into broad ceramic phases based on the stratigraphy and the range of pottery fabrics and vessel forms present.

Late Saxon – Early Medieval – phase 7-8

Possible Hotgate surfaces and make up layers: contexts 68, 69, 71, 73.
Assemblage: 8 sherds, 85 grams, 0.062 EVES, average sherd weight 11.12 grams.

This small assemblage was mostly made up of single abraded body sherds in the Stamford ware fabrics ST2 and ST3. The three sherds in ST3, in the lowest context relating to what is thought to be the medieval Hotgate, the make-up layer 73, included a jar rim with both internal and external sooting indicating that this vessel had been used over the fire in conjunction with a lid. The rim is similar to Kilmurry's form 2-09, which has been dated at Stamford from the later 10th century. Another sherd was decorated with diamond rouletting, characterised as M1 at Stamford; a motif which is also dated from the 10th century at the production centre (Kilmurry 1980). The third sherd was a knife trimmed and externally sooted convex base.

The Hotgate contexts above, layers 68 and 71, both contained sooted sherds of the coarse and fine Stamford ware fabrics ST2-ST3 with a terminal date in the late 11th or 12th centuries. Context 69 produced a single fragment of an everted jar rim with external sooting in a Lincoln/Lincolnshire Shelly ware dating from the late 10th or 11th centuries.

Early-High Medieval – phases 8-9
Pit Fills: [25] [38]
Layers: 64 and 65.
Assemblage: 70 sherds, 1575 grams, 0.7995 EVES, average sherd weight 22.5 grams.

Three fine walled and joining sherds in the Potters Marston from the slump or metalling layer 64 and a sherd of thin lead glazed Stamford ware in the layer 65 may all date from the 12th century. Seven sherds of late 12th or 13th century thick walled Potters Marston and a single sherd, weighing 164grams, from the convex base of a hard fired Splashed ware jug or tubular spouted pitcher were the only finds in [38], suggesting a terminal date in the early to mid-13th century for the backfill of this pit.

However, this assemblage was predominantly from the fill of the pit [25] and was made up of a typically early medieval range of vessel forms in Potters Marston. This comprises shouldered jars with everted rims, (Sawday 2009a, fig.149) dating from the late 12th into the 13th century, together with fragments of jugs and bowls, many externally sooted sherds and a few decorated body sherds in the same ware. Other finds from this pit included two Coarse Shelly ware jars also dated from the 12th or 13th centuries at Raunds (Blinkhorn 2001, fig.190.7.65).

The two fragments of Reduced Sandy ware are not closely dated and are possibly residual here, whilst the absence of any glazed wheel thrown pottery in the medieval sandy wares would appear to suggest a similar terminal date for the backfill of this pit as for [38] above. This is, however, rendered somewhat uncertain by the presence of a single fragment of mid or later 13th century medieval ridge tile, weighing 37 grams, in the Chilvers Coton fabric CC1 in context 26. The tile, if not intrusive, indicates a post 1250 terminal date for the backfill of [25].

High Medieval – phase 9
Pit Fill: [21]
Assemblage: 1 sherd, 27 grams, 0.0 EVES, average sherd weight 27.00 grams.

A sherd of Nottingham Green Glazed ware dating from *c*.1250 into the 14th century was the only find recovered from the pit [21].

Unstratified

Three joining Potters Marston fragments, weighing 210 grams, were found in an unstratified context. These made up a funnel shaped object, the upper end in plate 1 forming a simple upright rim, the lower end clearly opening out to join with the rest of the as yet, unidentified object, possibly as a socket to a bowl, or perhaps a piece of roof furniture. The external sooting to one side of the 'funnel' and the body below suggests the former rather than the latter, but the funnel is very wide, *c*.40mm, if it was intended to take a wooden handle.

Discussion

All of the Stamford ware in the earliest phase group was unglazed, and the majority of the undiagnostic body sherds also showed evidence of external sooting; and were probably jars or bowls used for cooking. These vessel types and the relatively coarse fabrics are features characteristic of the earlier phases of production at Stamford (*ibid* 1980). The presence also of a fragment of an everted jar rim with external sooting in a Lincoln/Lincolnshire Shelly ware in context 69, is also typical of late Saxon and early medieval assemblages in Leicester (Sawday 2009c).

Similarly the phase 8 and 9 finds were made up primarily of jars, with relatively few jars or bowls, and only a limited range of decoration present. This and the dominance of Potters Marston and the small amount of glazed medieval wares is indicative of a 12th and early 13th century date for much of the material.

Plate 1: The unidentified object in Potters Marston.

Conclusion

As noted above, in spite of the small size of the pottery assemblage, the range of fabrics and forms appears to be fairly typical of that found in Leicester, notably at the Highcross excavations, where a range of late Saxon and early medieval pottery as well as later finds were recorded(Sawday 2009a-c). The evidence from the Highcross excavations suggested

that St Michael's Lane, below the modern Elbow Lane, had been established by the late 12th century (Sawday 2009a, 105, R. Buckley pers. comm.).

The evidence here may suggest a somewhat earlier date for the establishment of what has been identified here as the medieval Hotgate, perhaps as early as the 11th or earlier 12th centuries. Unfortunately the evidence is limited by both the small size of the excavations and of the assemblages recovered from the layers thought to be associated with the medieval thoroughfare.

The average sherd weight, especially from the backfill of the two cut features, [21] and [25] where the 60 sherds had an average weight of 23.6 grams appears to confirm that there was occupation in the vicinity from at least the later 12th and 13th centuries. Interestingly, relatively little early material was identified from the assemblages examined by the author from the site of medieval tenements on the west side of Highcross Street (now St Nicholas Circle) above the Roman forum, to the north of Hotgate, suggesting that occupation here probably began at a similar date.

Table 3: The medieval and later pottery by fabric, sherd numbers and weight (grams) by context.

Context	Fabric/Ware	No.	Gr.	Comments
POT				
20 [21] pit	NO3 - Nottingham Green Glazed	1	27	Apple green glaze, c. 1230-1350
26 [25] fill cess pit	PM - Potters Marston	1	43	Everted, externally thickened jar with shouldered body & curvilinear decoration on rim top & shoulder. Diameter c.210mm, EVES - 0.224. 12th C+
26	PM	1	14	Everted, shouldered jar, with external rilling, diameter c.2110mm, EVEs 0.135
26	PM	1	40	Rounded jar – everted rim, sooted externally. Diameter c.150mm, EVES 0.10
26	PM	1	32	Shouldered jar with everted rim, diameter 210 mm, EVEs 0.126
26	PM	1	30	Stabbed strap jug handle .
26	PM	1	29	Rounded bowl with plain rim, diameter c.300mm, EVEs 0.0745
26	PM	2	28	Body sherds decorated with rouletting/incised horizontal lines.
26	PM	43	594	Body/base sherds, 24 externally sooted
26	RS – Reduced Sandy ware	1	27	Body, sooted externally, sandy fabric with Fe, possibly a variant of RS1
26	RS	1	23	Possibly a variant of RS4
26	CS – Coarse Shelly	1	34	Jar rim, diameter c.210mm, EVEs 0.0755. Similar vessel at Raunds (Blinkhorn 2001, fig.10.7.65) – where dated from the 12th or 13th century.
26	CS	1	13	Jar rim, diameter c.240mm, EVEs 0.0745, sooted

				externally. Similar vessel at Raunds as above, where dated from the 12th or 13th century.
26	CS	2	19	Jug rim & body fragments
36 [38] pit	PM	1	191	Convex base, oxidised surfaces, thick walled, - 13th - 14th C.
37 [38]	PM	7	277	Body/convex base sherds, 5 sooted, one with inscribed horizontal line decoration, 13th – 14th C.
37	SP4 – Splashed ware	1	164	Convex base, distorted, glazed, possibly a jug or spouted pitcher.
64 slump metalling	PM	3	15	3 joining relatively fine walled body sherds – 12th C.
65 layer	ST2 – Fine Stamford ware	1	2	Body – thin lead glaze which is dated predominantly to the late 11th to the mid-12th C. at Stamford.
68 ?Hotgate surface	ST3 – Coarse Stamford ware	1	5	Body, sooted externally, c.900-c.1050
69 ?Hotgate – make-up	LI – Lincoln Shelly ware	1	6	Everted jar rim fragment, sooted externally, estimated rim diameter 140 mm, EVEs 0.052
71 ? Hotgate make up	ST3 – Coarse Stamford	1	6	Body, reduced grey/black externally sooted.
71	ST2 – Fine Stamford ware	2	28	Body, one externally sooted.
73 ? Hotgate make -up	ST3	1	16	Everted jar rim, external diameter c.140mm, EVEs 0.010. Similar to later 10th C form 2-09 at Stamford (Kilmurry 1980, 136, fig.47).
73	ST3	1	10	Body sherd with diamond rouletting, M1 at Stamford (Kilmurry 1980, fig.74). Rouletting dates from 10th C. at Stamford.
73	ST3	1	14	Convex base, externally knife trimmed & sooted.
U/S	PM	3	210	Clay cylinder or spout, possibly from a jug, or roof furniture, diameter approx. 40mm, post depositional sooting.
RIDGE TILE				
26	CC1 – Chilvers Coton A ware	1	37	Traces of external glaze

Site/ Parish: Jubilee Square, Leicester Accession No.: A14 2013 Document Ref: jubilee square2.docx Material: pot Site Type: ?Hotgate metalling/core medieval town	Submitter: W. Jarvis Identifier: D. Sawday Date of Identification: November 2014 Method of Recovery: wb/excavation Job Number: 14/004

The Small Finds by Nicholas J. Cooper

Introduction

A total of 21 objects were recovered comprising two copper alloy Roman coins, two fragments of Roman vessel glass, a Roman copper alloy stud, a Roman copper alloy chain link, a lead weight and three iron objects. Additionally there were nine other miscellaneous fragments of copper alloy, a piece of lead working waste and a modern button.

Catalogue

Roman coins

1) Sf2 (28). Ae illegible. Diameter 27mm. Early Roman
2) Sf20 (77) [78] Ae illegible. Diameter 14mm. Fourth century

Roman Vessel Glass

3) Sf13 (9) Fragment in blue/green colourless glass probably from the handle attachment of an Early Roman cast bottle of later 1st or 2nd century date.
4) Sf18 (61) Fragment of tubular rim in blue/green colourless glass from shallow bowl with out-splayed tubular rim (Price and Cottam 1998, 110, fig.44). Not closely dated between the 2nd and 4th centuries. Diameter 200mm.

Roman Copper alloy objects

5) Sf8 and Sf9 (58) one complete and one compressed fragment of chain link formed from a flattened ring of wire, folded over to give two, double strand loops at right angles to one another which is a common Roman technique. Length of link 22mm. Could have had a wide variety of suspension functions within the household such as suspending lamps from wall spikes, as seen in London with a very similar chain (Hill and Rowsome 2011, 118, fig.118).
6) Sf21 (68) Complete, round stud with flat head and tapering shaft. Diameter 18mm, length of stud 15mm. Paralleled by an example from Causeway Lane (Cooper 1999, 277, fig.135.198).
7) S17 (10). Tip and shaft fragment from tapering shaft probably from a hair pin or needle.

Copper ally objects of uncertain date

8) Sf3 U/S Torn sheet fragment. Length 20mm
9) Sf7 (48) Amorphous fragment with length of square sectioned shaft protruding. Length 25mm.
10) Sf10 (48) Broken length of sheet strip of length 40mm, and three amorphous fragments.
11) Sf11 (55) Amorphous fragment. Length 18mm
12) Sf12 (9) Torn sheet fragment. Length 40mm
13) Sf15 (10) Fragment of unidentified object. Short broken length of plano-convex section with sharp angle at one end. Length 12mm.
14) Sf16 (41) Torn sheet fragment. Length 14mm.

Lead objects

15) Sf4 (16). Lead disc. Probably used as a scale weight, confirmed by weight of 14g, which is equivalent to half an ounce. Diameter 25mm.
16) Sf14 (9) Small amorphous lump of droplet waste from working. Weight 11g

Iron Objects

Three objects relating to timber construction and probably of Roman date.

17) (9) tapering prong of square section, probably from a joiner's dog or similar structural fitting
18) (10) nail with incomplete tapering shaft. Of Manning's Type 1B. Length 30mm

19) (75) square sectioned shaft fragment probably from nail of Manning's Type IB. Length 50mm.

Modern Copper alloy objects

Sf5 (16) Solid cast flat button with base of loop soldered to the back. Diameter 26mm.

The Roman Tile by Nicholas J. Cooper

A total of 19 fragments of Roman tile weighing 7.7kg were recovered from eight contexts, only two of which (10) and (32) are of Roman date. The complete record is presented below and shows a typical range of constructional tile from roof (tegula and imbrex) and wall, with one notable exception described below.

Jubilee sq A14.2013 Roman Tile			
Context	**Type**	**Frags**	**Weight**
5	arch	1	4200
10	tegula	1	75
26	wall	1	445
26	imbrex	2	108
26	misc	7	870
27	tegula	2	810
32	imbrex	1	55
37	imbrex	1	175
68	imbrex	1	185
83	wall	2	745
Total		**19**	**7668**

The exception is a tapering flat tile from (5) which may have been used within an arch structure. The tile has two intact edges and the faces are covered in mortar. The top edge and inner edge are damaged so it is not clear how much of the tile has been lost, but the surfaces have some mortar on, perhaps from re-use. The outer facing edge is clean and the width tapers from 80mm at the damaged top to an estimated 45mm at the bottom, over a length of 250mm. The depth of the tile as it sits within the arch is 140mm. The arch tile has been retained in the archive, whilst the remainder has been discarded.

The Masonry Fragments by Wayne Jarvis

SF1 (Figure 43-Figure 46**)**
Of 'Millstone Grit' stone, probably from Melbourne, South Derbyshire. Fragment of cornice perhaps from a pediment, but traces of moulding on three sides might suggest it was an altar (or similar) base. Moulding includes cavetto, cyma recta and fillets (Ginouvès and Martin 1992, 152-64). Upper face shows toolmarks clearly, including pick and adze/flat chisel marks. Rear and base broken in antiquity. Dimensions 880 x 490 x 240mm.

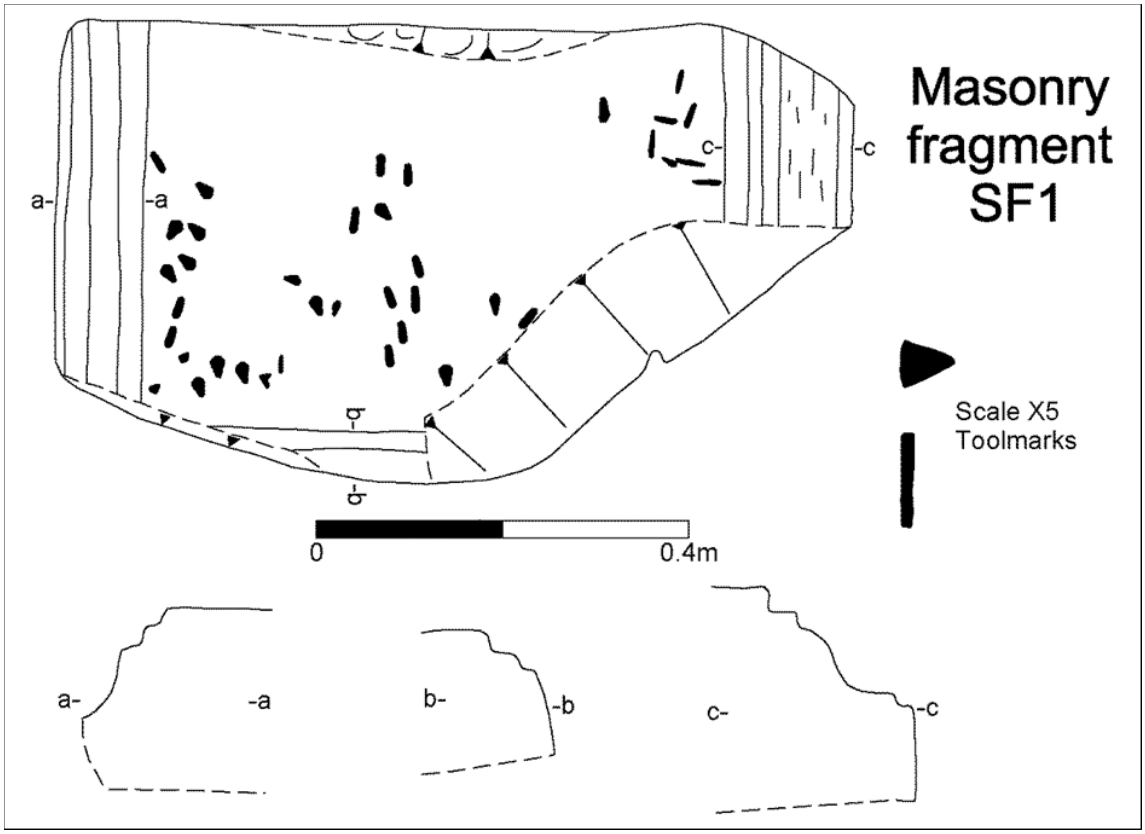

Figure 43 Masonry fragment, cornice, SF1


Figure 44 Masonry fragment, cornice, general view and front moulding, SF1

Figure 45 Masonry fragment, cornice, SF1, left moulding

Figure 46 Masonry fragment, cornice, SF1, right moulding

SF6 (Figure 47**,** Figure 48**)**
Also of 'Millstone Grit' stone, probably from Melbourne, South Derbyshire. Fragment of a column drum. Two faces only partly surviving, top face and part of the arc of the outer face. Top face shows very faint chisel marks, and clear rectangular peghole >.10m by >.10m. Outer face shows some tooling, and a deep chiselled area, possibly original. Rest of fragment damaged in antiquity. Probable original diameter 540mm. Dimensions 530 x 350 x 270mm.

Figure 47 Masonry fragment, column drum, top(?) surface, SF6

Figure 48 Masonry fragment, outer arc of column drum, SF6

The Animal Bones by *Jennifer Browning*

Introduction

This report presents the analysis of the animal bone which was hand-recovered during excavations at Jubilee Square, Leicester. Both Roman and medieval activity is present on the site. Nine contexts were targeted for analysis, as these were considered to be the best use of resources, bearing in mind contextual integrity. The remains from a single bulk sample, Sample 1: cess pit context (26), were also examined.

Methodology

Specimens were identified with reference to comparative modern and ancient skeletal material held at the School of Archaeology and Ancient History, University of Leicester. Information was compiled directly into a *pro forma* spreadsheet with facility for recording data on preservation, taxa, bone element, state of epiphyseal fusion and completeness to elicit information on species proportions, skeletal representation, age and taphonomy. Where possible, the anatomical parts present for each skeletal element were recorded using the 'zones' defined by Serjeantson (1996), with additional zones ascribed to mandibles based on Dobney and Reilly (1988). Surface preservation was assessed after Harland et al (2003). The occurrence of burning, gnawing and pathologies was noted and described. Butchery was recorded using simple coding and description. Joining fragments were re-assembled and the resulting specimen counted as a single fragment, although a record of the original number of fragments was retained.

Provenance and Dating

The bones were recovered from two pits of medieval date, including a well-dated cesspit and a series of layers lying on top of Hotgate. The lowest layer, context 74, is a possible Romano-British surface but the remainder are medieval. Almost all of the medieval features contained residual Roman pottery. Although there is not necessarily a direct correlation between the relative quantities of residual pottery and residual bones, it must be assumed that some re-working has occurred of the animal bones in the medieval features with re-deposition from Roman features. Unfortunately, there are no reliable visual means of distinguishing between residual and non-residual bones, particularly in a small assemblage.

Table 3: List of contexts from which animal bones were recovered

Context	Cut	P Ex Notes	Med Pot	Bone	RB?	MED?
19	21	Med Pit Fill		Y		Y
20	21	Med Pit Fill lower	Y	Y		Y
26	25	Cess pit fill	Y	Y		Y
68	-	Hotgate' surface/layer		Y		Y
69	-	Hotgate' surface/layer		Y		Y
70	-	Hotgate' surface/layer		Y		Y
71	-	Hotgate' surface/layer	Y	Y		Y
73	-	Hotgate' surface/layer	Y	Y		Y
74	-	Poss. RB surface		Y	Y?	

Preservation and Taphonomy

While the bones exhibited some ancient and modern breakage, few fragments from the same specimens were noted, indicating that fragmentation and dispersal had occurred prior to the deposition of the material. Re-fitting of joining fragments only reduced the total from 144 to 134. Surface condition was assessed for each specimen, following Harland et al (2003) and

indicated that the assemblage was of mixed preservation (Table 4). Contexts (19) and (20), both fills of pit [21], were particularly well-preserved, with most bones classed as 'excellent'. Across the whole assemblage 43% of bones preservation was considered 'fair: surface solid in places, but flaky or powdery on up to 49% of specimen'.
Gnawing occurred on six specimens, all recovered from the layers overlying Hotgate and indicating the availability of some bones to scavengers in this period. No burnt bones were observed in the assemblage.

Taxa and Carcass Representation

The possible Romano-British layer, context (74), produced an assemblage numbering 21 specimens of which eight were cattle (Table 5). With the exception of a humerus, these were elements from the head or feet, indicating waste from primary butchery. Two horncores were recovered, one of which was juvenile. The adult example was apparently short-horn, held horizontally and with no twist. Sheep/goat, pig horse and dog were also represented through a small number of elements (Table 6).

The majority of the assemblage was recovered from pit fills and layers of medieval date (Table 5). Cattle bones were the most numerous and widely distributed of the identified taxa. Both cranial and a variety of post-cranial elements were present (Table 6). Adult animals were predominantly represented but some unfused bones were also recovered. A horncore from pit context (20) was of the same morphological type as the Roman example. Small numbers of pig bones were recovered from a variety of pits and layers, but there was a concentration within the lower fill of pit 21, which consisted of the ribs, fragmented cranium and mandibles of a young pig, probably a single individual. The permanent first molar was visible but yet to erupt, indicating an age of no more than 3-4 months (Hill 2005, 233). Sheep/goat bones, consisting of a mixture of cranial and post-cranial bones, were distributed across five contexts. It is likely that these bones represent sheep rather than goats, as indicated by the metapodials which were of sheep rather than goat morphology.

The equid (probably horse) bones, a scapula fragment and cheektooth from the upper jaw, were recovered from two lower layers, indicating that they are isolated examples, possibly incorporated with other rubbish. A single dog bone (metatarsal) was recovered from layer (74). The phalanx of a red deer was the only wild mammal bone found at the site.
Bird bones were rare but occurred in all the pit fills. Only domestic fowl and goose were identified. A juvenile domestic fowl tarso-metatarsus, apparently gnawed by rodents, was found in layer (71).

The coarse and fine fraction from Sample 1 (cess pit context 26) were scanned but have not been formally quantified for this report. This contained a number of fish bones, including approximately 18 vertebrae comparable with herring (Clupeia sp.), a smaller number of eel vertebrae and a calcined vertebra and brachial ray belonging to a large gadid such as cod. A number of the bones were burnt (calcined) and several of the herring vertebrae appeared to have been chewed, consistent with the incorporation of human faeces into the deposit. In addition to the fish bones, a cattle patella, domestic fowl furcula and 3rd phalanx of pig were also identified.

Age Structure

An indication of age at death is normally provided by tooth eruption and wear and, from post-cranial bones, the state of epiphyseal fusion. A pair of pig mandibles, found with part of a fragmented skull in pit [21], was from an animal of approximately 3-4 months (Table 7). Two sheep/goat mandibles were also recovered; in one case the third molar was erupting indicating an age of around 2 years, while the second is more likely to be 5-6 years (Moran

and O'Connor 1994). Most early-fusing bones were fused for all taxa (Table 8). The only unfused bones were vertebral epiphyses, which fuse after the rest of the skeleton.

Butchery and Articulated Bones

All but one of the butchery marks was produced by a cleaver or similar heavy chopping tool (Table 9). Cattle bones were most affected (30%). Most of the marks were aimed at dismemberment of the carcass, reducing it into smaller portions for transport and eventually, joints for consumption.

Pathologies and Measurements

No pathological bones were noted in the assemblage.
The measurements taken are recorded in tables (Table 10; Table 11 and Table 12). While there are insufficient numbers to use for intra-site comparisons, they will potentially contribute to wider studies.

Discussion

An assemblage of animal bones was recovered during an archaeological intervention at Jubilee Square, Leicester. Most of the deposits were dated to the medieval period and consisted of pit fills and layers on top of Hotgate. The lowest layer (74) is thought to be Roman-British. Animals identified included cattle, sheep/goat, pig, horse, dog, red deer, domestic fowl, goose, cod, herring and eel. This range is typical of high medieval deposits within Leicester. The greatest variety of species were recovered from cess pit [25], however this assemblage also included the sieved remains, containing small taxa, which would not have been recovered through hand-digging. The bones appear to represent waste from butchery and consumption, including fish bones that have passed through the gut. There was evidence for both juvenile and adult animals in the assemblage. A juvenile pig, possibly only just weaned, is likely to have been bred within the town.
There are hints that animals were used for purposes other than food. Cattle and red deer phalanges are likely to be more indicative of hide or skin working. Cattle were generally of a short-horned variety, in common with most other cattle remains from Roman and medieval Leicester. Horns were removed, presumably due to the usefulness of the horn-sheath as a material from which to create new objects.

Tables

Table 4: Preservation by feature type (n). Preservation stage after Harland et al 2003)

Preservation	**Excellent**	**Good**	**Fair**	**Poor**
19	100%	0%	0%	0%
20	71%	21%	7%	0%
26	0%	10%	90%	0%
68	0%	100%	0%	0%
69	0%	90%	0%	10%
70	0%	100%	0%	0%
71	8%	8%	85%	0%
73	0%	54%	43%	3%
74	0%	48%	52%	0%
Total	**17%**	**39%**	**43%**	**1%**

Table 5: Distribution of assemblage (Number of Identified Specimens- NISP)

Taxa	**Pit 21**		**Pit 25**	**layers**						
	19	**20**	**26**	**68**	**69**	**70**	**71**	**73**	**74**	**Total**
cattle	1	2	6		3		2	11	8	33

pig		23	2	1				5	1	32
sheep/goat			3		1		5	3	4	16
horse								1	1	2
dog									1	1
red deer					1					1
domestic fowl			1				1			2
goose	1	1								2
large mml		1	6		5	2	5	10	5	34
medium mml		1	2	1		1		5	1	11
Total	**2**	**28**	**20**	**2**	**10**	**3**	**13**	**35**	**21**	**134**

Table 6: Distribution of bones by context, taxa and element (raw fragment numbers, not corrected for minimum numbers of elements)

Context		**19**	**20**	**26**	**68**	**69**	**70**	**71**	**73**	**74**	**Total**
cattle		**1**	**2**	**6**		**3**		**2**	**11**	**8**	**33**
horncore										1	1
horncore and frontal fragment			1							1	2
zygomatic									1		1
occipital				1							1
incisor				1							1
lm1/2									1	1	2
premolar										1	1
rib (head)		1									1
scapula				1		1					2
humerus									1	1	2
radius				1				1			2
metacarpal									1		1
pelvis						1			2		3
femur									1		1
tibia			1	1					1		3
calcaneum						1		1			2
astragalus									1		1
tarsal										1	1
metapodial				1							1
1st phalanx										1	1
2nd phalanx									2		2
3rd phalanx										1	1
dog										**1**	**1**
metatarsal										1	1
domestic fowl				**1**				**1**			**2**
synsacrum				1							1
tarso-metatarsus								1			1
goose		**1**	**1**								**2**
carpo-metacarpus		1									1
tibio-tarsus			1								1
horse									**1**	**1**	**2**
cheektooth										1	1
scapula									1		1
large mml			**1**	**6**		**5**	**2**	**5**	**10**	**5**	**34**
skull fragment				3					1		4
scapula				1							1

Context		19	20	26	68	69	70	71	73	74	Total
rib shaft			1			1		3			5
tibia						1					1
vertebra cervical				1					1	1	3
vertebra thoracic									1		1
Vertebra fragment								1			1
shaft fragment				1		3	2	1	7	4	18
medium mml			**1**	**2**	**1**		**1**		**5**	**1**	**11**
radius									1		1
rib (head)									1		1
rib shaft					1				1		2
shaft fragment			1				1		2		4
vertebra lumbar				1							1
vertebra thoracic				1						1	2
pig			**23**	**2**	**1**				**5**	**1**	**32**
skull frag			1								1
canine									2		2
maxilla			1								1
mandible			2						1		3
rib (head)			19								19
humerus				1					1		2
radius				1							1
pelvis					1					1	2
metacarpal									1		1
red deer						**1**					**1**
1st phalanx						1					1
sheep/goat				**3**		**1**		**5**	**3**	**4**	**16**
skull frag										1	1
upper molar 3										1	1
maxilla				1							1
mandible				1						1	2
scapula								1			1
humerus				1					1		2
ulna								1			1
radius									1		1
metacarpal						1		2			3
tibia								1		1	2
metatarsal									1		1
Total		**2**	**28**	**20**	**2**	**10**	**3**	**13**	**35**	**21**	**134**

Table 7: Toothwear stages recorded within the assemblage (after Grant 1982)

ID	Feature	cut	Context	NISP	Taxon	dp4	m1	m2	m3
9	pit	21	20	1	pig	d	V		
10	pit	21	20	1	pig	d	V		
20	pit	25	26	1	sheep/goat				1/2
44	layer	-	74	1	sheep/goat		m	h	g

Table 8: Taxa, element and state of fusion (by context) f=fused; u=unfused; j=juvenile;

Context	NISP	Taxon	Element	Proximal Articulation	Approx age of fusion (after Silver 1969 and Reitz and Wing 1999)
73	1	cattle	pelvis	f	7-10 months

26	1	cattle	radius	f	15-18 months
73	2	cattle	2nd phalanx	f	18 months
74	1	cattle	1st phalanx	f	13-15 months
69	1	cattle	calcaneum	u	36-42 months
71	1	domestic fowl	tarso-metatarsus	j	-
19	1	goose	carpo-metacarpus	f	-
26	1	large mml	v cervical	u	84-108 months
26	1	medium mml	v lumbar	u	48-60 months
74	1	pig	pelvis	f	12 months
26	1	pig	radius	f	12 months
69	1	red deer	1st phalanx	f	-
26	1	sheep/goat	humerus	f	36-42 months
73	1	sheep/goat	humerus	u	36-42 months
71	1	sheep/goat	ulna	f	30 months
				Distal Articulation	
69	1	cattle	scapula	f	7-8 months
73	1	cattle	metacarpal	f	24-36 months
20	1	cattle	tibia	f	24-30 months
71	1	domestic fowl	tarso-metatarsus	j	-
19	1	goose	carpo-metacarpus	f	-
73	1	horse	scapula	f	<12 months
26	1	large mml	v cervical	u	84-108 months
26	1	medium mml	v lumbar	u	48-60 months
26	1	pig	humerus	f	12 months
73	1	pig	metacarpal	f	24 months
71	1	sheep/goat	metacarpal	u	18-24 months
73	1	sheep/goat	metatarsal	f	20-28 months
74	1	sheep/goat	tibia	f	18-24 months

Table 9: Butchery observed within the assemblage

Feature	Context	Taxon	Element	Location	Direction (in relation to axis of bone)	Angle	Tool	Notes
layer	74	cattle	horncore	base of horncore	diagonal	oblique	P	cut through.
pit	20	cattle	horncore and skull	frontal	parallel	vertical	P	cut through. chopped through skull removing side of cranium and horncore;
layer	74	cattle	humerus	distal shaft	transverse	vertical	P	cut through
pit	26	cattle	occipital	occipital	Diagonal	oblique	P	cut through.
layer	69	cattle	pelvis	ilium	diagonal	oblique	P	cut through. several chops leaving a neat section of ilium

layer	73	cattle	pelvis	ischium	parallel	oblique	P	cut through.
pit	26	cattle	radius	mid-shaft	diagonal	oblique	P	chop running cut through diagonally up proximal shaft
layer	69	cattle	scapula	neck	transverse	oblique	P	cut through
pit	20	cattle	tibia	distal shaft	diagonal	oblique	P	cut through .chopped through distal shaft both obliquely and traversely
pit	26	cattle	tibia	proximal shaft	transverse	vertical	P	cut through
pit	19	goose	carpo-metacarpus	proximal	diagonal	oblique	P	cut through
pit	20	large mml	rib shaft	shaft	transverse	vertical	T	cut through
layer	69	large mml	rib shaft	shaft	transverse	vertical	P	cut through rib section
layer	69	large mml	tibia	shaft	transverse	vertical	P	cut through
layer	73	large mml	v cervical	cranial processes	transverse	vertical	P	cut through
layer	73	large mml	v thoracic	base of spinous process	transverse	oblique	P	cut through
pit	26	pig	humerus	distal shaft	diagonal	oblique	P	cut through
pit	26	sheep/goat	humerus	proximal (z2)	transverse	vertical	P	cut through trochanter chopped off
pit	26	sheep/goat	humerus	distal shaft	diagonal	oblique	P	cut through trochanter chopped off
layer	71	sheep/goat	scapula	neck	diagonal	vertical	P	cut through

Table 10: List of bone measurements taken (mm) after von den Driesch (1976)

Context	Taxon	Element	GL	Bp	Bd	SD	Dd	Bt	HTC	GLm	Did
19	goose	carpo-metacarpus	91.9	22.6							11.8
26	cattle	tibia		84.2							
26	pig	radius		30.1							
26	pig	humerus			37.2			29.6	20.9		
74	sheep/goat	tibia			25.8		19.5				
73	sheep/goat	metatarsal	128	19.2	21.7	11.7	14.8				
73	cattle	metacarpal		48.6	26.6						
73	cattle	astragalus			40					55.3	

Table 11: List of tooth measurements taken (mm) after von den Driesch (1976) and Payne and Bull (1988)

Context	Taxon	Element	L	W/WA	WP
20	pig	ldp4	19.6		8.6
20	pig	ldp4	19.4		8.6
26	sheep/goat	um3	17	9.4	

74	sheep/goat	lm1	10.7	6.6	
74	sheep/goat	lm2	13.6	8.1	
74	sheep/goat	lm3	23.4	8.3	

Table 12: Horncore measurements taken (mm) (after Sykes and Symmonds

Context	Taxon	Element	max basal Diameter	min basal Diameter	Basal circumference
74	cattle	horncore	42	33.9	126

The Charred Plant Remains by Rachel Small

Introduction

Excavations were carried out at Jubilee Square, Leicester, and were directed by Wayne Jarvis. The Fosse Way, an important Roman road running up the western side of Great Britain, was identified and medieval back gardens, one of which included a cess deposit. A soil sample was taken from the medieval cess deposit to assess the potential for it to contain charred plant remains, a useful indictor of activities on the site or nearby associated with agriculture and/or human occupation.

Method

Two buckets were taken and the soil was loamy. The soil was wet sieved in a York tank using a 0.5mm mesh with flotation into a 0.3mm mesh sieve. The residues were air dried and the fraction over 1mm sorted for finds, such as fish bones and nut shells, which are commonly present in cess deposits; these are noted in relevant sections of the report. The flotation fractions (flots) were transferred into plastic boxes and air dried. The flots were sorted for plant remains using a x10-40 stereo microscope. The plant remains were identified by comparison with modern reference material available at ULAS and were counted and tabulated below (table 1). The plant names follow Stace (1991).

Results

Charred plant remains and charcoal were present in quantity. Fish bones were common in the residue. Small faecal concretions were possibly present; study of parasites will shed more light on this. No rootlets, snails or worm egg shell capsules were present, suggesting the deposit had not been disturbed.

Table 1: Charred plant remains in the flot. Key: + present, ++ moderate amount, +++ abundant.

Sample	Context	Description	Litres	Charred grains	Charred chaff	Charred seeds	Fruit stone/ nut shell	Uncharred seeds	Charcoal	Notes
1 (1/2)	26	Cess deposit	8	++	-	+	+	+	+++	12 x *Triticum* spp. free threshing grains; 2 x *Hordeum vulgare* L. grains; 13 x cereal grains. 9 x *Corylus avellana* L. shell. 1 x *Matricaria* sp.; 4 x large Poaceae; 1 x *Brassica* sp.; 1 x Vetch.
1 (2/2)	26	Cess deposit	8	++	+	++	++	+	+++	5 x *Triticum* sp. free threshing grains; 2 x *Hordeum vulgare* L. grains; 10 x cereal grains; 1 x *Hordeum vulgare* L. rachis. 21 x *Corylus avellana* L. 6 x large Poaceae; 2 x small Poaceae; 2 x *Brassica* spp.; 1 x Vetch; 1 x small *Polygonum persicaria* L.

Grains and chaff

Grains of free threshing wheat (*Triticum aestivum/durum)* were common. Barley (*Hordeum vulgare* L.) grains were also present but in lower numbers. One fragment of chaff was identified, a piece of barley rachis.

Other food plants

Hazel nut shell (*Corylus avellana* L.) was present in the flot, and an additional twenty-one fragments were found in the residue of part 1 and thirty fragments in the residue of part 2. Hazel nuts are edible and the wood has many uses, such as for fuel and basketry.

Charred (weed) seeds

Charred seeds were common. This included weeds of arable and waste land: small and large grasses (Poaceae), cabbages (*Brassica* spp.)*,* lady's thumb *(Polygonum persicaria* L.*),* vetch *(Vicia sativa* L.*)* and *Matricaria* sp. – plants of the sunflower family. Vetches are commonly grown as fodder and cabbages are also edible, and so they may have been collected (Jones et al 2004).

Discussion

Van der Veen (1992) believes that a minimum of 50 items in a sample is needed for a reliable interpretation of crop processing activities to be drawn, by considering the ratios of cereal grains, chaff and weed seeds, for example. If the totals for the two parts are combined along with the finds from the residue this number is reached.

Hazel nut shell fragments are the most abundant in the sample (81 fragments). Van der Veen (2011) considers fruits and nuts to be 'snack' or 'lunch' foods, casually eaten in a working area; here, the waste would have been thrown onto the fire.

There are a higher proportion of free threshing wheat grains (17) to barley grains (4). Free threshing wheat is therefore likely to have been the dominant crop. Both of these crops are characteristic of the medieval period. It is not clear whether the two where grown separately or if barley was a residual crop in the field.

There is a much higher proportion of grain (44) to chaff (1); this is suggestive of the remains of burnt food spillage. The weed seeds present, are generally 'big', and could therefore possibly be the waste from food preparation - picked out weed seeds similar in size to the grain and thrown onto the fire (Jones 1984).

The abundance of charcoal probably represents the sweepings of a fire, which became incorporated into the cess deposit during deposition.

Conclusion

The cess soil sample from Jubilee Square contained charred plant remains in quantity. Food items were identified: free threshing wheat, barley and hazelnut, and evidence for their consumption and preparation. Weed seeds provided evidence for the immediate/surrounding environment at the time – arable land. Fish bones and possible small faecal concretions were identified for further analysis. If further excavations are carried out on site or nearby, sampling of soil is recommended.

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