

**Excavations at York Road  
Leicester  
(NGR SK 585039)**

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## Excavations at York Road, Leicester

### Summary

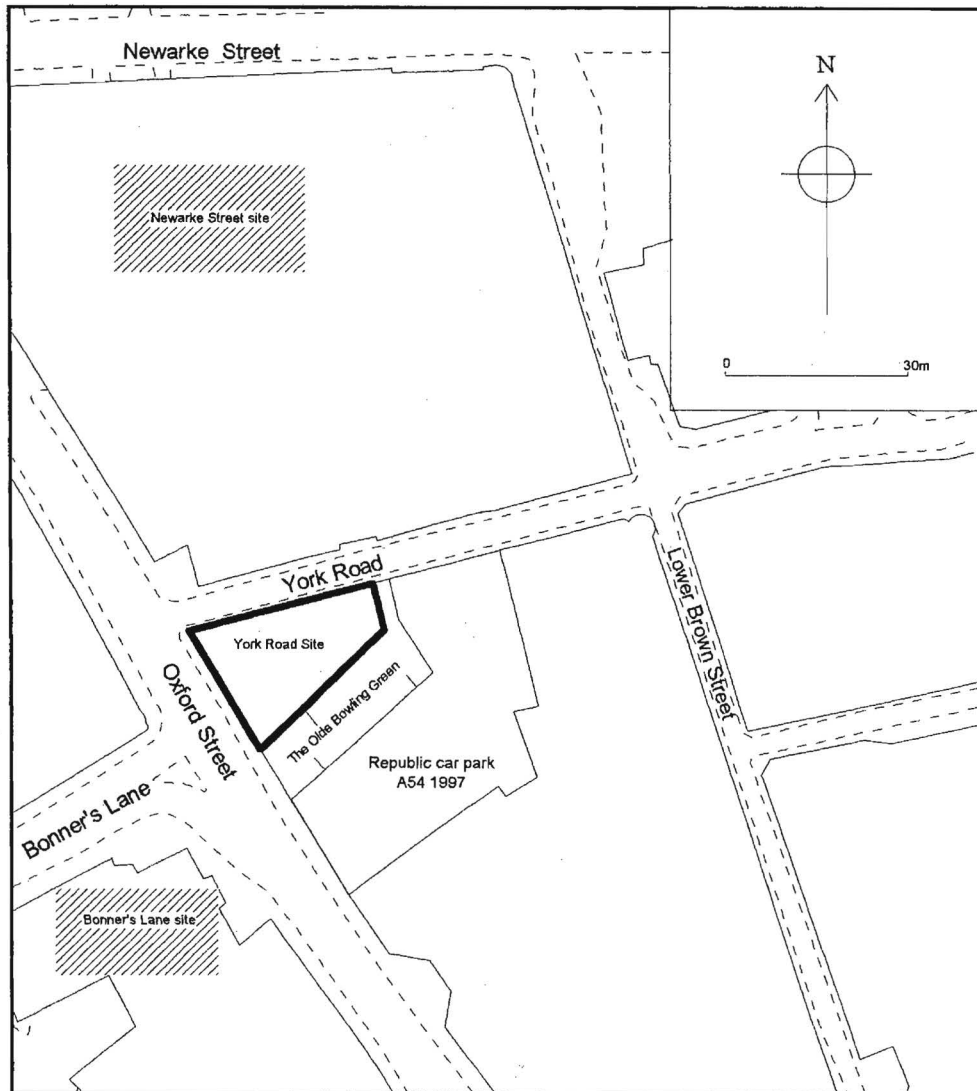
*The York Road site lies approximately 250 m to the south-west of the Roman and medieval town defences in an area which has seen an increase in archaeological investigations in recent years. Excavation in advance of development revealed stratified archaeological deposits and features dating from the late first or early second centuries AD through to the post-medieval period. Earlier Roman features included east - west and north - south boundary ditches, and possible domestic activity in the south and west of the site indicated by post holes and pits. In the fourth century the area was used as an inhumation cemetery. The remains of three individuals were recovered, although these had been badly disturbed by subsequent activity. It is likely that the cemetery was originally more extensive and that many burials were disturbed during the medieval and post-medieval period. The remains of a building of 12th or 13th century date was seen fronting onto Oxford Street and activity can be seen in the 12th, 13th and 14th centuries with back yard activity apparent from the 12th century until the 16th century. Demolition of the medieval street frontage is followed by the construction of a large ditch curving from east - west to north - south at around the time of the Civil War. This may have formed part of the town's Civil War defences.*

### Introduction

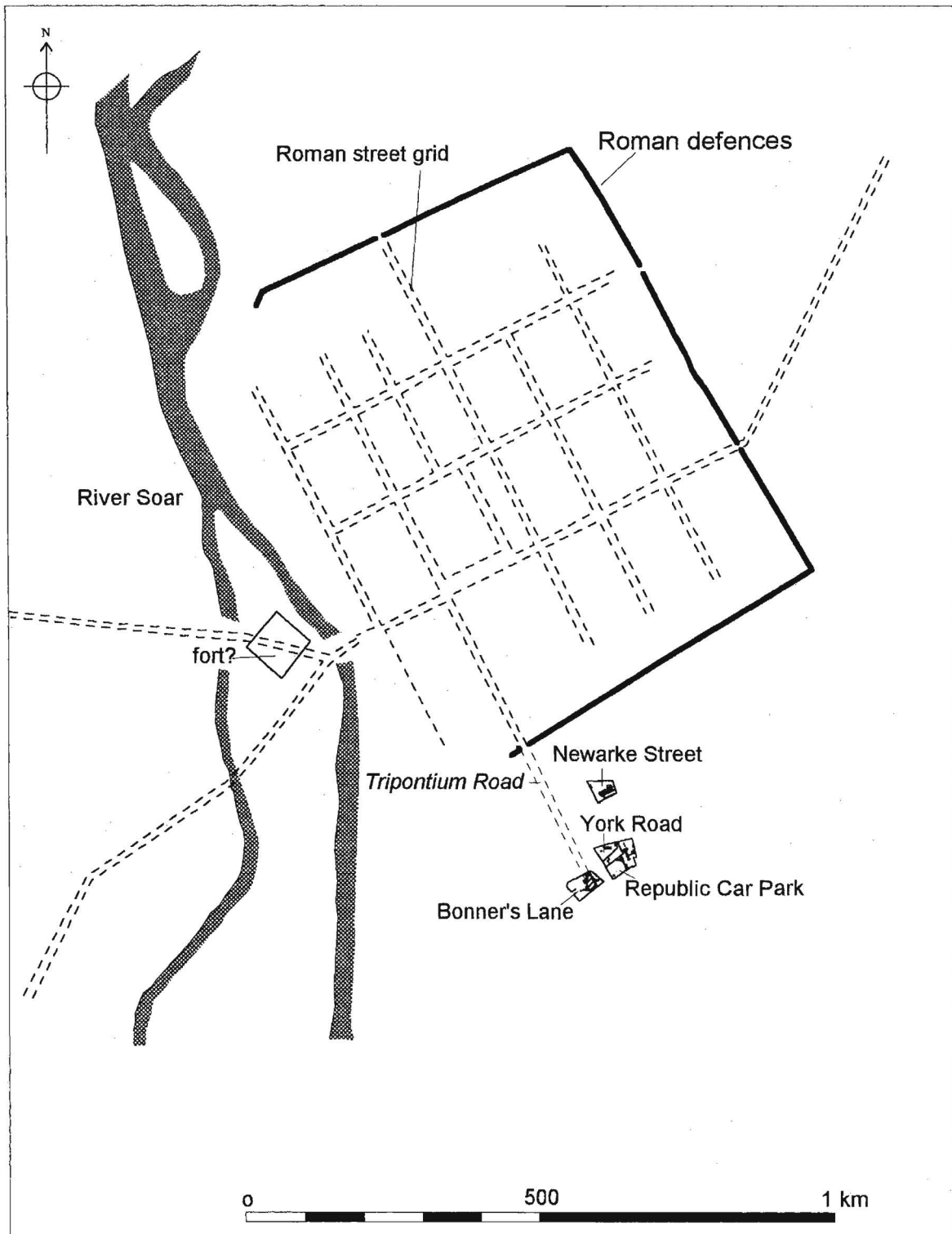
An archaeological excavation was undertaken by University of Leicester Archaeological Services on behalf of J.P. and M.T.A. Brydon on the corner of York Road and Oxford Street, Leicester, in advance of residential development. The site lies approximately 250m to the south of the Roman and medieval town of Leicester (SK585 039) (figs. 1 and 2). Although the topography is generally flat, the site lies at the top of a gradual west facing slope descending towards the River Soar. The Ordnance Survey Geological Survey of Great Britain indicates that the underlying geology comprises Mercia mudstone, with occasional pockets of sand and gravel.

The proposed redevelopment of the site required an archaeological desk-based assessment in order to establish the archaeological potential of the area (Courtney & Gnanaratnam 1996). This concluded that the development area was situated in an area of high archaeological potential, comprising Roman cemetery and suburban occupation, Anglo-Saxon settlement and medieval and post-medieval suburban development (Courtney and Gnanaratnam 1996, 6). Situated to the north of the public house formerly known as 'The Olde Bowling Green', the site was close to areas of known archaeological importance. Excavations have since taken place 30m to the south and to the east of the site on the former Republic Car Park, revealing evidence for Roman domestic and cemetery activity, Saxon, medieval and post-medieval occupation. On the opposite side of Oxford Street, on the corner of Bonners lane, major excavations had revealed a Roman road and buildings, a Saxon building, and medieval and post-medieval occupation.

Subsequent archaeological evaluation of the site confirmed the presence of archaeological deposits, including Roman burials. Due to the nature of development and the relatively shallow survival of features, it was assumed that large scale disturbance of archaeological remains would occur. It was agreed that full excavation of the development area was necessary in order to establish the nature, character and extent of surviving archaeological deposits threatened by the development.



**Figure 1** Site location including sites in the vicinity



**Figure 2** Site location and sites in the vicinity in relation to Roman Leicester

## Development

Proposed development plans included the stripping of all overburden above the natural substratum and the excavation of trenches for strip foundations. The evaluation concluded that such development would have a considerable and detrimental impact on the archaeological deposits given the shallow depth of many of the remains, especially the burials.

## Methodology

Initial evaluation was carried out in January 1997. This was immediately followed by "open area" excavation. The aims of this subsequent excavation were to record and adequately sample any surviving archaeological deposits under threat of destruction by the proposed development.

Excavation was carried out by the removal of overburden and other modern deposits using a JCB with a 1.6m wide toothless ditching bucket. The stripping of these deposits was constantly monitored by an archaeologist.

All exposed areas were hand cleaned using trowels and shovels. Excavation and recording of archaeological features followed the standard procedures outlined in the ULAS recording manual. The graves were recorded in relation to two survey points usually above the head and below the feet outside of the grave cut. All finds encountered during excavation, such as coffin nails were located on a 1:20 plan and were levelled. The survey points were related to the site grid. Cleaned skeletons were sketch-planned *in situ* and photographed from an overhead position using targets (often the survey points) tied into the site grid.

Parts of the site had been truncated by 19th and 20th century cellaring and services, particularly along the Oxford Street frontage. Cellars were left in place since their depths were such that no archaeological deposits could have survived. Many of the services (pipe trenches) were removed to provide a 'window' into archaeological deposits. An area along the southern extent of the site was left unexcavated and used to stockpile spoil. This area was investigated by a watching-brief during initial groundworks.

The majority of features were sampled by half section. Excavation did not continue where deposits exceeded 1.2m in depth due to health and safety considerations, or where deposits became waterlogged. These deposits were augered to establish depth.

During post-excavation analysis all features, including graves were assigned feature numbers, prefixed with 'F'. These were used to encompass the cut and fills of each ditch, pit, post hole or gully. In the case of the graves, the feature included grave cut, skeleton and backfill. Numbers in parentheses represent the number of pottery sherds.

Unless otherwise mentioned, the natural subsoil through which the earth-fast features were cut comprised reddish pink - orange Mercia mudstone. The nature of this natural substratum resulted in excellent definition of the majority of features, which on the whole had been backfilled with dark clay soils.

## Results

### *Summary*

Excavation has identified activity occurring on the site from the late first century AD until the present day. These phases of activity are presented in order of their archaeological sequence from earliest to latest

Phase 1 comprises several Roman ditches probably defining plot layout to the east of the Roman road from *Tripontium* to Leicester's south gate. This appears to have taken place during the late first or second centuries. These were superseded by three Roman burials (Phase 2), one of which contained a small jar placed next to the head. A grave containing the complete skeleton of a dog and no human burial was also excavated. Analysis has shown this to be a small hunting breed, perhaps similar to a Dachshund. Incised marks on a bone below the ear and made by the point of a knife may indicate sacrifice. The combined traits of grave goods, orientation and animal sacrifice/burial suggest that this was a pagan cemetery, perhaps used during the fourth century AD.

Occupation of the south suburbs in the 12th and 13th centuries (Phase 3) was represented by the remains of a building fronting onto Oxford Street. This comprised stone foundations of east and west facing walls, a cobbled surface and a slate capped drain probably of 12th or 13th century date. More intensive occupation was indicated by numerous medieval cess and rubbish pits typical of 'back-yard' activity. This type of activity appears to have continued into the 14th – 16th centuries (Phase 4).

Phase 5 (17th century) activity comprised a large curving ditch adjacent to and running partially beneath the 'Fullback and Firkin' containing finds of Civil War date. This may be part of the defensive 'hornworks' reputedly dug in this area during the siege of Leicester, and was similar to a ditch seen during the Bonners Lane excavations (Finn, forthcoming) on the opposite side of Oxford Street.

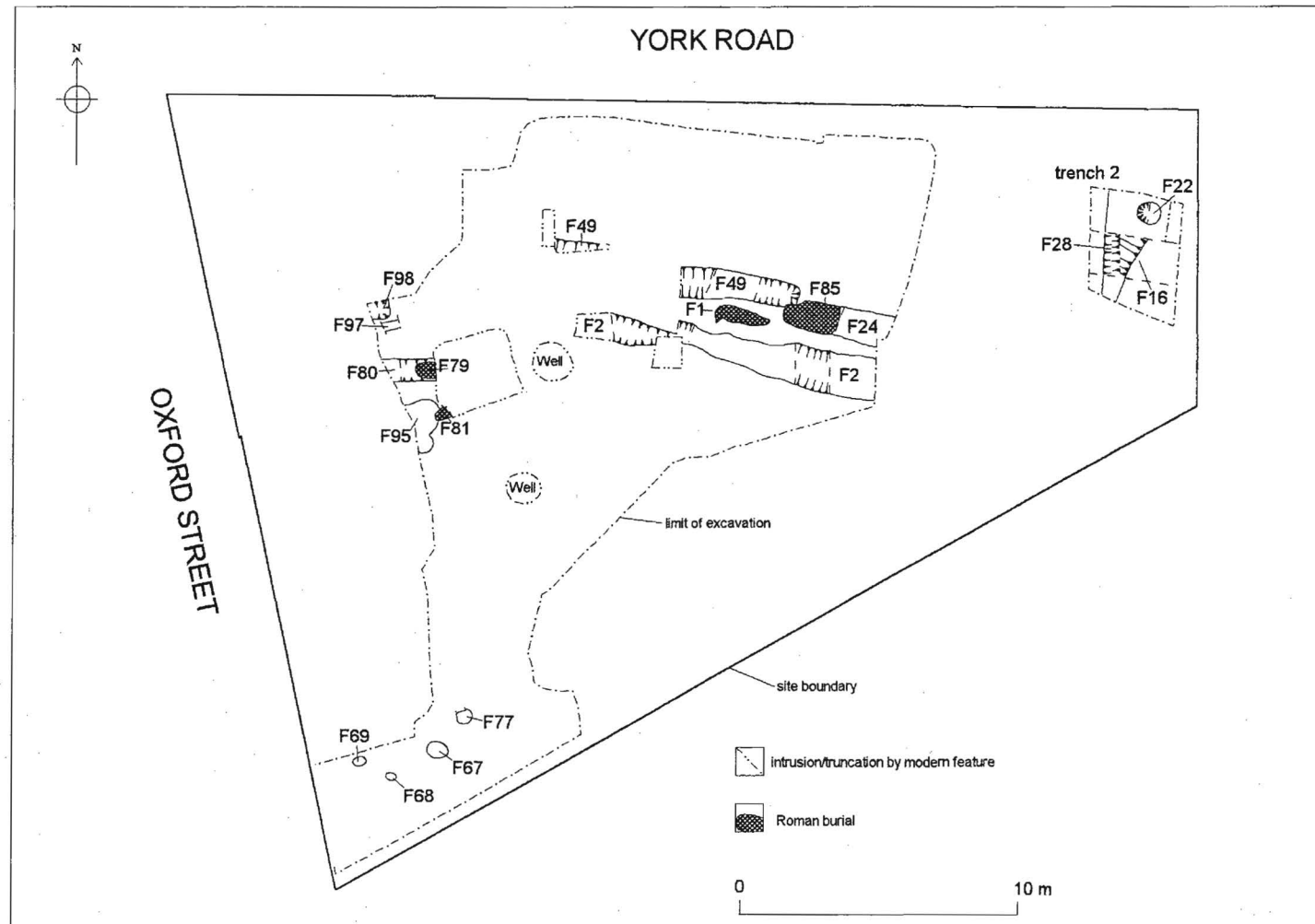
### *Phase 1: the late first to second century (fig. 3)*

#### *The ditches*

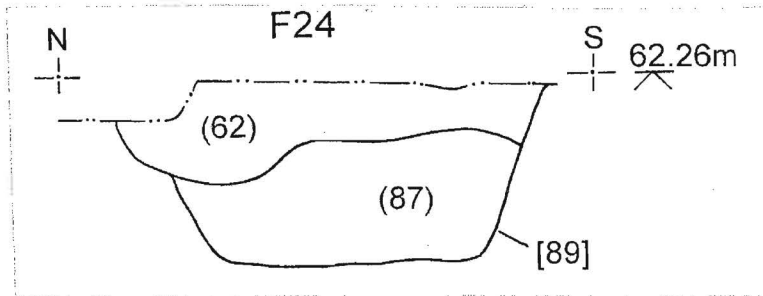
Late first to mid second century activity is represented on the site by two ditches orientated east-west, one ditch orientated north-south, and a number of pits and post holes.

F24 comprised a truncated ditch, up to 0.60m deep cutting the natural subsoil, with a primary fill deriving from the natural erosion of the ditch edges (fig. 4). The ditch had been greatly truncated by medieval, post-medieval and modern activity. The primary ditch fill was a sandy silt probably representing the natural erosion of the ditch edges. The ditch profile showed gradual concave sides, with a slightly stepped northern edge. The pottery from the ditch (18) suggests a late first to mid second century date for the feature. A rounded termination of the ditch could be seen where it was truncated by F49, a ditch running away from F24 towards the east (fig. 5). The relationship between the two ditches had been obscured by the later insertion into the backfill of F 24 of grave F85 (see below).

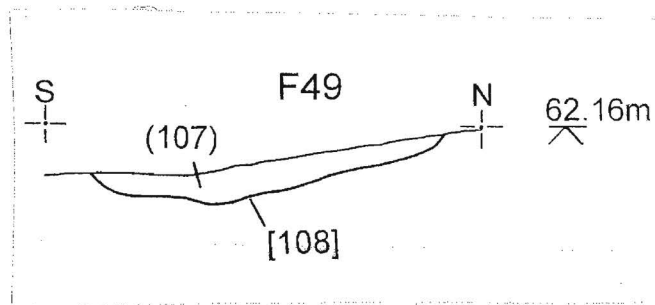




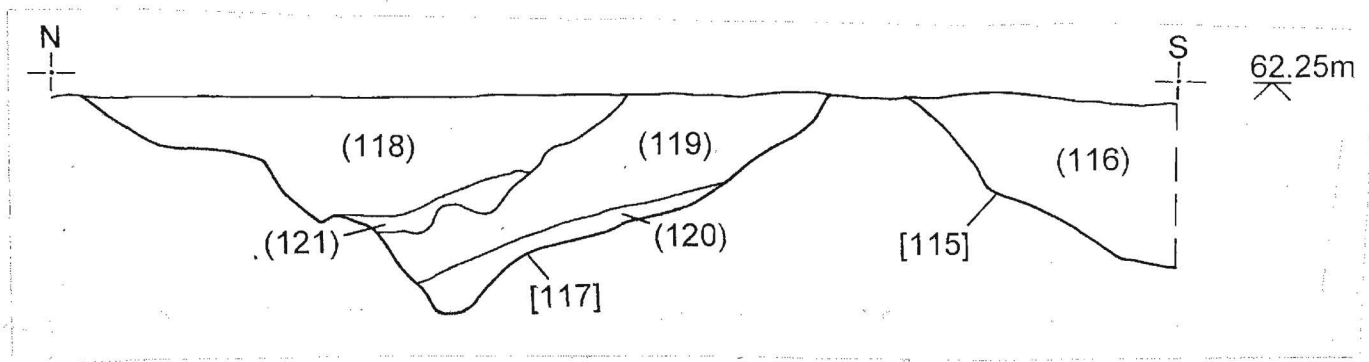
**Figure 3** Phase 1 and 2: Late first to fourth centuries



**Figure 4** West facing section of F24 (Scale 1:20)



**Figure 5** East facing section of F49 (Scale 1:20)



**Figure 6** West facing section through ditches F2 and F49 (Scale 1:20)

A hand-drawn plan of the site, oriented with West (W) at the top and East (E) at the bottom. The plan shows several numbered areas: (36), (26), (40), (22), (37), (28), (29), (38), and (27). A brick wall is indicated on the left side, and a brick area is marked with a hatched pattern. A pipe is shown on the right side. The plan also includes labels for 'relationship unclear', 'F20', 'F28', 'F16', 'F19(modern)', and 'F14(modern)'. A scale bar at the bottom right indicates a distance of 62.36 units.

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Ditch F2 ran roughly parallel to and immediately to the south of F49 and F24. It had irregular but gradually sloping sides and a flat base, and could be seen intermittently where not truncated by later features (figs. 6 and 7). Again the fill comprised a sandy silt with scarce inclusions, compatible with the natural erosion of the sides. Roman pottery (2) from the fill was undiagnostic. The ditch had been truncated in many places by later activity.

The two ditches may have formed a double-ditched boundary.

Perpendicular to these ditches and possibly part of the same boundary system was F16, a ditch on a north-south alignment visible in trench 2 at the eastern end of the site (fig. 8). The ditch had steep sides and smooth, rounded base, with a clean sandy clay primary fill and a sandy clay and charcoal rich secondary fill. The fill contained second and third century pottery (15). This ditch had been largely recut by later (fourth century?) recut F28. The primary fill was consistent with the gradual erosion of the sides and contained pottery (9) dated to 120 AD onwards. The secondary fill of the feature, a greyish brown sandy clay with small pebbles and abundant charcoal flecks may indicate the deposition of occupation debris. This fill contained pottery dated to the third century (6).

#### *The other features*

A distinct group of possible Roman features were revealed in the south-west corner of the site. None of these features contained diagnostic Roman pottery, and have therefore been assigned to this phase tenuously. The features could be regarded as contemporary in view of their spatial relationships.

F77 was a small sub-circular post hole, with a steep western edge and a more gradual concave eastern edge and an irregular base. The fill comprised a mixed deposit of sandy silt and lumps of Mercia mudstone, containing three large granite stones, one of which had been dressed into a cube-shaped block. Surrounding these stones within the silt matrix were frequent rounded pebbles, possibly packed into position.

To the west of this could be seen a sub-circular pit F67, a shallow circular post hole F68 and a small sub-rectangular post hole or pit F69, containing undiagnostic mid second to fourth century pottery (7). To the west and perpendicular to this line of features was F70, a layer of sandy silt overlying the natural subsoil. This contained charcoal and undiagnostic Roman pottery (1). It is uncertain what this group of features represents.

Another group of features dating to this period were to the north and adjacent to the western limit of excavation where they had been truncated by the cellars.

F80 was a ditch at least 3m long running east-west. The eastern extent of the feature had been truncated by a modern tank, and by a 19th century cellar to the west. The northern limit of the feature was obscure, but it appeared to truncate an undefined Roman deposit, probably a large pit. Where the edges of the ditch could be seen, it was shown to have almost vertical edges breaking gently to a flat base, the fill comprising tip lines of sandy silt and redeposited natural Mercia mudstone subsoil. The fill contained late second century AD pottery (16). The ditch had been truncated by graves F79 and F81. Excavation of this feature was incomplete due to time constraints.

To the north could be seen two features, F95 and F97. These comprised what may have been a circular pit (much truncated) and a circular post hole respectively. F95 contained a primary fill of red/brown silty clay containing pottery dated to the late first to mid second century AD (2). Above this was a layer of redeposited natural clay Mercia mudstone, with an uppermost fill of grey/brown silty clay containing sherds of pottery dated to the mid second century AD onwards (14).

Excavation of F97 yielded pottery of mid second century date (12).

### *Discussion*

The ditches at York Road are most probably indicators of formal boundaries defining areas of ownership and land use in the south suburb of the Roman town. These plots were probably established at some point during the second century, laid out adjacent to the *Tripontium* road (dated to the early second century) as it approached the south gate of the town. The establishment of a regular street grid in the late first - early second century, and construction of formal defences in the late second - early third centuries (Buckley and Lucas 1987), strengthened or defined the distinction between urban and suburban occupation. The pattern of suburban boundaries may even have been influenced by the street grid of the Roman town (Cleary 1987, 75).

The ditches are likely to have defined field systems or plots which may have included some form of occupation closer to the road. Although the ditch alignments are not perfectly perpendicular to the *Tripontium* road, this may be a result of the short lengths observed, and minor variations may not be that significant. It is possible that the plots respected a different topographical feature, such as the Gartree road, which may have entered the town from the south-east (L. Cooper pers. comm.). Ditches revealed at Great Holme Street respect the alignment of the suggested route of the Fosse Way as it approaches the West Bridge, defining similar roadside zones in the western suburbs (Lucas forthcoming; Higgins 1998, 14).

It is possible that the other features dated to this period are indicators of domestic activity towards the rear of these properties. The land therefore may have been enclosed in order to form a roadside property that could include space for livestock, agriculture and residency. It is likely that properties beyond the Roman defences were distinctly rural compared with those within the town, taking the appearance of farmsteads with associated field systems (Cleary 1987, 77). This form of roadside settlement is common in smaller rural settlements such as Ilchester, where sub-rectangular enclosures at right angles to the road contained roadside buildings and ancillary structures and pits towards the rear (Smith 1987, 22-23). Similar ditches seen at the Bonners Lane site may indicate a similar function (Finn forthcoming), and ditches parallel to the Fosse way west of the town were observed at the Great Holme Street site (Lucas forthcoming) in addition to domestic features, possibly defining a roadside zone (Cleary 1987, 103). An undated Roman ditch was also noted on the Olde Bowling Green site on an east-west alignment. This had also been recut at later date. Further ditch systems have since been observed to the south on the Republic Car Park, Oxford Street site (Gossip 1998). It has been suggested that the shape of suburban plots may have been influenced by the street grid, and therefore tending towards the square or rectangular (Cleary 1987, 74), and this may have been a determining factor in Leicester's suburbs. It is clear at least that the most common form of extra-mural settlement of large towns is ribbon development along the major roads, and that settlement in such places could be encouraged and sustained by the

volume of trade using the major approach roads. Similar development has been seen in the extra-mural areas of a number of towns such as Alcester, Colchester, Winchester and Mancetter, in the form of ribbon development alongside major approach roads. Much of this development and the expansion of towns beyond their defensive boundaries have been seen to occur in the second century (Cleary 1987, 173).

It is unclear how long these boundaries continued in use, although the fills indicated the gradual erosion of the ditch sides. Ditches F16 and F2 showed evidence of re-cutting and therefore maintenance of these property boundaries. Although no dating evidence later than the late third century was recovered from the fills, it is likely that ditches F49 and F80 survived as visible boundaries into the fourth century, since fourth century burial F1 is seen immediately to the south of and parallel to ditch F49, and burial F79 cuts the backfilled ditch F80. The recutting of ditch F16 by F28 also suggests that an eastern boundary survived at the time of the cemetery.

The exact function of the additional features from this phase is unknown. The structural nature of post holes F68, F69 and particularly F77 suggests that some form of ancillary building may have existed here, possibly for agricultural purposes.

All features are contained within the zone to the south of ditch F2, suggesting a focus of activity, perhaps domestic, in this area.

### ***Phase 2: the third - fourth Century (fig. 3)***

#### ***The inhumation graves and re-cut ditch***

Three inhumation burials were revealed on the site, all truncated by later activity. An additional grave cut was seen (F85), but the fill was devoid of human remains. The skeleton of a small dog was seen at the bottom of the grave cut, lying on the natural subsoil. The grave appeared to have been inserted into the backfill of ditch F24. A possibility remains that an inhumation present within this grave was subsequently disturbed due to truncation by later features, although it is equally possible that the grave had never contained a corpse. The head of the individual in grave F1 (fig. 9) had been placed to the west, and the orientation of the grave is therefore described as west - east (after Viner and Leach 1982, 76). Grave F81 (fig. 11) had been heavily truncated, but could be seen to be on a west-south-west - east-north-east orientation following the same convention. In grave F79 (fig. 10) only the lower legs survived, and showed it to have been orientated east - west. All grave cuts were shown to have been truncated both horizontally and vertically, and it is likely that the cemetery was of greater size than indicated by the surviving burials. The presence of disturbed human bone and possible coffin nails in the fills of medieval and post-medieval features supports this assumption, although the precise location of these burials is impossible to establish. The full skeletal analysis is presented below in a report by Simon Chapman.

### *Description of graves*

#### **Grave F1 (281): Male (?), 23-40 (?) years. Orientated west-east (fig. 9)**

The grave had been badly horizontally truncated and as such bone survival was very poor. At the less disturbed western (skull) end, the presence of five nails suggested that the individual had been placed in a coffin. The grave had been backfilled with dark grey/brown sandy silt and clay, but there was no evidence of the differentiation between coffin and grave backfill. The surviving grave showed a linear cut with almost vertical sides. The base was a little irregular, with possible evidence of a ledge cut into the subsoil on which the head had been placed. A small burnished grey ware jar, possibly of a late third – fourth century date had been placed immediately to the south west of the head. The corpse had been laid in an extended supine position. Due to the poor representation of bones, it is unclear whether the arms had been placed alongside, or across the body. The head had probably been positioned pointing upwards.

#### **Grave F85 (217): No human inhumation. Skeleton of dog present at base of cut.**

The grave was a vertical sided quadrilateral feature, broader at its western end, and was on an east-west orientation. The grave appeared to have been cut through the backfill of second century ditch F24. The fill comprised a dark silt consistent with deliberate backfill, and contained several human cranial fragments in its uppermost areas. These may represent the remains of a disturbed burial, since the feature had been truncated by two subsequent shallow gullies. Three possible coffin nails were also recovered from the fill, but it is not clear whether these were from the lower or upper fills. The lower fill also contained fourth century pottery (3). The complete skeleton of a dog was found on the base and in the centre of the grave cut. The dog appeared to have been placed deliberately and was orientated north-east to south-west, with its head to the north-east.

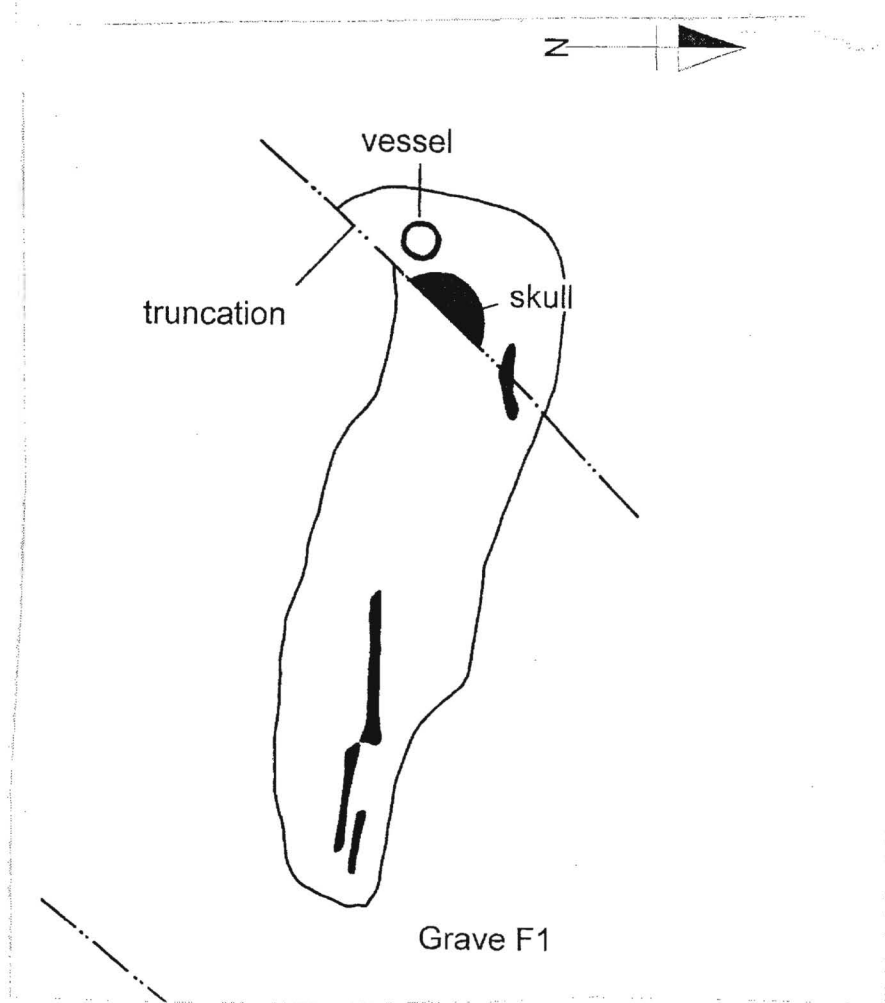


Figure 9 Plan of Grave F1 (Scale 1:20)

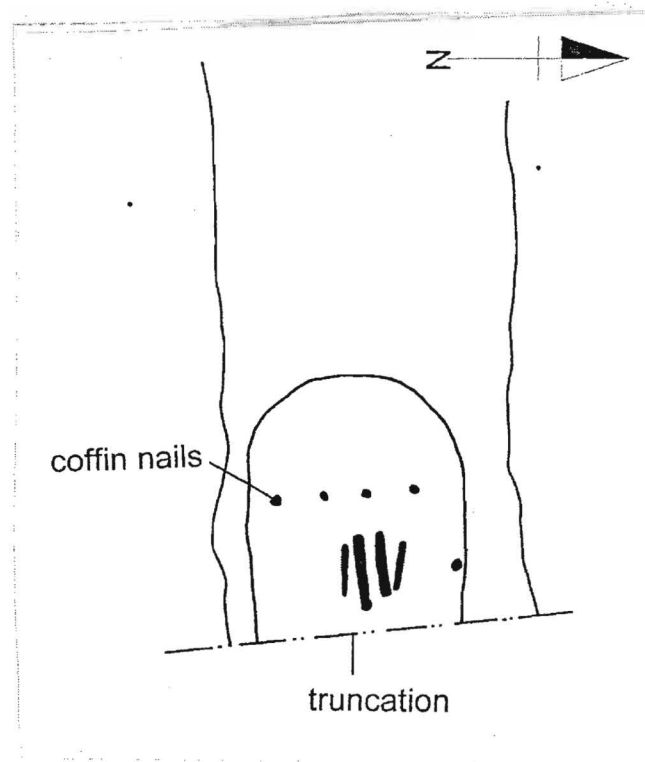


Figure 10 Plan of Grave F79 (scale 1:20)

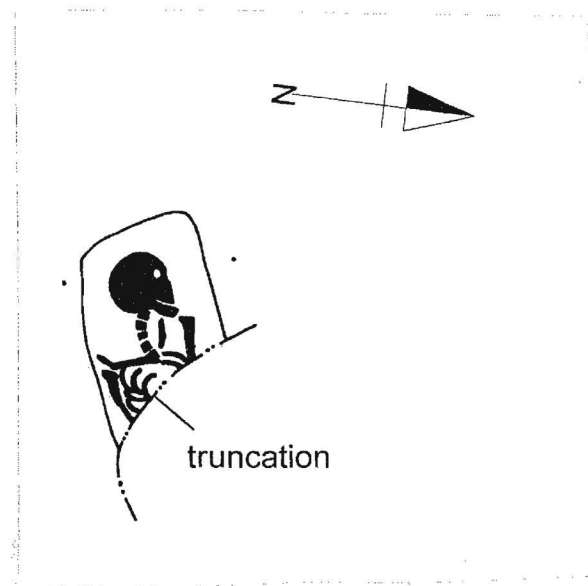


**Grave F79 (235): Sex indeterminate, 5 years. Orientated east - west (fig. 10).**

The grave comprised a cut with near vertical sides and a flat base. The feature, and consequently the burial, had been truncated by a modern tank to the east, leaving only the lower legs surviving. The feet had probably not survived due to the fragility of juvenile bones. A row of coffin nails to the west and above the surviving bones however, suggests that the individual had been orientated east - west in an extended supine position in a coffin. The fill indicated deliberate backfill and contained fourth century pottery (3). The grave was cut into the backfill of a second or third century ditch feature F80.

**Grave F81 (207): Sex - Female, 30-40 years. Orientated west-east (fig. 11).**

This was situated to the south of F79 and was also truncated by the modern tank. The grave cut had vertical sides and a flat base. Although the burial had been badly truncated and only survived from the chest up, it was seen to be lying in an extended supine position on a west-east alignment. The arms appeared to have been placed by the sides. Although no pottery was recovered from the fill, the grave is assumed to be contemporary with the others on site.



**Figure 11** Plan of Grave F81 (Scale 1:20)

Also occurring in this phase appears to be F28, the recutting of ditch F16 (fig. 8). This was seen to have gently sloping sides and a smooth, rounded base, and continued on the same alignment as F16. The fill was consistent with gradual erosion of the sides, and contained late third century pottery (37). The ditch is cut by F20 and F15, which probably resulted in the intrusion of 14th century pottery (3) in the fill of F28.

The only other feature seen on site dated to the fourth century was post hole F22, seen in trench 2 and adjacent to ditch F16. The fill contained fourth century pottery (5). The gullies truncating ditch F24 and grave F85 date to an unknown period of activity subsequent to the burials.

### *Discussion*

Little can be said in terms of cemetery layout from three burials. Since the burials respect the alignment of ditch F49, it is possible that this survived as some form of property boundary into the fourth century and contained the burials to the south. However ditch F24 had presumably been backfilled since grave F85 was cut into it. It is likely that ditch F2 had ceased to exist as a ditch but was still visible as a boundary by the fourth century since it is respected by grave F1. To the east, the boundary ditch F16/F28 may still have been apparent, and served as the eastern extent of a burial ground peripheral to the extensive Newarke Street cemetery to the north, previously discussed by Dare (1927) and Cooper (1996). Evidence for grave layout and orientation respecting the line of boundary ditches has been seen at Newarke Street site (Cooper 1996, 20).

The development of the cemetery alongside suburban roads follows a pattern common to many Romano-British towns such as Colchester and Wroxeter (Cleary 1987, 174).

The original density of burial on the site is unclear. Possible coffin nails and human bone has been recovered from later features distributed across the site suggesting truncation of earlier burials. A comparison of the depths of graves gives an indication of truncation during the medieval and post-medieval periods. Grave bases vary from 61.99m to 62.03m above Ordnance Datum, and were therefore of similar depth when dug (assuming that the original ground surface was level).

The orientation of the burials, the presence of grave goods and animal deposits suggests a pagan community carrying out the burials. Excavations to the south on the Oxford Street (Republic Car Park) site the following summer revealed a further eight burials, some exhibiting traits associated with peripheral burial (Gossip 1999), but the extent of cemetery activity to the south has not yet been established. If it is presumed that the York Road burials and the Oxford Street burials form parts of the same cemetery area, it might be suggested that the cemetery activity is becoming more pagan as distance from the town increases. Disturbance of graves during the Roman period is possible (grave F85), and nothing suggestive of grave markers is evident. In view of the weighting of burial criteria suggested by Watts (1991, 38-98), these attributes suggest a pagan custom.

A large number of Roman burials has been identified outside the southern wall of the town, all falling within what must be seen as a large extra mural cemetery area. Dare (1927) first attempted to identify the extent of the burial ground as 'an area bounded today by the lines approximately of Millstone Lane, Newarke Street, Pocklington's Walk, and the line of Oxford Street and Southgate Street' (Dare 1927, 33-57). The majority of burials have been found in the Newarke Street area, although apart from the large scale excavation on Newarke Street in 1993 (Cooper 1996) a large number of these arose from observations during construction work in the late 19th and early 20th centuries (Dare 1927), and those recorded may have been the more conspicuous examples. The York Road burials presumably represent a continuation, although not the full extent, of the southern cemetery.

Suburban cemetery activity is evident to the east (Higgins & Cooper 1997) and to the west of the Roman town (Lucas forthcoming), also in the vicinity of major approach roads or close to the defences. Extensive suburban cemeteries have been seen outside other Roman towns such as Cirencester, Winchester, Wroxeter and Dorchester.

### *Dating of the burials*

Only one of the graves (F85) had a stratigraphic relationship with other Roman features that suggests a date later than the second century. Graves F85 and F79 contained sherds of fourth century pottery, and the complete vessel from grave F1 was dated to the late third to fourth centuries (290 AD onwards). Despite the lack of datable finds, grave F81 is expected to be contemporary with the other burials. The spatial and stratigraphic relationships between the graves and the ditches reinforce this date.

A fourth century date is therefore suggested for the cemetery activity. This is consistent with the evidence from the Newarke Street cemetery and possibly other burials south of the town which have been predominantly inhumations (although much of this information is based on old and insufficient records). It has been suggested that the more common instance of cremation burials to the east of the Roman town in Churchgate, Gallowtree Gate and Humberstone Gate indicates an earlier date for this cemetery (Cooper 1996). It is generally considered that by the fourth century inhumation had replaced cremation as the dominant burial rite in the Roman world (Cooper 1996, 28; Watts 1991)

### *Coffins*

Coffin nails were recovered from all but one of the grave fills, that of grave F81. Only those from graves F79 and F1 were undisturbed. The truncated nature of the burials means that little can be said of coffin construction from the position of the coffin nails. It is possible that nails were used to consolidate a construction of timber joints (Cooper 1996, 23), as seen from a well preserved timber coffin from Great Holme Street, Leicester (Lucas forthcoming).

A number of iron objects, suggestive of coffin nails (based on similarities of form), was recovered from the fills of later features. Three coffin nails were recovered from the fill of grave F85. It is uncertain whether these were derived from the fill of the grave containing the dog, or from the fill of the gullies above.

Nails were also retrieved from the fills of Roman ditch F2, and from later pits F31, F83, F8, F66 and F10. These may indicate the disturbance of additional coffins.

### *Corpse orientation and position*

Despite the poor preservation of the skeletons, all corpses appear to have been laid out in an extended supine position. Arm position is unclear, although the position of the upper arms of the corpse in grave F81 suggests that they were placed by the side of the body.

Burials F81 and F1 were orientated west - east: i.e. with their heads at the western end of the grave cut. Although burial F79 had been disturbed to such an extent that only the lower legs survived, the presence of a row of coffin nails at the end of the grave cut (and therefore to the west of the position of the feet) indicates that the corpse had been orientated east - west, with the head at the eastern end. The feet had probably not survived due to their fragility.

The alignment of the graves broadly respects that of ditches F49, F24 and F16/28, all of which may have existed as boundaries of some form into the fourth century.

Although west-east orientation has been seen in some circumstances to represent a Christian burial rite (Watts 1991, 53-55), this is not thought to be the case at York Road. West - east burial may have been adopted in the fourth century as a response to a Constantine inspired pagan sun cult *Sol Invictus* (MacDonald 1979, 425-426). This appears to have occurred alongside both east-west burial (grave F79) and the deposition of grave goods (grave F1) and animals (grave F85). The existence of west - east burial alongside these other traits weighs heavily in favour of a pagan burial practice (Watts 1991).

#### *Grave goods*

Although the inclusion of pottery vessels with inhumations becomes rarer by the fourth century, those that do occur often appear at Romanised urban centres such as (in the Midlands) Derby, *Tripontium* (Philpott 1991, 106) and Leicester (Great Holme Street). An example from the third or fourth centuries has also been seen at the Roman small town of Goadby Marwood in north-east Leicestershire (Abbott 1956, 17-35). A number have been recorded from Leicester in the proximity of Newarke Street (Dare 1927, 33-57) although the precise location of these vessels in terms of their deposition with burials has to be treated with caution due to primitive recording techniques and the inadequacy of the records. The large cemetery to the south of Newarke Street produced no evidence for the deliberate deposition of vessels within graves.

The purpose of vessels as grave goods has been discussed at length, and they are generally considered as offerings to the dead (Philpott 1991 ; MacDonald 1979). Grave goods are considered to indicate pagan burial almost exclusively (Merrifield 1987; Watts 1991). The proximity of the vessel to the head in grave F1 suggests that it had been placed inside the coffin. Crummy (1993) suggests that the upright positioning of vessels may indicate that they were full at the time of deposition. This may have been the case with the vessel from grave F1, although there were no traces of food matter or other material.

No other grave offerings were evident at York Road.

#### *The dog burial*

The presence of animal remains is considered to be a pagan trait, since there appear to have been very few found in conjunction with west-east, undisturbed graves where the individual has been in an extended supine position (Watts 1991). It is unclear whether the dog found at the base of grave F85 had been placed in a grave without a human skeleton, although this appears likely and the few fragments of human bone are probably intrusive. If this is the case, the burial bears a resemblance to a grave excavated at the Roman cemetery at Lankhills, Winchester. Here a deep grave was excavated and found to have contained an empty coffin. The skeleton of a large dog was also found within the grave, perhaps originally placed on the coffin lid (Clarke 1979 p.83). The presence of a coffin is possible at York Road, since three coffin nails were recovered from the fill. However, these may have derived from the fills of features truncating the grave.

It is significant that this grave cuts the backfilled second century ditch. While the ditch had gone out of use by the start of burial activity, a boundary was presumably still visible, and probably influenced the siting of the grave.

The dog has significance throughout the ancient Mediterranean, Celtic and Germanic world, being associated with the underworld and the connected ideas of death, healing and fertility. These were important factors of ritual life both before and during the Roman period, and the dog may have been seen as necessary in providing help to the deceased in entering the afterlife (MacDonald 1979, 421-423). The significance of the deposition of a dog in an empty grave is less clear, though undoubtedly closely linked to superstitions surrounding the burial rite. It is possible that graves were dug on a large scale during the summer in preparation for an increase in mortality during the winter months, and due to superstitious beliefs (Cooper, pers. comm.). An open grave may have been seen as a convenient receptacle for the ritual deposition, eradicating the need to dig a special grave for the dog.

### *Phase 3: the medieval period - 12th to 14th centuries (fig. 12)*

Phase 3 is defined by three spatially distinct groups of features present in the south-west corner, the middle, and the north-west corner of the site. The remains of a building comprised two stone walls or footings, two cobbled surfaces, and a slate capped drain. Small pits or post holes within or outside the walls may either be associated with the construction of the building or indicate internal features, although there are problems with the relationships of these features. Two discrete areas of pits could also be seen with an additional area of pitting between them. These features were not excavated and therefore dates cannot be established. However, their visible characteristics, i.e. fills with indistinct edges, suggests that they represent at least three large intercutting pits, possibly truncated by the pits noted below. Similarities with other pits suggest they are medieval in date.

#### *The building and related features*

Two walls were revealed (F34 and F78) on approximate north-south alignments, positioned 4.20m apart (fig. 13). Both had been truncated by 19th century cellars to the north and ditch F7 to the south. Wall F34 to the west comprised granite and Dane Hills sandstone blocks, with an apparently dressed eastern face (internal), and a more roughly hewn western face (external). The wall was c.0.7m wide and stood one course high to a maximum height of 0.18m, the stones bonded with a sandy soil matrix rather than a true mortar. The wall was built on a bedding layer of clean sand and had no apparent construction cut, and therefore no foundation trenches. The wall had been badly truncated in its centre and possibly all along its eastern length, and it is therefore uncertain if the true western (external?) face survived. The position, orientation and composition suggest that it formed the medieval street frontage of Oxford Street. The wall may originally have been a dwarf-wall to support the sill beam of a timber-framed building.

Immediately to the west of the wall and on the same alignment was F71 (fig. 14), a linear cut into natural subsoil with concave sides which had been backfilled with large pebbles and bonded with clay containing 13th century pottery (2). Three circular depressions along the base of the feature may have represented post holes. The dubious stratigraphic relationship between wall F34 and F71 results in uncertainty over the function of the feature. It may constitute an earlier foundation trench and footings, or a drainage gully into which drain F37 emptied.

At right angles to wall F34 was a stone lined drain (F37) cutting both the wall and internal cobbled surface F38 (fig. 15). The granite and Dane Hills sandstone lining had been built into a vertical-sided linear cut and capped with roof slates, some with peg holes and consistent with other medieval forms from Leicester (Gnanaratnam, below). The drain fill contained sherds of 13th century pottery (4), and comprised green/grey silt. The slope of the drain base fell towards Oxford Street to the west. The function of the drain was probably to carry domestic waste away from this building towards the road, and possibly into F71 which may have acted as a roadside drain.

Wall F78 (fig. 13) to the east consisted mainly of granite blocks, some of which had both faces dressed and bonded with a loose sandy mortar and rubble infill/core. The wall, which was parallel to wall F34, was two courses high (0.22m above the cobbled surface) and two blocks thick (0.22m wide) and lay within a shallow construction



trench. Truncation by ditch F7 to the south and 19th century cellars to the north resulted in the preservation of only a short (1.30m) length of the wall. The wall almost certainly formed the rear wall of the medieval property fronting onto and probably parallel with Oxford Street (see discussion). It is likely that the original function would have been that of a dwarf-wall supporting a timber framed superstructure.

Between the two walls was cobbled surface F38 comprising mainly small rounded pebbles tamped into a silt and clay matrix. The surface abutted walls F34 and F78 and is considered to be contemporary. One sherd of pottery dated to the 14th or 15th century was recovered from the cobbled surface, which probably represents the internal floor of the building. Pits F67 and F88 truncated surface F38. Finds from the fills of these features were residual. It is uncertain whether this activity is associated with the use of the building, or related to later truncation after the building had gone out of use.

To the east of wall F78 could be seen another cobbled spread or surface (F61). The surface had been badly truncated to the north-east and south and abutted wall F78 to the west. The cobbles may have formed an external surface to the rear of the building.

F76 comprised a shallow circular post hole with an irregular base cut into cobbled surface F61. The fill contained pottery (10) dating from the second half of the 12th century onwards, and may have been a structural element of the building.

#### *The other features*

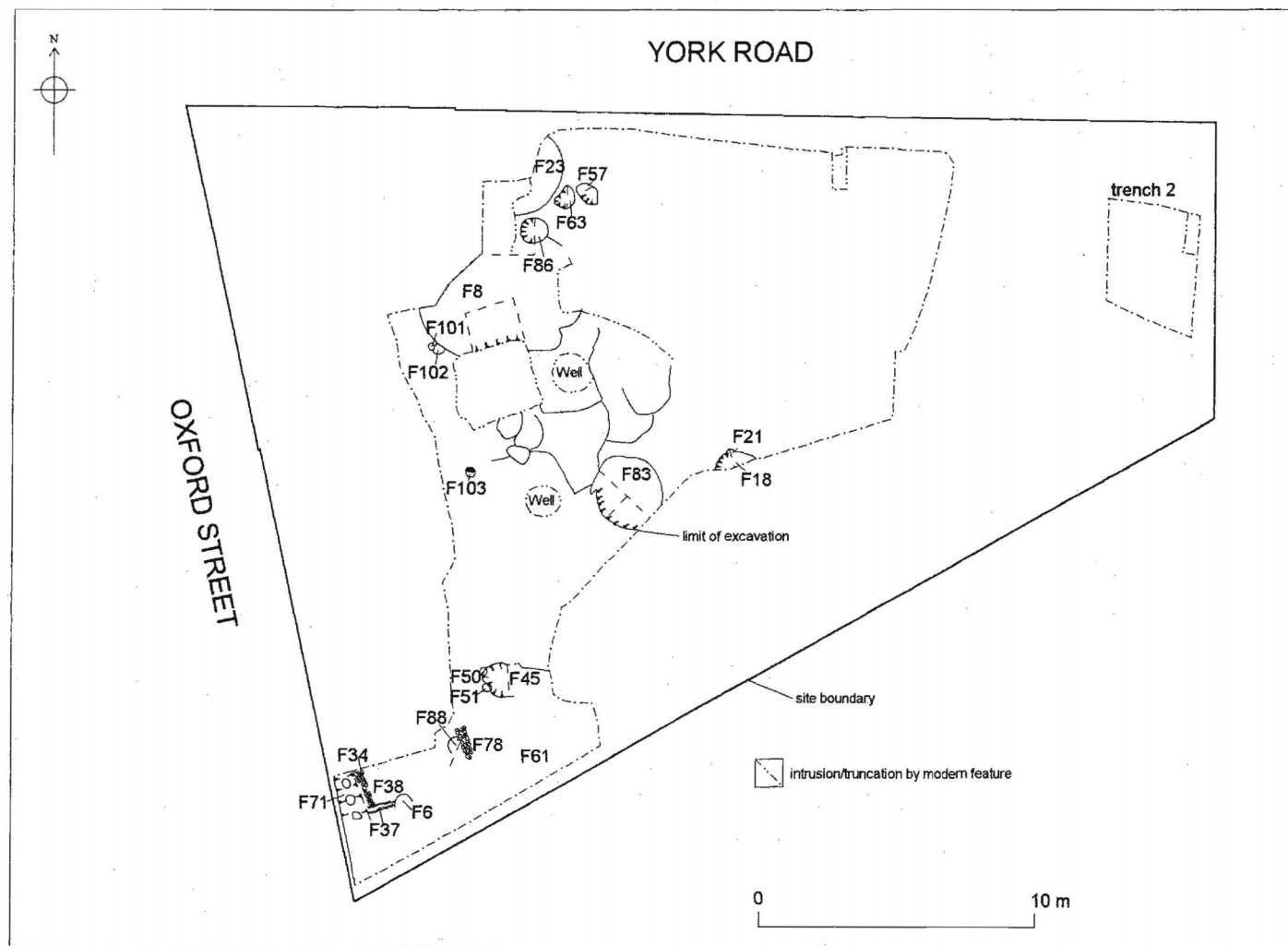
Adjacent to the rear of the building was F45 (fig. 16), comprising a shallow pit with steeply sloping sides and a flat base. The full extent of the feature was never established since it was truncated to the south by a 19th century wall, and extended beyond the limit of excavation to the east. In addition to sherds of undiagnostic residual Roman pottery (11) the fill contained pottery dated to the 12th or 13th centuries (11). Two post holes F50 and F51 were cut into the western edge of the pit and potentially relate to its function.

A distinct group of features could be seen to the north of the building. These comprised three circular pits and a small post hole, and while lacking stratigraphic relationships, may be seen to be contemporary on the basis of spatial relationship and similarity in finds date.

F103 comprised a small circular post hole containing 13th century pottery and tile (8). The post hole was discrete and did not appear to be part of a structure, unless this had existed further west in the area truncated by 19th century cellars.

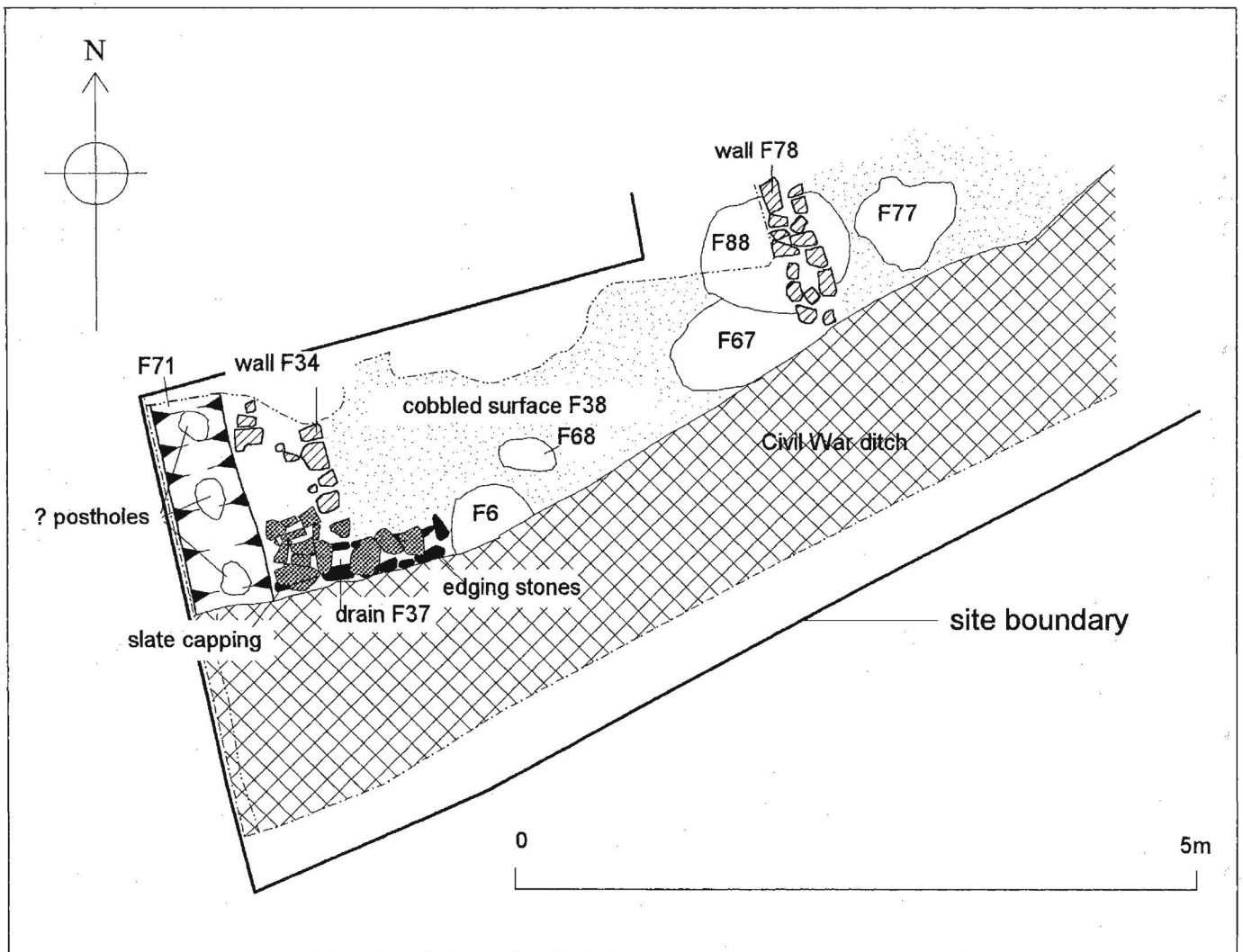
To the east of this was F83, a circular pit with steep sides and successive layers of fill separated by bands of Mercia mudstone (fig. 17). The green appearance of the fills suggested that these were deposits of cess. The feature was not fully excavated and therefore its depth not verified. Uppermost fills had been horizontally truncated by machine, and stratigraphic relationships with features to the north were never established. Pottery from the upper fill of the pit gave a 12th century date (27). The pit was very similar in form and composition to pits F23 and F8 to the north.

Further to the east was F18, a circular pit containing three layers of cess-like material and 13th century pottery (5) (fig. 18), cut by a later pit (F21) containing similar deposits and 12th or 13th century pottery (1). Both features had been largely truncated by 19th century activity.

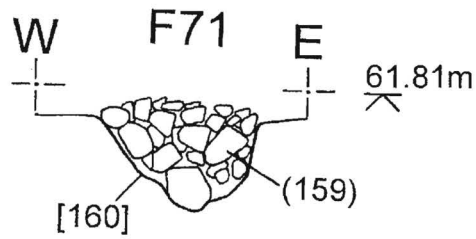


**Figure 12** Phase 3: 12th – 14th centuries

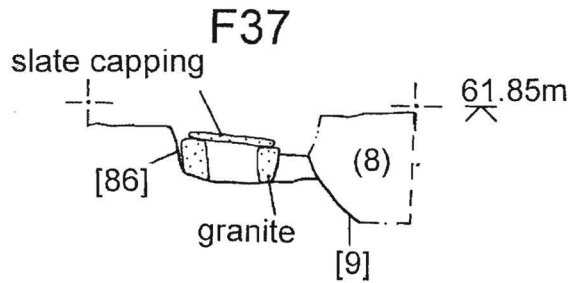




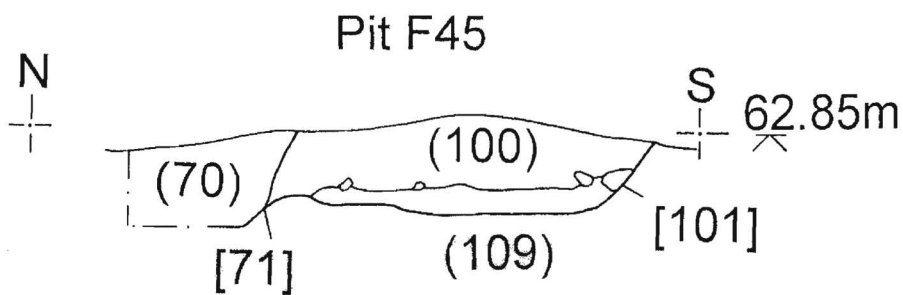
**Figure 13** Detail of medieval building



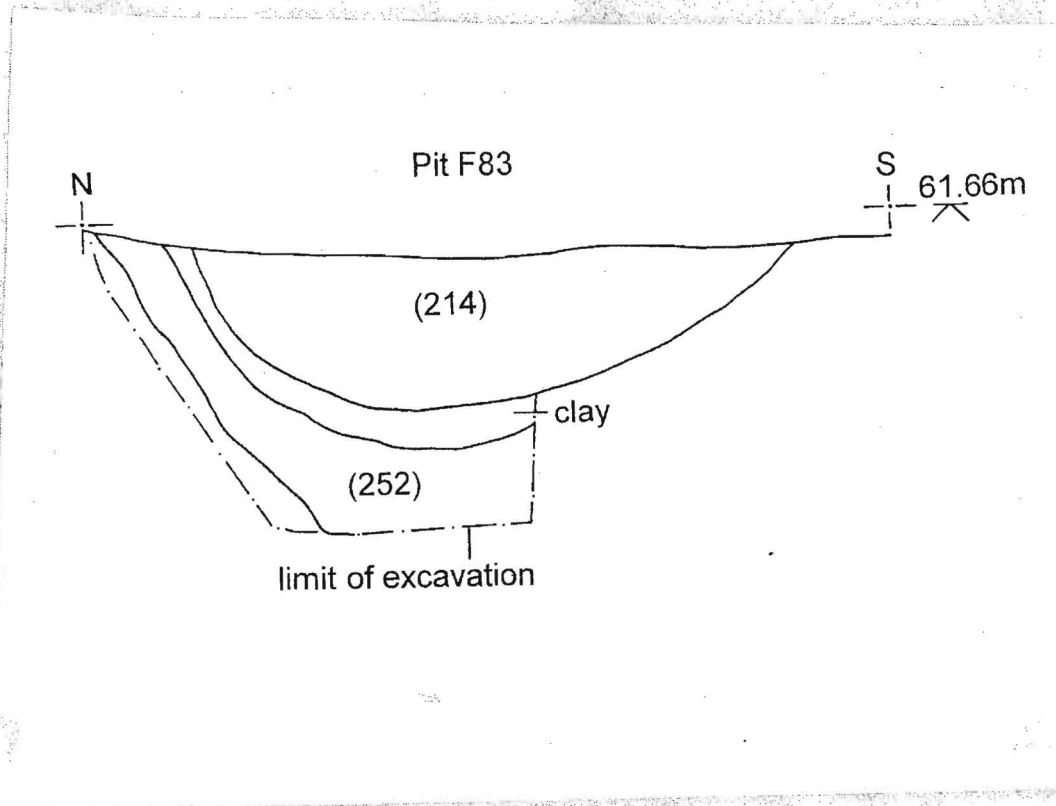
**Figure 14** South facing section of F71 (Scale 1:20)



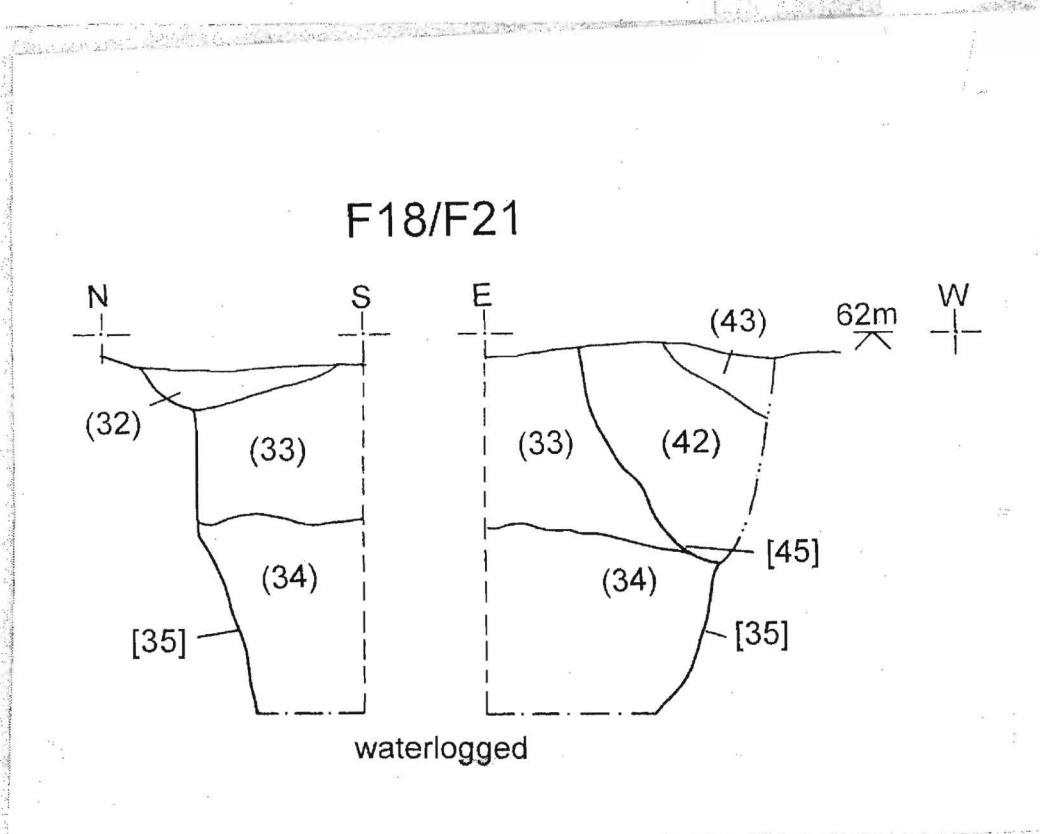
**Figure 15** Section through F37 (Scale 1:20)



**Figure 16** West facing section of F45 (Scale 1:20)



**Figure 17** West facing section of F83 (Scale 1:20)



**Figure 18** Sections through F18/F21 (Scale 1:20)

The group of features in the north-western corner of the site was dominated by F8, a large pit truncated on all four sides by later activity (fig. 19). The shape of the remaining original edges suggested that the pit had once been circular in plan, and perhaps had a diameter as great as 6m. An excavated section through the pit fills showed steep sides and cess fills separated by bands of redeposited clay (Mercia mudstone), thereby sharing similarities with cesspits F83 and F23. The pit was not fully excavated since it extended below 1.2m, but was augered to establish the depth of natural subsoil (c. 2.5m). The fills contained a large number of pottery sherds dated to the 12th or 13th centuries (130) and the 11th or 12th centuries (376). Pottery of Roman date was also present (40) as was that from the 15th century (6). The 15th century pottery was recovered exclusively from the uppermost fill and is considered to be intrusive, possibly deriving from the interface of pit F87. The Roman pottery is thought to be residual. The predominant pottery therefore suggests a date between the late 11th and 13th centuries.

To the north was F86, a shallow sub-circular pit of unknown function. The fill contained 12th or 13th century pottery (18).

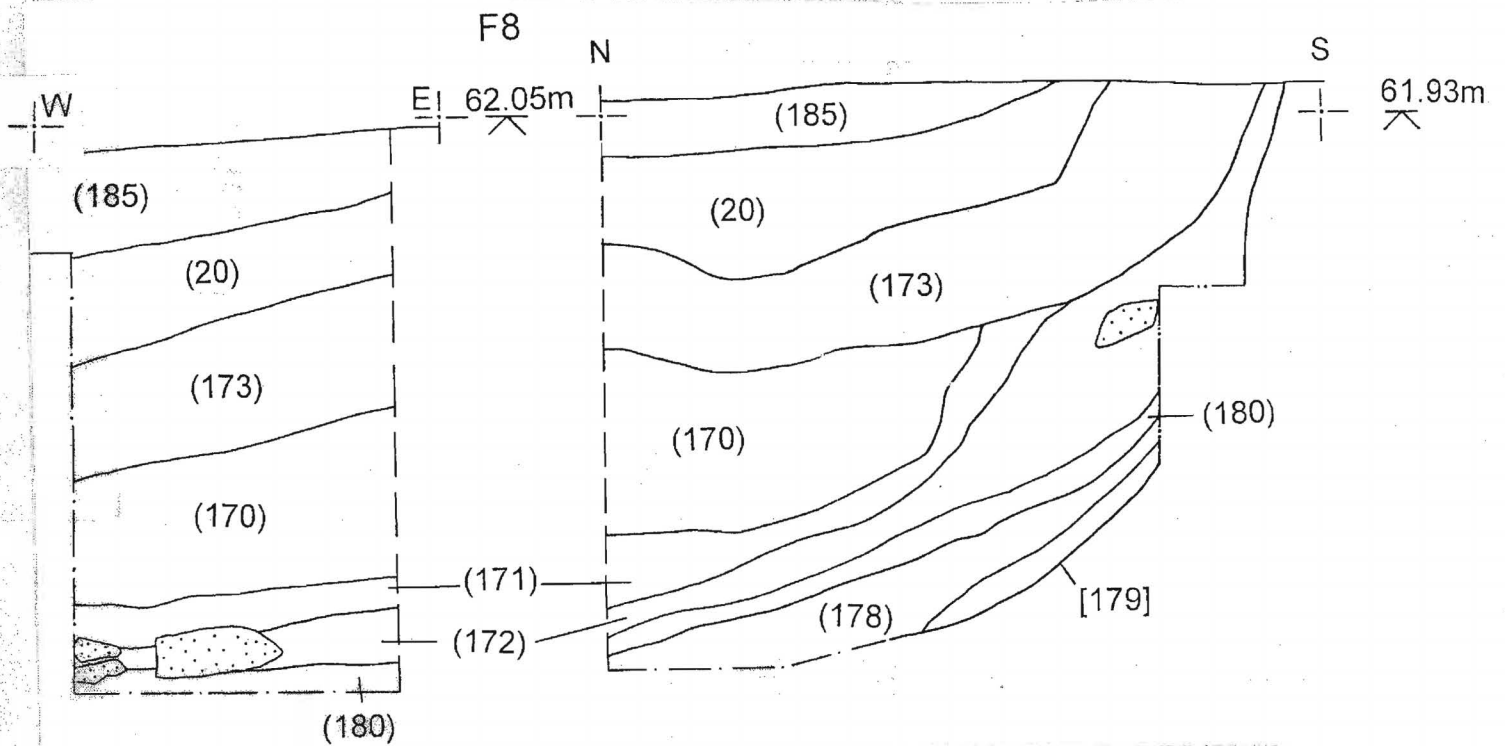
Adjacent and to the north of F86 was F23 (fig. 20), a deep cesspit, largely truncated to the west by a modern service trench and the rear wall of the 18th/19th century cellar. The pit would originally have been circular in plan with a diameter of c.2.5m and had almost vertical sides. The pit was not excavated to its maximum depth since this extended below 1.2m. Augering however revealed the base to be at a depth of c. 1.80m below the surface. The pit was filled by three cess fills separated by compacted layers of clay (Mercia mudstone) and as such was very similar to F8 and F83. Fills contained 12th and 13th century pottery (57) and residual Roman pottery (3).

A small circular pit (F63), of no obvious function, was revealed immediately to the east and contained 12th or 13th century pottery.

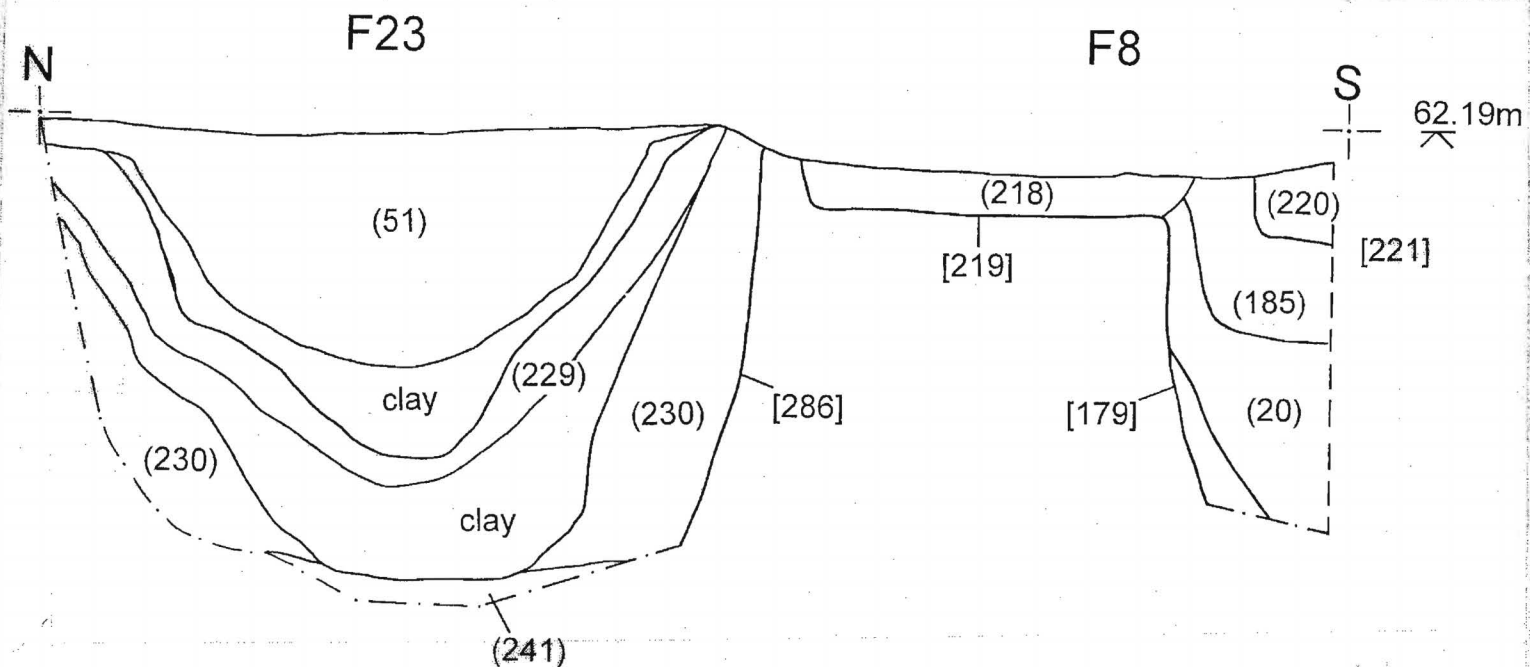
Adjacent to the east of this was post hole/pit F57, comprising shallow concave sides and a flat base. The fill contained sherds of 13th and 14th century date (3), and had been truncated by late 15th or 16th century pit F66.

The badly truncated remnants of two pits F93 and F94 could be seen adjacent to F8. The features were never excavated, and stratigraphic relationships must remain uncertain although F94 was seen to be later than second century ditch F74. However, both features did contain 12th or 13th century pottery (3 and 9 respectively) and may be regarded as contemporary with F8.

Three small features were revealed to the west of pit F8. These included F98, a gully or slot, and F101 and F102, both apparently post holes. Although only a short section of F98 was visible, the feature may have represented some form of structural slot and is possibly associated with the post holes. The evidence is too sparse to confirm the presence of a building, but some form of structure may be suggested. All three features contained 12th or 13th century pottery (11, 1 and 4 respectively). These features may also be associated with F103 and other post holes to the south.



**Figure 19** Sections through F8 (Scale 1:20)



**Figure 20** West facing section through F23 and F8 (Scale 1:20)

***Phase 4: the late medieval and early post-medieval period - 14th to 16th centuries (fig. 21)***

Continued activity in the 14th and 15th centuries was indicated by three distinct groups of features, all occurring in similar areas to the earlier medieval features. These included a section of wall and cobbled surface, a group of pits and a small group of post holes.

The remains of a possible structure was indicated by an 'L' shaped section of wall (F54) adjacent to the western limit of excavation, and an adjoining cobbled surface (F13) (fig. 21). The main portion of the wall was a short section on an approximate east-west alignment and bonded to a north-south return. The wall comprised granite with occasional Dane Hills sandstone blocks of irregular build, although the east-west wall did have a dressed northern face. The stones were bonded with a sandy mortar and clay matrix. The cobbled surface to the south of the feature abutted the wall and was composed of small rounded pebbles tamped into the underlying sandy silt and clay. The surface was sealed by a soil layer containing 15th or 16th century pottery (7), (perhaps a cultivation horizon), and earlier residual pottery from the 11th, 12th, 13th and 14th centuries. Both the wall and the cobbled surface had been truncated on all sides. It is possible that the structure, perhaps part of a building fronting onto Oxford Street, went out of use in the 16th century.

A few metres to the north-east of the structure was a linear row of pits. The westernmost of these was F73 (fig. 22), a large sub-square pit with vertical sides and a flat base, with fills containing 15th or 16th century pottery (4) and 12th or 13th century pottery (24). The stratigraphic relationship of the pit suggests that it is 15th or 16th century in date, and that the earlier pottery is residual. Pit F10 was situated to the east of F33 (phase 5). This comprised a long rectangular pit with vertical sides and a flat base, with numerous fills and lenses of charcoal and mortar rich silty clay. Although the primary and lower fills contained no dateable finds, pottery dated to the late 14th to 15th centuries (87) was recovered from the uppermost fills. Late medieval ridge tile (9) and a fragment of painted glass were also found in these layers. Adjacent to pit F10 was F9, a circular pit with vertical sides and a flat base (fig. 23). The relationship between the two pits was never firmly established. The five lower fills comprised a general silty clay with the uppermost fills contained large amounts of fragmented slate, mortar and animal bone as well as lenses of charcoal. These fills contained sherds of pottery dated to the 14th or 15th centuries (61), in addition to residual material from the 12th or 13th centuries. A small shallow circular pit was observed immediately to the north of and cut by pit F10. No pottery was recovered from the fill of the pit, although it contained fragments of mortar, slate and charcoal.

A further distinct group of features was exposed to the north-west of the above pits. These comprised five post holes, a possible post-pit and a shallow linear gully. F66 was the largest of these features, a deep sub-rectangular pit with near vertical sides and a flat base. The fill contained abundant animal bone, shell, and charcoal flecks, and sherds of pottery dated to the late 15th or early 16th centuries (43). The pit truncated F57, a 13th century pit. Extending westwards from the top of the southern edge of F66 was F82, a linear gully with sloping sides and a rounded base. This ran downslope towards the west.

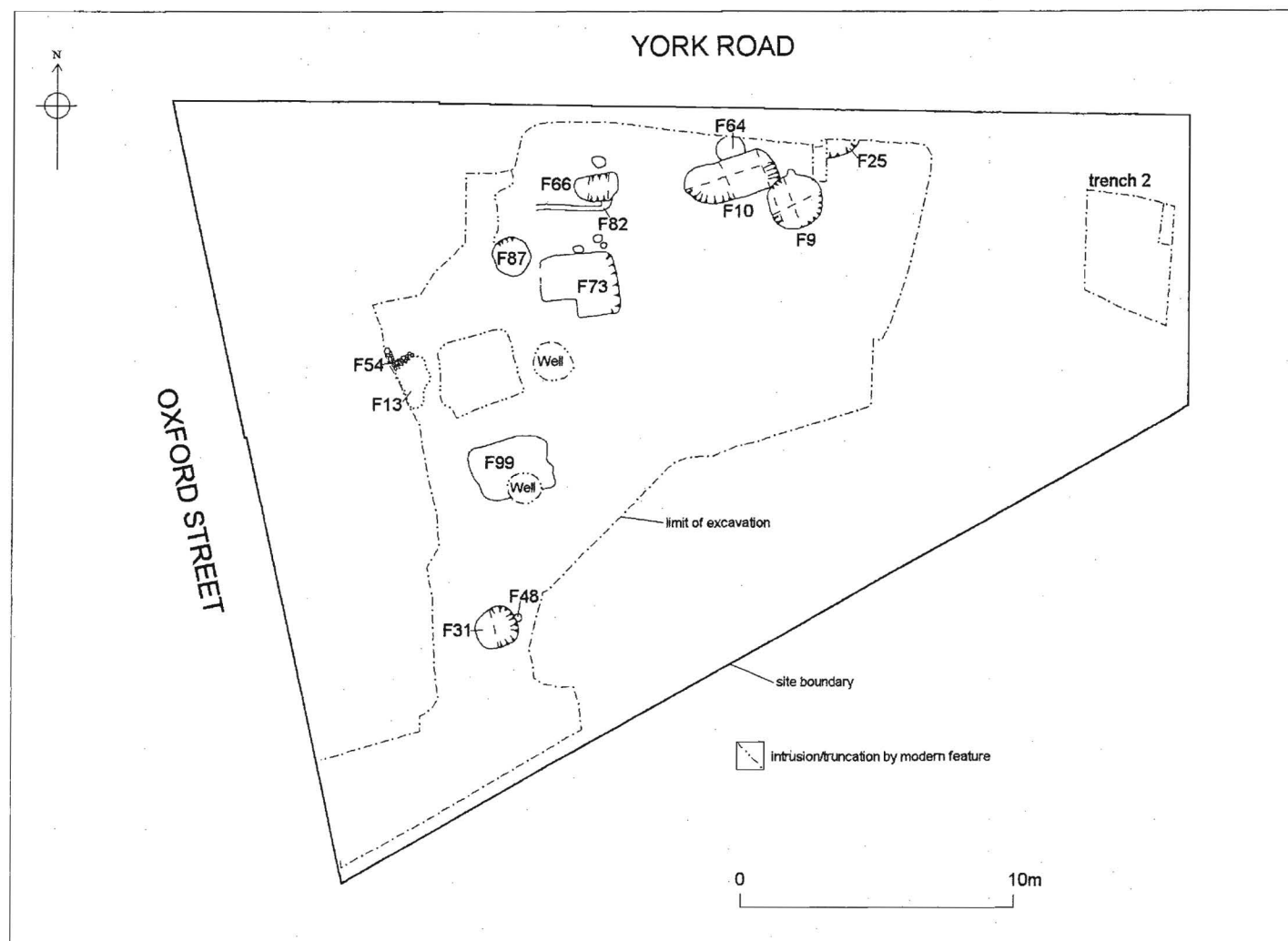
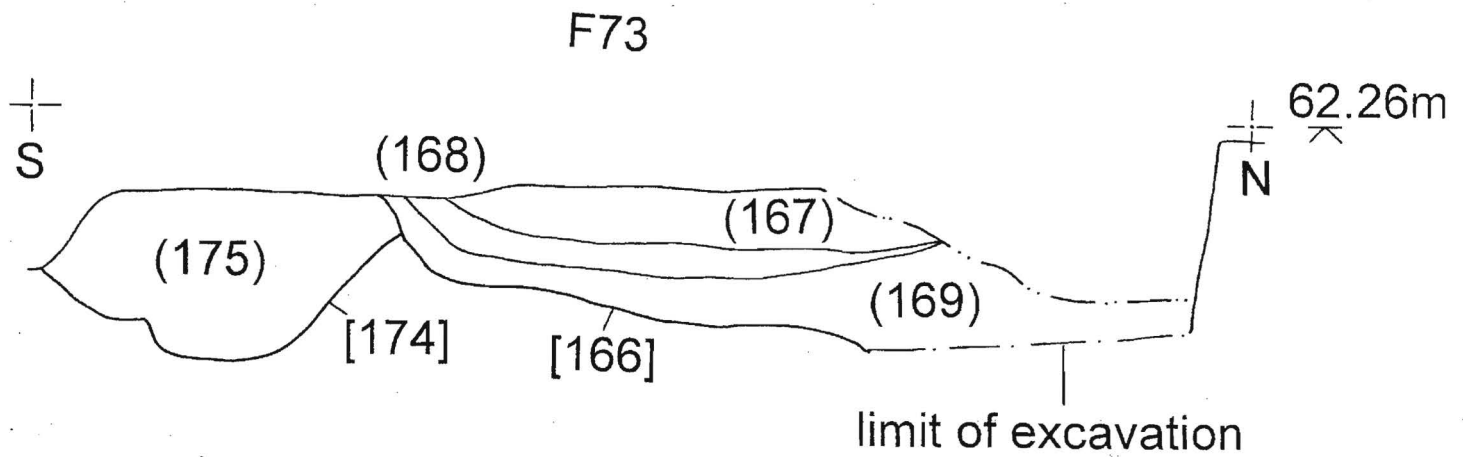
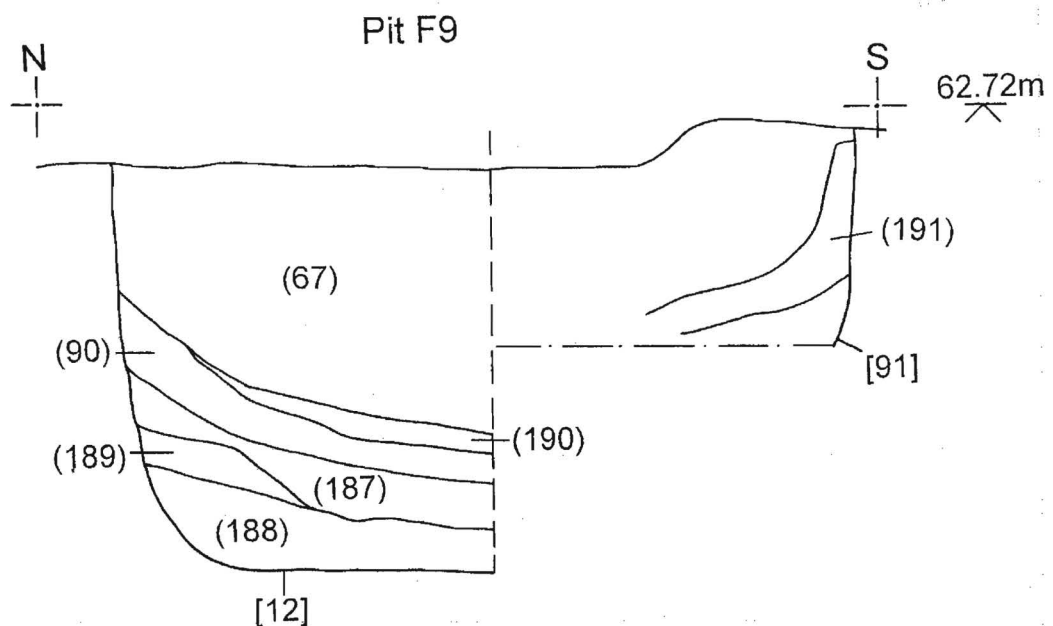


Figure 21 Phase 4: 14th – 16th centuries





**Figure 22** East facing section of F73 (1:20)



**Figure 23** West facing section of F9 (1:20)



Three post holes were revealed to the north of F66, adjacent to the northern limit of excavation. These were unexcavated but appeared to be truncating an insubstantial cobbled surface. Two unexcavated post holes were also seen to the south of F66. It is possible that this group of features defines a distinct area of rear yard activity associated with a property fronting onto Oxford Street. The post holes may represent a fence line retaining the area of cobbled surface. The pit is likely to have acted as a form of soakaway fed by the gully, which was backfilled with domestic refuse when it went out of use.

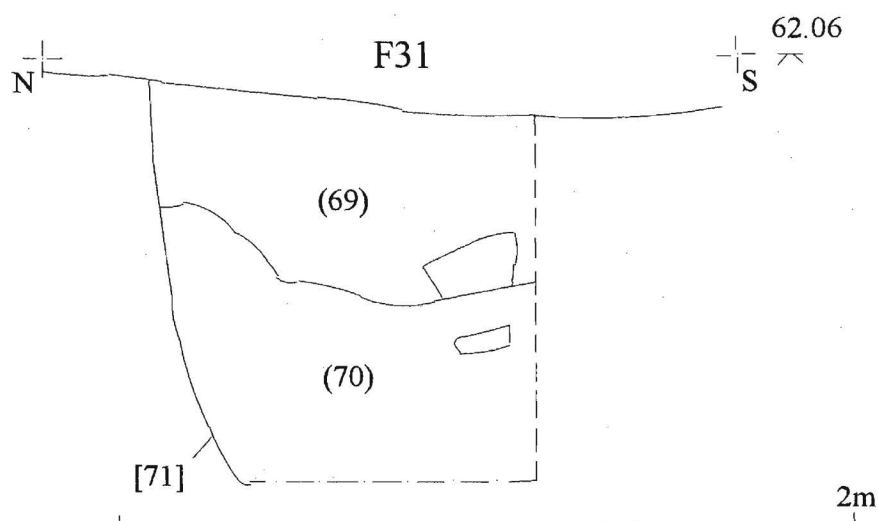
Also assigned to this phase was a group of three pits in a linear arrangement on a north to south alignment, spaced equidistantly.

F31, the southernmost of the features, comprises a circular pit with almost vertical sides (fig. 24). The fills comprised dark sandy silts and lenses of cess, containing charcoal, animal bone and pottery dated to the 16th or 17th centuries (4). Pottery from the medieval period (36) and the Roman period (1) was also recovered from the fill, but is thought to be residual.

A small post hole (F48) was cut into the eastern edge of the pit, and is probably contemporary and related to the function of the feature.

To the north could be seen F99. This was unexcavated although could be partially seen in section. The feature appeared to cut other pit fills or garden soils which were neither dated nor defined, and had been truncated on its southern side by a 19th century well. Pottery retrieved from the partial excavation of the feature dated from the 13th to the early 16th century (8). The pit also contained a quantity of iron slag identified as fragments of furnace and hearth bottoms.

F87 to the north comprises a shallow sub-circular pit truncating 12th/13th century pit F8. The fill, a mixed deposit of charcoal, mortar, sandstone fragments and slate in a silty clay matrix, contained sherds of 16th century date (9).



**Figure 24** West facing section of F31 (1:20)

### ***Phases 3 and 4 - Discussion of the 12th - 16th centuries***

Activity at York Road between the 12th and the 16th centuries indicates continuous occupation of this area of land fronting onto Oxford Street. While the only true building is indicated by the walls, surfaces and drains in the south-west corner of the site, all other features are consistently indicative of rear yard activity probably associated with additional buildings positioned along the remainder of the Oxford Street frontage. Any vestige of these structures was destroyed by the subsequent 18th or 19th century cellaring.

Different actions, often represented stratigraphically, have in places been assigned to the same phase. These actions may have been the backfilling, enlargement or re-definition of a pit within a short space of time and are therefore not considered to represent a truly separate phase. The use of pottery in the dating of pits is in any case problematic due to the high level of residuality or intrusion. Considering the constant occupation of the land for four hundred years with little change of land use, it is possible to discuss the entire medieval and early post-medieval period as a single phase.

#### ***The building (fig. 13)***

Pottery from the drain and structural elements suggests that the building was constructed in the 13th century. The lack of any pottery later than 15th century in date may indicate that the building went out of use at this time, although post medieval truncation may have affected the survival of later structural phases. The foundations of the building were certainly disturbed by the 17th century when stone was robbed from the frontage wall.

The insubstantial nature of the walls and lack of a true mortar suggest that they were not built to any great height. It is more likely that they formed dwarf walls supporting a timber superstructure. Examples of high status buildings built in this way survive today such as the Guildhall in Leicester. The earliest stone foundations built during the 13th century at St. Peter's Street, Northampton probably represented a building of this type (Williams 1979).

It has been noted that medieval buildings were generally positioned within a long and narrow burghage plot with their gable facing the street frontage. This was probably a result of the competition for space in built-up urban areas, especially within areas dominated by markets and other retail trades. The situation in extra-mural areas may have been very different. Despite the predominant accumulation of development along major approach roads and close to town gates, development in these areas is likely to have been more sprawling and less rigidly defined (Platt 1976, 54; Ottaway 1992, 179-180). This was probably the situation at York Road. The surviving foundations, if representing the front and back walls, would form a very short building (c.4.5m). It is more likely perhaps, that the building was positioned with the long axis facing the Oxford Street frontage. If the building extended towards the south, it would have been truncated by the 'Civil War' ditch F7, and subsequent development of the Olde Bowling Green public house. If the building continued towards the north, it would have been truncated by the post-medieval cellars.

Examples of suburban development of this type have been seen at the Hamel, Oxford. Here, buildings with stone footings supporting timber frames were positioned with their long axes parallel to the street frontage (Ottaway 1992 pp. 179-180).

### *The pits*

The evidence for occupation of the site between the 12th and the 16th centuries was characterised mainly by a number of deep rubbish or cesspits. The pits were either circular or square, with slight variations. They are presumed to represent rear yard activity of properties fronting onto Oxford Street, including that represented by the stone foundations, surface and drain in the south-west corner of the site. Many of the pits had successive episodes of cess deposition separated by cappings of clay which subsequently slumped into them. This was no doubt an attempt at maintaining sanitary conditions. There is little evidence from pits to suggest any industrial activity often associated with extra-mural sites as found at Bonners Lane nearby (Finn forthcoming).

The pits generally occurred within three spatially distinct areas, forming linear groups on approximate east-west alignments across the south-west corner, middle, and along the northern edge of the site. However, these clusters were obscured by a large mass of intercutting pits in the centre-west of the area that were not excavated due to time constraints. Similar pit formations have been considered to represent separate building plots (Connor and Buckley 1999; Schofield and Vince 1994, 64), and in this case may indicate the presence of separate properties fronting onto Oxford Street. However, techniques adopted at Causeway Lane to analyse the relationship between pits and plots do not work at York Road. Pits bear little correlation with 19th century property boundaries, form very weak plots on the grounds of alignment, and linear groups fail to fit the 'two pole' property measurement.

There is an abundance of examples of pit digging at the rear of medieval and early post-medieval properties. In Leicester, large circular or square rubbish and cess pits have been seen on urban sites such as Causeway Lane, Bath lane, The Shires and St. Nicholas Circle. In the south suburbs they have been evident at the adjacent sites of 'The Olde Bowling Green', Oxford Street Republic Car Park, and Bonners Lane (Finn forthcoming).

By the 15th or 16th centuries there appears to be a decline in pit digging on the site. This may have occurred as a direct attempt to improve sanitary conditions by the occupants of Oxford Street. It has been noted in medieval Southampton that cesspit digging was recognised as a health hazard as early as the 14th century when it was seen to decline (Platt and Coleman-Smith 1975). Here, inhabitants were ordered to keep unlined cesspits further away from neighbours' boundaries. This decline in pit digging has been seen on intra-mural Leicester sites such as Causeway Lane, with domestic waste perhaps being taken away from the town. A contributory cause may have been the threat of plague, prevalent between 1348 and 1485 (more than 30 outbreaks) which was believed to be spread by smell (Connor and Buckley 1999; Platt 1976, 101). The capping of cesspits with clay at York Road may have been an attempt to reduce smell, although there was no evidence of the use of lime as at Causeway Lane (Skidmore 1999, 342). The decline in pit digging may coincide generally with a reduction of activity in that area, at a time when the suburbs, and population numbers generally, may have been in decline (Courtney 1998, 116).

### *The medieval suburbs*

The evidence of building and rear yard activity suggests fairly intensive occupation of the south suburb, at least along the Oxford Street frontage. Similar contemporary activity from the site at Bonners Lane (Finn, forthcoming) supports this theory,

although these sites may have been on the very periphery of medieval extra-mural development. Recent excavations on the Republic Car Park site 30m to the south, indicate less intense domestic activity during the medieval period (Gossip, 1999). The study of extra-mural occupation of other medieval towns has concluded that suburbs often reached their state of maximum growth fairly early in the medieval period (Keene 1975). Leicester's population was larger in 1377 than in 1563, with the medieval suburbs representing a large proportion of this; in 1269-71 suburban dwellers made up 17% of the total population paying tax (Hoskins 1963, 40). The York Road/Bonnars Lane area may have defined the extent of the south suburbs at this time, when there may even have been a period of demographic contraction (Courtney 1998, 116), especially in marginal areas (Schofield and Vince 1994, 213).

There is strong documentary evidence for suburban development outside the south gate at least as early as the 12th century, although its extent remains unknown. A 12th century charter shows both burgesses and peasant tenants living beyond the south gate, the existence of a bread oven in 1204 is documented, as is a rent of hens (Courtney & Gnanaratnam 1996).

The earliest suburban development in most medieval towns in Britain is seen to cluster along major approach roads and around defences (Platt 1976), the commercial potential of passing, and possibly queuing traffic undoubtedly a factor (Keene 1975). This is likely to have been the case even before there was pressure for space within the town walls (Courtney 1998). The north-south axial street (now South Gate Street and High Cross Street) appears to have been the most important street as early as the late Saxon period (Courtney 1998), and south and north suburbs may have been the first to develop.

Although no medieval maps of Leicester survive, those of the 16th, 17th and 18th centuries give a good indication of the extent of Leicester's suburbs, which are unlikely to have grown since the 14th century. A map of Leicester made in the late 16th century (LRO BR/II/18/1) shows street frontage occupation, albeit schematically, outside all of the town's four gates. By 1610 Speed shows a well-developed street frontage extending south beyond Bonners Lane and possibly in the area of York Road. Suburban development along the frontages of major approach roads can be seen on the Speed maps of many medieval towns such as Coventry, Stamford, Norwich, Northampton and Hereford.

The growth of suburbs has been seen as an indicator of the increase of social stratification (Ottaway 1992). Certain rights and privileges allowed to urban dwellers may have been denied to suburban populations, and there is documentary evidence to support the theory of poverty in some towns such as Oxford (Ottaway, 1992, 177). Lay subsidies of 1524 and 1544 show the south suburb to have been the poorest in Leicester (Courtney & Gnanaratnam, 1996). The poverty of Leicester's early post-medieval suburbs has also been indicated by tax returns. Whilst the south suburbs may have had the densest population, in 1544 40% of the taxable population were assessed at the minimum level (£1). (Platt, 1976, 38; Hoskins, 1963, 43).

The evidence from Oxford Street is broadly comparable with that of other extra-mural sites. There is little evidence to provide a great deal of information regarding the social status or living conditions of the inhabitants of this part of the south suburb. The pottery assemblage and variety of plant remains is broadly comparable with those from other extra and intra-mural sites in Leicester.

*Industrial activity*

Unlike many other medieval suburban sites, including Bonners lane, there is very little evidence for industrial activity at York Road. A small amount of slag derived from furnace and hearth bases may indicate iron smelting/smithy activity in the vicinity, a practice often confined to extra-mural areas. The two 17th century pits may have been designed to hold water, but this may have been solely for domestic use.

***Phase 5: the 17th Century – demolition of the south suburb and the Civil War defences (fig. 25)***

To the east of F73 (phase 4) was F33, a square pit with vertical sides and a flat base (fig. 26). The pit had been cut through Mercia mudstone and apparent pick marks were visible in the eastern face. Below these handmade bricks (8 3/4" x 1 3/4" x 4 1/4") had been inserted into the side of the pit, possibly as shoring. The pit fills contained building/domestic debris such as tile, ash, charcoal and mortar, and sherds of pottery dating to the late 14th or 15th centuries (13).

Truncated by this to the south was pit F58. This cut pit F73 (phase 4) and contained a large number of brick and slate fragments, and ash deposits.

Truncation of the medieval frontage in the south-west corner of the site is shown by robber trench F32. This feature illustrates the robbing and/or demolition of the stone wall F34. The backfill of the feature contained 17th century pottery (73) in addition to residual Roman material (1).

Truncating this could be seen the northern edge of F7, a large ditch on a south-west - north-east alignment adjacent to the Fullback and Firkin public house (fig. 27). The ditch had a steep 45° edge and a flat base, assuming that the true base was seen and not a break in the slope. The ditch was 0.96m in depth, with a fill comprising clay silt with fragmented mortar, slate, clay and Dane Hills sandstone inclusions. Pottery and clay pipes dated to the late 17th or early 18th centuries were recovered from the fill (6) in addition to residual finds of Roman and 13th century date. Large fragments of Dane Hills Sandstone, possibly dressed were also found in the fill. The homogeneity and compact nature of the ditch fill suggests a single episode of backfilling. The ditch may not have been open for very long, and backfilled as a precursor to the redevelopment of the site.

A similar section of ditch was observed in trench 2 in the north-east corner of the site. Here F15 comprised a linear ditch on an approximate north-south alignment, with steep sides and a flat base, 1.10m in depth. Only the western edge of the feature was visible, since the eastern side had been truncated by 19th century activity. The fills were consistent with those of F7 and contained pottery pre-dating or contemporary with the Civil War (26). A watching brief on groundworks verified that the features were part of the same ditch, curving from the south-west to the north-east. Although the true width of the ditch was still not evident it was shown to be in excess of 1.20m. The width of the ditch indicates that it must be an earlier feature than the extant cellar of the Fullback and Firkin public house (formerly the 'Old Bowling Green').

*Discussion of the Civil War activity*

It is possible that by the time of the Civil War the south suburbs were in state of dereliction and semi-abandonment. This is illustrated by a reduction of activity at York Road after the 16th century. Following the final backfilling of pits in the 15th or 16th centuries most of the site seems to have been covered with a dark cultivation

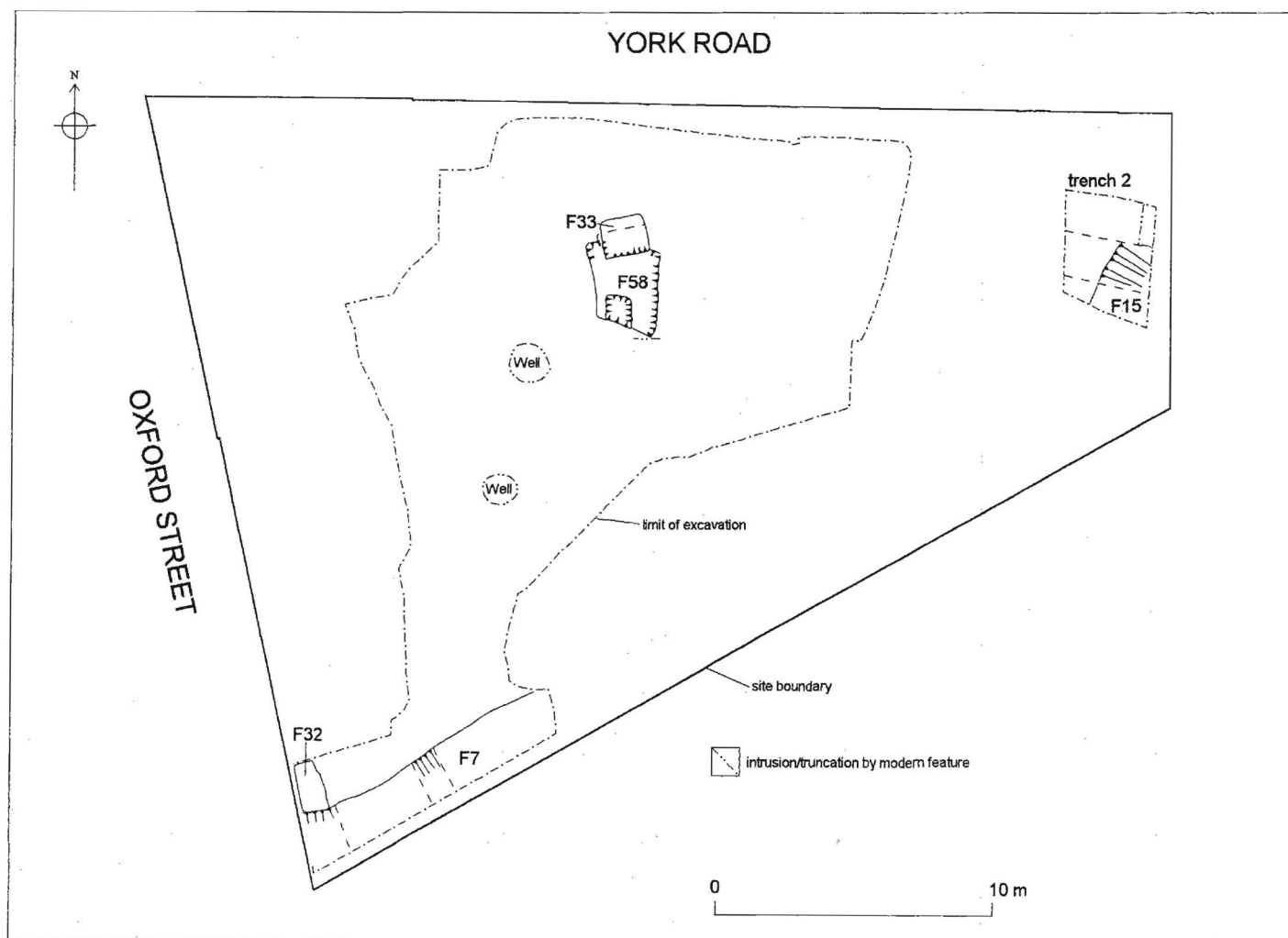


soil. This was observed where it had survived horizontal and vertical truncation by 19th and 20th century development, and perhaps indicates a period of less intensive occupation on Oxford Street. Pit activity appears to have reduced to the digging of the two pits mentioned above, which may not have been in use for very long. These were both similar in form, and the fills indicate a single phase of backfilling in the 17th century, perhaps with material derived from surrounding demolition. The revetment of pit F33 with bricks suggests maintenance of the pit. Despite the use of bricks in a few prestige buildings in the 15th century, it is unlikely that bricks were in common usage until later in the 17th century (McWhirr 1997, 19-20). Even then, a surge in brick production seems to be reserved for buildings of higher status, but it is possible that bricks were a common enough material by the mid 17th century to have been used in such a way. Brick kilns are visible to the east of the south suburbs on Robert's map of Leicester of 1741 though there is some evidence to suggest that this map was drafted prior to the Stukeley map (1722) as early as 1711 (P. Courtney pers. comm.)

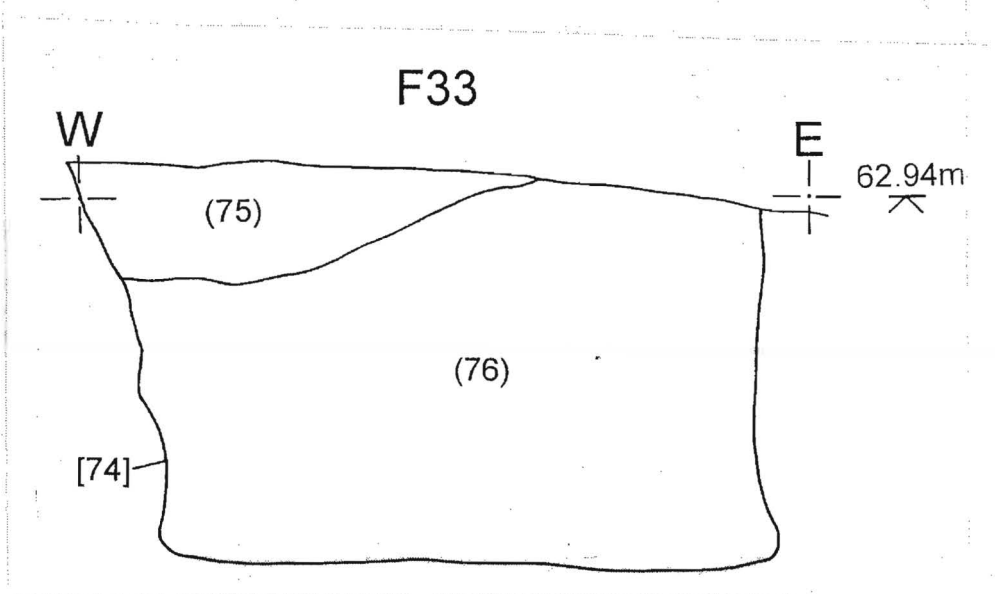
It is possible that these pits were used for the collection of water rather than the disposal of waste. The uppermost fills of the pits perhaps indicate backfill with demolition debris.

The south suburb appears to have been demolished in or around 1645, during preparations for the Civil War (Courtney 1992). This has been seen as a common practice during the Civil war in areas beyond town defences, although there are no doubt other factors influencing this action. The derelict nature of the south suburbs, and the probable poverty of the inhabitants may explain why these suburbs fared worse than others (the northern and eastern suburbs escaped demolition).

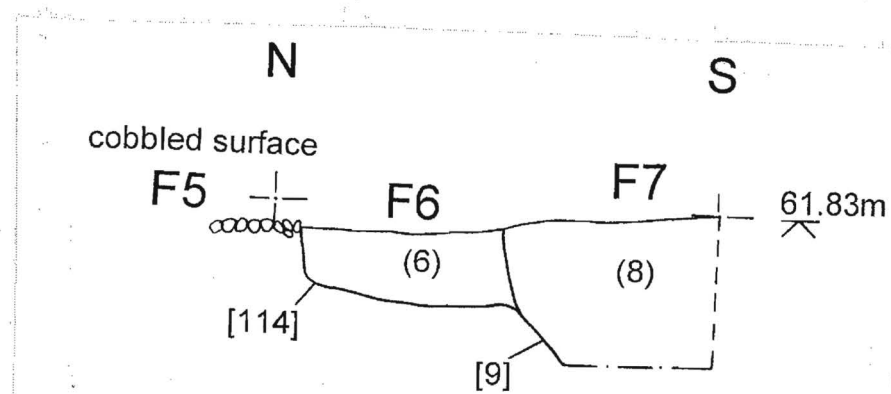
Coinciding with demolition was the addition of a series of defensive or siege earthworks guarding the approach to the Southgate (Courtney & Gnanaratnam, 1996). Evidence of Civil War ditches, perhaps part of the hornworks protecting the Newarke Gate have been found at Bonners Lane (Finn, forthcoming). It is likely that the Civil War ditch at York Road formed part of similar earthworks on the eastern side of Oxford Street. By 1748 the earthworks were demolished (Courtney & Gnanaratnam, 1996). The homogenous nature of the ditch backfill (a single phase?) at York Road, and similarities with Bonners Lane ditches, support this.



**Figure 25** Phase 5: 17th century



**Figure 26** South facing section of F33 (1:20)



**Figure 27** West facing section through F5, F6 and F7 (1:20)



***Phase 6: the redevelopment of the site - late 17th to 19th centuries (fig. 28)******The Corner cellar***

The excavation revealed a brick wall on a north south alignment truncating medieval pit F23. This appeared to be the rear wall of an L-shaped cellar serving the property on the corner of Oxford Street and York Road. Brick sizes ( $8\frac{3}{4} \times 1\frac{5}{8} \times 4\frac{1}{4}$ ) suggest a date earlier than that of the most recent structure above (described below), perhaps earlier 18th century (these bricks are similar to those found in pit 33, see above). A watching brief undertaken during demolition of the existing properties revealed cellaring along the entire Oxford Street frontage, excluding the area immediately adjacent to The Olde Bowling Green. In places the corner cellar appeared to have been constructed in stone (Dane Hills Sandstone) which had been later refaced with brick. This is particularly the case along part of the Oxford Street frontage, and the rear wall of this cellar. The splay of a stone light-well was also visible on the Oxford Street frontage (Pollard pers. com.). Stone cellars have been seen in the vicinity (Bonners Lane; Olde Bowling Green) and are presumed to predate the widescale use of brick. This suggests that a building was standing in this location prior to the building that was recently demolished, and was perhaps built in the late 17th or early 18th century (possibly contemporary with the first phase of the Olde Bowling Green?). The brick wall noted during excavation may indicate the extension of the cellar at around the time that York Road came into existence, i.e. between 1792 and 1828. The refacing of stone walls with more modern brick suggests continuous use and repair/maintenance. A mullioned window visible in the later (Georgian) building may have derived from the earlier building.

***The garden wall (context 104)***

A single course of stones on a north-south alignment, 2m in length and 0.35m in width, formed a possible wall above a layer of 18th or 19th century garden soil. The wall comprised roughly hewn chunks of Dane Hills sandstone and brick fragments sealed with a crumbly sandy mortar. A fragment of moulded Dane Hills Sandstone was included. The wall is assumed to have been built in the 18th or 19th centuries.

***Discussion***

Rebuilding of the south suburbs began to take place in the early 18th century (Courtney 1993). The 1722 Stukeley map and the 1741 Roberts map (possibly drafted in 1711 - see above) give an indication of the extent of the south suburb during this period. Only one building is shown in the vicinity of York Road (possibly 'The Old Bowling Green', or the building described above?). By 1792 (the Throsby map) continuous development is evident along this area of Oxford Street and extends far south of the site, although York Road was not yet in place. Little activity behind the frontage is evident at this stage, the area to the rear of the properties apparently given over to cultivation or small-scale gardening activities. The 1828 map of Leicester continues to show buildings on the frontage of Oxford Street and on the newly built York Street (later to become York Road).

The rear of the properties appear to comprise garden plots, and it is not until the publication of the first edition Ordnance Survey map in 1886 that subdivision of plots is indicated. This shows five properties along the Oxford Street frontage including the corner property on York Road, and an extra five properties along the York Road frontage. These are mostly mid-Victorian (Gnanaratnam & Courtney 1996), though

the corner property appears to be earlier (see below). Evidence of 19th century activity was seen in the form of brick lined cess pits/septic tanks and services. Two brick lined wells were also located.

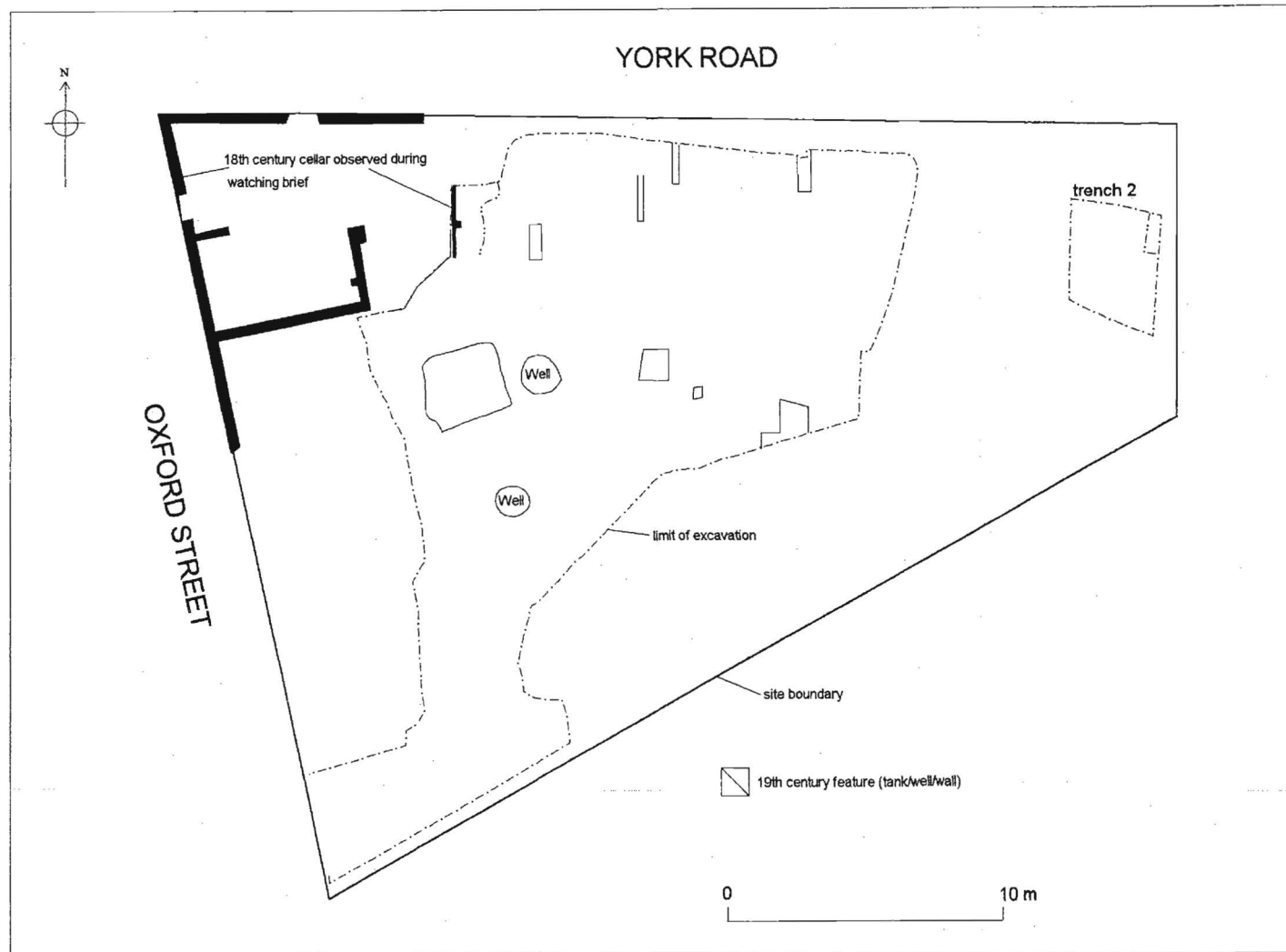


Figure 28 Phase 6: late 17th – 19th centuries.

The building previously standing on the corner of Oxford Street and York Road (36-38 Oxford Street and 54-56 York Road) is believed to have pre-dated the other Victorian buildings on the site. The three storey building was built in the Georgian style, the frontage comprising bricks in Flemish bond, and the rear being Flemish Garden Wall, a more economical use of bricks and less stylish appearance where it could not be seen. A horizontal sliding sash window was also evident at the rear. At the north end of the building was a rectangular window with two mullions. This window suggests re-use from an earlier property (see above) (Finn, pers. comm.; Gnanaratnam & Courtney 1996). Commercial use of the properties continued throughout the 19th and 20th centuries until demolition in 1996.

## The Roman Pottery

Patrick Marsden

Fabric	Sherd Count	Weight(g)			
			OW	11	96
			SW	2	7
Samian	26	150	GW	177	1865
C2	19	161	GW1	5	273
C3	3	23	BB1	22	159
C11	1	23	CG	4	74
C12	1	2	CG1	32	481
C13	1	12	CG1a	3	50
MO4	3	110	CG1b	12	702
MO4/18	4	132	CG3	3	33
MO18	1	207	MC	3	17
MO19	3	16			
AM9A	7	221			
WW	35	431	Total	383	5393
WS	5	148			

Table 1: Pottery counts by fabric. For Fabric descriptions see Pollard 1994, 112-114

## The phases

*Phase 1: late first to second century*

This phase contains first century material such as South Gaulish samian vessels. In addition, Phase 1 produced other pottery of a late first to early-mid second century date. This includes grey ware barbotine decorated and short-everted rim vessels and a calcite-gritted lid-seated jar. Characteristically second century pottery includes BB1, a 'pie-dish' being identified, colour-coated pottery and Central and East/Central Gaulish samian forms. A Central Gaulish vessel with an advertisement stamp from this phase is discussed below.

*Phase 2: third - 4th century*

This phase includes a small grey ware jar in a grave fill (fig. 29), which may be of a late third-fourth century date (see below). This grave also contained part of a BB1 plain-rimmed dish, dating to c.190-340 AD.

*General discussion*

The date range of the pottery is first-fourth century (Phase 1 Late first to second century and Phase 2 fourth century). The fabric totals are shown in the table above. The assemblage is typical of groups found in Roman Leicester (Pollard 1994 and Clark 1999) and outside the urban core, nearby at Newarke Street (Marsden 1996).

Amongst the samian, most of which from Roman levels is Central Gaulish, is a fragment of an 'advertisement' stamp on a Drag. 37 bowl (Phase 1-2 Context 256-pit fill). The potter is Paternus, a Lezoux potter of a mid-late Antonine date (R. Pollard pers. comm. and Webster 1996, 85).

A complete grey ware miniature jar was recovered from a near the head of the skeleton in Grave F1 (Phase 2, fig. 29). The everted rim form and burnishing is imitating larger black-burnished ware jars. A general date range of later second - fourth centuries is likely, the oversailing nature of the rim possibly indicating a late third-fourth century date. A similar small grey ware jar, in a more sandy fabric, was found in a grave at the 1997 excavations at Republic Car Park, Oxford Street (see Marsden 1999). Apart from this, no parallels in terms of fabric and form are known from previously excavated vessels produced by grave fills at Gallowtree Gate (Dare 1927, 33-57) and Great Holme Street (Lucas 1974), Leicester. It is possible that these vessels were made locally, specifically for deposition in burials. Single pots, rather than several, have been found elsewhere accompanying inhumations in the Midlands and North of Britain. Philpott has noted that by the fourth century 'a single vessel sufficed' (1991, 110).



**Figure 29**      **Grey ware everted rim small jar (134, F1, Phase 2). Scale 1:4**

## The post Roman pottery and tile

Deborah Sawday

The stratified pottery (1141 sherds, 20446 grams) and all the ridge tile (27 fragments, 1307 grams) was examined by x20 binocular microscope and catalogued by fabric, (Davies and Sawday 1999, table 30) vessel form and context; the miscellaneous earthenware roof tile (4 fragments, 325 grams) was catalogued by context only.

### *The pottery*

#### *The stratigraphic record*

Sixteen sherds, weighing 198 grams, of Saxo-Norman and medieval pottery were intrusive in Roman levels. Eight medieval sherds in Potters Marston, Medieval Sandy ware and Midland Purple, were found in the backfill of the phase 1 ditches [2] and [16], and another eight sherds in the phase 1-3 post hole [76]. The latter comprised a single sherd of the developed Saxo-Norman Stamford ware fabric ST1, with copper glaze, dating from c.1150, and six sherds of Potters Marston and a single sherd of the Stanion Lyveden fabric LY4, all dating from the late 11th or 12th centuries.

#### *Phase 3 (693 sherds, 11219 grams) - Table 2*

The pits [8], [18], [20], [21], [23], [45], [57], [63], [83], [86], [88], [93] and [94] produced 654 sherds of pottery, weighing 10742 grams, giving an average sherd weight of 16.4 grams. Over 78% of this pottery - by sherd numbers - was recovered from the pit [8], the 512 sherds weighing 8235 grams, with an average sherd weight for this group of just over 16 grams. Not surprisingly, this pit produced the bulk of the Saxo Norman Stamford wares from this phase - 29 sherds out of a total of 42 - in fabrics ST1 and ST2, the latter fabric dating from c.1050, as well most of the early medieval Potters Marston ware, 445 sherds out of a total of 583 for the whole phase. However, as with the other pits, pit [8] also contained medieval pottery dating to the 13th and early 14th centuries, and a few sherds of late medieval pottery were present in both pits [8] and [57]. Whilst much of this material may represent primary refuse, some degree of residuality and redeposition and possibly, intrusion, is suggested by the relatively wide date range of the pottery, especially from these two latter features.

Approximately half of the sherds in the Stamford ware fabric, ST2 were unglazed and sooted, whilst most of the sherds were also abraded, some weighing as little as 2 grams - clearly much of this pottery represented cooking wares, dating from the mid 11th century, and was residual in this phase, though the fragments of two unglazed form 4 jars/cooking pots may date from the late 11th to the mid 12th century (Kilmurry 1980). Whilst no vessel forms were identifiable in fabric ST1, save for what may be part of a yellow glazed form 23-3 dish (ibid.) with a pedestal base, thirteen of the fourteen sherds in this fabric were glazed, three of the latter with copper, including two sherds from one of the lower fills (100) of the pit [45]. Evidently most of these fragments represented table wares dating from the mid 12th to early or mid 13th century. Two wheel thrown cooking pot/storage jar fragments in Torksey type ware and an unclassified Reduced Sandy ware may also be Saxo Norman in date.

Typically, as on many excavations in and around Leicester, Potters Marston was the most common ware, making up over 86% of the total, by sherd numbers, of the pottery recovered from these predominantly 12th and 13th century contexts. Early, 12th century - if not late 11th century - forms included straight sided or sloping

shouldered cooking pot/storage jars with collared rims and slashing at the neck, some with flat rather than convex bases, from the pits [8], [23] and [83], several examples of the lower half of notably thin walled cooking pot storage jars with flat bases being found in the primary fill (218) of the pit [86]. These vessel forms are paralleled at Causeway Lane and Elbow Lane, Leicester, (Davies and Sawday 1999, fig. 88), (Sawday 1989, fig. 9.8), together with a simple bowl upright bowl rim, (ibid. 1989, fig. 9.3), also from [8]. Later 12th and 13th century forms included part of a flanged cooking pot/storage jar rim from a lower fill (100) of pit [45] (Davies and Sawday 1999, fig. 89.54-56), although the exact form of the vessel remains unknown, also present were shouldered cooking pot/storage jars with moulded rims, (Davies and Sawday 1999, fig 90.75), sloping sided bowls, (ibid., fig 92.97-100) and a jug strap handle with three parallel rows of stabbing from the primary fill (146) of the pit [63], and another fragment of a jug with a thumb base (ibid., fig 94.120-121).

The remaining 12th or early 13th century pottery included part of the lower body and foot of a hand made cauldron in an unclassified Reduced Sandy ware, fabric RS, a form also paralleled at Causeway Lane (ibid., fig 96.168), in fabric RS1, though in the case of the latter vessel the foot is round rather than, as here, square in section. Sherds in the Oxidised Sandy wares OS2 and OS, the Leicester Splashed ware, SP3, the Stanion Lyveden ware LY4, including a simple jug rim in pit [45], and a single fragment in the Nottingham Splashed ware, SP2, probably all dating to the 12th or early 13th centuries were also present.

Eleven sherds of Chilvers Coton and Medieval Sandy wares, dating to the 13th or 14th centuries, and four sherds in the later medieval Sandy ware and Midland Purple, fabrics MS3 and MP2 were also recovered from the pits, including a small jug or pipkin handle fragment in the latter fabric.

Nineteen sherds, weighing 241 grams were recovered from the post holes [6], [69], [77], [101], [102] and [103]. The earliest pottery comprised a single sherd in the developed Stamford ware fabric ST1 from [103], but this was probably residual in a context which also produced a fragment of later 13th or 14th century Chilvers Coton fabric, CC2. Whilst post hole [6] contained five sherds of late medieval pottery in Medieval Sandy ware and Midland Purple, fabrics MS3 and MP2, the remainder of the post holes contained sherds of 12th or 13th century Potters Marston.

The gully [98] contained sherds of 12th or 13th century pottery, six in Potters Marston and two in an unclassified Oxidised Sandy ware, whilst the ditch [71] produced single sherds of Potters Marston and Chilvers Coton, fabric CC1 of a similar date range. Thirteenth century pottery, including the Chilvers Coton fabric CC1, the Nottingham fabric NO3, and the Coventry ware CO2, was also recovered from the drain [37] and the surface [61]. Only the surface [38] produced a possibly intrusive sherd in the Medieval Sandy ware fabric MS3, dating from the 14th or, perhaps, the 15th centuries.

#### *Phase 4 (331 sherds, 7085 grams) Table 3*

The pits [9], [10, 44=10], [31], [46=64], [66], [73], [87], and [99, 105=99] produced 305 sherds, weighing 6838 grams, giving an average sherd weight of 22 grams. A higher than average sherd weight occurred in the later medieval fabrics such as the Midland Purples, MP1 and MP2 in the pits [9], [10, 44=10], [46=64], [66] and [73], and in the Cistercian/Midland Blackware fabric CW2/MB in [10, 44=10], and [66], confirming that much of the remaining pottery is residual in these contexts.



Of note amongst the residual pottery was a Stamford ware, fabric ST1, glazed jug or tubular spouted pitcher handle with applied decoration, consisting of two applied strips twisted together in an interlace pattern (M51) (Kilmurry 1980, p23) in one of the primary fills (69) of the pit [31], and in (167) [73], in fabric ST2, in the same vessel form, a glazed handle made out of two parallel plaits of clay. Each plait is formed out of three twisted strands of clay, a technique not recorded at Stamford.

The diagnostic sherds in the late medieval fabrics included part of a lobed cup in the Surrey White ware TG2, a baluster jug base in the Medieval Sandy ware MS3, and ridged and slashed jug handles and a jar rim in MP2, all from [9]. The pit [10, 44=10] contained part of an unglazed jug in MS3, and a minimum of five glazed cisterns in the Midland Purple fabric MP2. One of the cistern rims had a horizontally applied and thumbled clay strip around the neck, and another had a cut out on the rim, part of a plain bung hole survived on one of the vessels, whilst the two bases showed stacking evidence underneath. Similar vessel forms and stacking techniques were found on the Midland Purple wares at the Austin Friars, Leicester, (Woodland 1981, fig 36.156, fig 37.158, fig 39.190). Also present was the rim from a pipkin in MP2, again similar forms in this fabric have been recovered from excavations on medieval tenements in Leicester (Sawday forthcoming (a)).

Fragments of at least one, and possibly as many as three, posset pots in CW2 were recovered from [44=10], in a form also paralleled at the Austin Friars, (Woodland 1981, fig. 41.204), whilst one of the lower fills (154) of the pit [66] produced an underfired cup base and body sherds, probably from another cup, the latter decorated with applied white clay pads stamped with a wheel pattern in the same fabric. A similar, if not identical, stamp was found on a two handled cup with a tall rim and a pedestal cup, both in Cistercian ware, at the Austin Friars, (ibid. fig 41.212 and 218). The primary fill (220) of the pit [87] contained fragments, in CW2, of one, or possibly two, two handled cups with a cordon below the rim (ibid. fig 43.260) and the rim of a narrow cylindrical jug (ibid. fig. 42.222). Also present was the rim of a pedestal cup in Midland Blackware dating from the 16th or 17th century, a similar vessel was found on the Shires excavations in Leicester (Sawday forthcoming (b)).

The layers [4], [12], [13] and [56] produced twenty six sherds of pottery, weighing 247 grams, giving a relatively small average sherd weight of 9.5 grams. Residual material was evident from both [13] and [56], the former including a fragment of the Stamford ware fabric ST2 with small copper lumps adhering to the exterior, perhaps evidence of industrial use. Of note from [13] were two sherds of the coarse Chilvers Coton ware fabric CC5, which is rarely found in Leicester.

#### *Phase 5 (66 sherds, 1250 grams) Table 4*

The layers [3] and [32] produced two sherds of residual Potters Marston and four sherds in the post medieval earthenware, fabric EA2, respectively, the latter fabric dating from the 17th century. The pit [33] contained 13 residual sherds of medieval pottery, whilst the ditches [7] and [15] also produced residual Saxo Norman and medieval pottery, a terminal date in the early or mid 17th century being suggested for both by the presence of sherds of Midland Blackware, and the post medieval earthenwares EA1 and EA2. The only diagnostic sherds, a flat internally glazed hollow ware base in EA1, with stacking evidence underneath, from [7], is dated by the vessel form from c.1640 if not earlier, in Staffordshire (Greaves 1976, fig. 19.167, p.6), whilst the fabric is dated from the 16th century in Leicester.

*Phase 6 (35 sherds, 684 grams) Table 4*

Again much of this pottery was residual from earlier contexts, the post medieval fabrics present included Midland Yellow, fabric MY, and the Mottled wares and Black Wares, EA3 and EA6. However a terminal date in the 19th or possibly the 20th century is suggested for this phase by the presence of six sherds of the modern unclassified earthenware EA, in [11], and two fragments of white earthenware or china EA10, in [47].

*The ridge tile (27 fragments, 1307 grams) Table 7*

All the tiles were glazed save for those in Potters Marston. Of note was a pinnacle crest (Allin 1981, fig. 16.12) and a serpentine crest (ibid. fig 17.15) from [10, 44=10] phase 4, in the Medieval Sandy ware fabric MS3, and the Midland Purple ware MP2 respectively. Both are dated to the late medieval period. None of the ridge tiles was associated with any medieval structures - whilst the both range of fabrics and the two crests are typical of those found in excavations in Leicester and its suburbs.

*The ceramic roofing tile (4 fragments, 325 grams)*

A single tile fragment was recovered from the phase 1 ditch [24], two from the phase 3 pits [8] and [45], and one from the phase 4 pit [10]. All the tiles were very fragmentary but were evidently hand made, and all save one, were flat. One of the flat tiles had mortar adhering to the under side, and two of the flat tiles were 14 mm and 16 mm thick, respectively.

*Discussion - Tables 6 and 7*

Twenty seven of the 35 sherds recorded in the earliest post Roman pottery from the site, the Stamford fabric ST2, dating from the mid 11th century, were found in the fill of the phase three pits, together with pottery dating predominantly from the 13th and 14th centuries. The presence of this later pottery and the small average sherd weight of the Stamford ware suggest that fabric ST2 is residual in these contexts. The lack of any associated features of a contemporary date points to manuring - as part of agricultural or horticultural activity on the site prior to its development as a medieval suburb - as the most likely origin of these sherds.

However, much of the pottery from phase 3, which produced the largest post Roman pottery assemblage on the site, was evidently primary refuse, suggesting that there was occupation from the 12th into the 13th and 14th centuries - the six fragments of ridge tile from this phase all date from the 13th century.

Phase 4 contained redeposited as well as later medieval pottery and tile, demonstrating continuing, though perhaps reduced, levels of activity here during the later 14th, 15th and 16th centuries. Phases 5 and 6 produced relatively small assemblages of pottery dating from the 17th century and later.

*Conclusion*

Whilst no Saxon pottery was found, the site produced post Roman pottery dating from the Saxo-Norman to the modern period. Potters Marston, dating from c.1100-c.1300, is the dominant fabric, accounting for 60.9 % and 54.3%, in terms of sherd numbers and weight respectively, of the Saxo Norman and medieval pottery totals (table 5). These figures may also imply that the level of occupation and activity, in this part of the medieval suburb at least, was at its most intense during this period,

certainly less pottery was found in the later medieval phase 4 deposits. However, other factors, such as changing methods of rubbish disposal may also have had an impact on the survival of the material evidence on the site, both during phase 4 and the post medieval and modern periods, phases 5 and 6.

The range of pottery fabrics and vessel forms is broadly comparable to that found within the town, save perhaps for such high status sites as the medieval Swinesmarket, where a large range of continental imports was found (Sawday forthcoming (b)). Furthermore, given the general date range of the material, the absence of any late Saxon Lincoln or Lincolnshire shelly wares, which are being increasingly recognised on *intra mural* sites in Leicester, is perhaps not surprising. When comparisons are made with the pottery from the adjacent Republic Car Park site (Sawday 1999), a slightly wider range of the locally traded Chilvers Coton, Nottingham and Coventry wares are found to be present, albeit in very small numbers, but this may simply be a reflection of the relative sizes of the pottery assemblages. The presence of decorated cups in the late medieval Cistercian ware is also of interest, whilst the medieval ridge tile fabrics and crests are typical of Leicester and its *environs*.

Table 2: The Post Roman Pottery from Phases 1 to 3, by fabric, sherd numbers and weight (grams)

FABRIC	ST2	ST1	TO	PM	RS	OS2	OS	SP2	SP3	LY4	CC1	CC2	NO3	CO2	MS2	MS3	MP2	TOTALS
PHASE 1 ditches				6/106												1/32	1/1	
PHASE 1 TOTALS				6/106												1/32	1/1	8/139
PHASE 1-3																		
post hole		1/8		6/60						1/1								
PHASE 1-3 TOTALS		1/8		6/60						1/1								8/69
PHASE 3																		
post holes		1/2		10/174								3/5				2/25	3/35	19/241
ditch				1/30							1/2							2/32
gully				6/92			2/10											8/102
drain									1/1		2/13		1/5					4/19
surfaces				2/22							2/37			1/7		1/17		6/83
pit [8]	21/177	8/63	1/15	445/7104	12/393	2/61	1/15	1/3	9/186		7/126	1/5			2/9		2/78	512/8235
pits misc.	6/37	6/34		119/2303					6/101	2/19	1/8					2/5		142/2507
pit totals	27/214	14/97	1/15	564/9407	12/393	2/61	1/15	1/3	15/287	2/19	8/134	1/5			2/9	2/5	2/78	654/10742
PHASE 3 TOTALS	27/214	15/99	1/15	583/9725	12/393	2/61	3/25	1/3	16/288	2/19	13/186	4/10	1/5	1/7	2/9	5/47	5/11 3	693/11219

Table 3: The Post Roman Pottery from Phase 4, by fabric, sherd numbers and weight (grams)

FABRIC	ST1/ 2	TO	PM	RS	SP2/ 3	LY 4	CC1	CC2	CC5	NO3	C O2	MS2	MS3	MP1	MP2	TG2	CW1/2	CW2/MB	EA2	TOTALS
PHASE 4																				
pit [9]		1/6	14/100		1/12	1/5	7/44			1/32	1/3		17/278		37/1112	1/5				81/1597
pit [10]			21/234		1/3		10/135	6/40				3/40	10/156	2/81	39/1198		7/154	7/66	1/12	107/2119
misc pits	8/10 8	5/65	13/157	1/6			3/50			3/32			7/78	4/204	58/2172		8/124	7/126		117/3122
pit totals	8/10 8	6/71	48/491	1/6	2/15	1/5	20/229	6/40		4/64	1/3	3/40	34/512	6/285	134/4482	1/5	15/278	14/192	1/12	305/6838
Layers	1/8		9/75				1/6		2/13			1/6		1/11	9/121			2/7		26/247
PHASE 4 TOTALS	9/11 6	6/71	57/566	1/6	2/15	1/5	21/235	6/40	2/13	4/64	1/3	4/46	34/512	7/296	143/4603	1/5	15/278	16/199	1/12	331/7085

**Table 4: The Post Roman Pottery from Phases 5 and 6, by fabric, sherd numbers and weight (grams)**

FABRIC	earlier med	MS3	MP2	CW2	CW/MB	MY	EA1	EA2	EA3	EA6	EA10	EA	TOTALS
PHASE 5													
Layers	2/9							4/62					6/71
ditch [7]	5/33	5/78	11/396		1/5		4/215						26/727
ditch [15]	11/87		6/130		2/5		1/7	1/3					21/232
pit [33]	6/79	3/88	4/53										13/220
PHASE 5 TOTALS	24/208	8/166	21/579		3/10		5/222	5/65					66/1250
PHASE 6													
Misc	18/292	2/26	2/15	1/6		1/27	1/108		1/27	1/36	2/35	6/112	35/684

**Table 5: The Saxo Norman and Medieval Pottery Site Totals, by fabric, sherd numbers and weight (grams)**

AB. HS	ST2		O	M	S	S2	OS	SP2	P3	Y4	C1	C2	C5	O3	O2	S2	S3	P1	P2	G	W	W	W	OT LS
				/106													/32		/1					/139
-3		/8		/60						/1														/69
	7/2 4	5/9	/15	83/97 5	2/3 3	/61	/25	/3	6/2 8	/19	3/1 6	/10		/5	/7	/9	/47		/11					93/1 219
	/10	/14	/71	7/566	/6			/3	/12	/5	1/2 5	/40	/13	/64	/3	/46	4/5 2	/29	43/ 60	/5	/11	4/2 7	6/1 9	30/7 73
	/4			5/101							/94	/7		/2			/16		1/5 9				/10	6/96
				4/198					/18			/14				/62	/26		/15			/6		3/33
ITE OTA S	5/3 0	8/1 1	/86	81/10 56	3/3 9	/61	/25	/6	8/3 8	/25	0/5 5	2/7	/13	/71	/10	/11	0/7 3	/29	72/ 31	/5	/11	5/2 3	9/2 9	118/ 980

**Table 6: The post medieval and modern pottery site totals, by fabric, sherd numbers and weight (grams)**

FABRIC	MY	EA1	EA2	EA3	EA6	EA10	EA	TOTALS
PHASE								
4			1/12					1/12
5		5/222	5/65					10/287
6	1/27	1/108		1/27	1/36	2/35	6/112	12/345
SITE TOTALS	1/27	6/330	6/77	1/27	1/36	2/35	6/112	23/644

**Table 7: The medieval ridge tile, by fabric, fragment numbers and weight (grams)**

FABRIC	PM	SP3	CC1	CC2	MS2	MS3	MP1	MP2	TOTALS
PHASE 3									
pit [8]	1/20		2/52						
misc pits		1/40	1/27						
post hole			1/6						
PHASE 3 TOTALS	1/20	1/40	4/85						6/145
PHASE 4									
pit [10]					1/25	5/485		3/311	
misc pits			2/78	2/50					
PHASE 4 TOTALS			2/78	2/50	1/25	5/485		3/311	13/949
PHASE 5									
pit [32]					1/8	1/29			
ditch [7]			1/11		2/90	1/24			
PHASE 5 TOTALS			1/11		3/98	2/53			6/162
PHASE 6 TOTALS							2/51		2/51
SITE TOTALS	1/20	1/40	7/174	2/50	4/123	7/538	2/51	3/311	27/1307

## The slate

Anthony Gnanaratnam

### Catalogue

Context	Description
8	<p>Five frags. of local Swithland Slate.</p> <p>One frag. 140mm x 120mm x 15mm has two probable and one possible worked edges all worked from reverse and may be bottom of rectangular roof slate. Consistent with medieval and later forms, from Leicester.</p> <p>Second small frag. has peg hole not more than 9mm diam., possibly partly drilled one side, pierced through with holing bill or similar then drilled from reverse. This is consistent with medieval and later forms from Leicester.</p> <p>Three remaining fragments have no diagnostic marks.</p>
24	<p>Three frags. of local Swithland Slate.</p> <p>One probably complete slate 165mm l x 143mm w max (125mm min) x 20mm thick max (15mm min) Centre of hole to base 130mm, Hole approx. 5mm diam. Roughly rectangular with slightly rounded irregular top. Possibility of damage to rhs and lhs. Rhs may have been worked from both sides same with Lhs, bottom edge worked from reverse, poss. same with top. Peghole drilled from face, flake detached from rear, indicating poss. use of holing bill or similar tool to complete piercing of the slate. The hole was then widened slightly from the reverse. A series of fine impact marks around peghole on both face and reverse may suggest use of holing bill to make peghole followed by drilling to widen hole. Consistent with medieval form and techniques from Leicester. Pegged roof slate probably from higher courses of graded roof (fig. 30).</p> <p>Second frag 105 x 50mm with very flat surface on reverse and face, that on face has polished appearance, which may suggest wear either from weathering or abrasion, former may be more likely. Possible roof slate fragment rather than whetstone, as has slightly irregular surface.</p> <p>Third piece no diagnostic features.</p>
67	<p>Single piece of finely laminated slate probably Swithland slate.</p> <p>90mm l x 35mm w x 5-7mm thick. May preserve part of top edge. Has Peghole 8mm diam, drilled from face and with small flake scar on reverse indicating possible use of bill to complete piercing. Series of parallel scars around hole are probably not tool marks being instead weathered out laminae or anomalies at steep angle to main cleavage plane. Other marks probably occurred post-deposition. Frag of very thin roofing slate. Technique consistent with medieval or later date.</p> <p>Piece of Swithland Slate no diagnostic features</p>
138	
168	<p>Piece of Swithland Slate with no diagnostic features. Impact scar probably occurred post-deposition and not trace of manufacturing process.</p>

### Discussion

Of the York Road slate which was collected, three fragments were holed and thus could be definitely be said to be roof slates. The remaining fragments may either derive from roofing slates or from the use of slate in the walls of timber framed buildings as infill materials between studs.

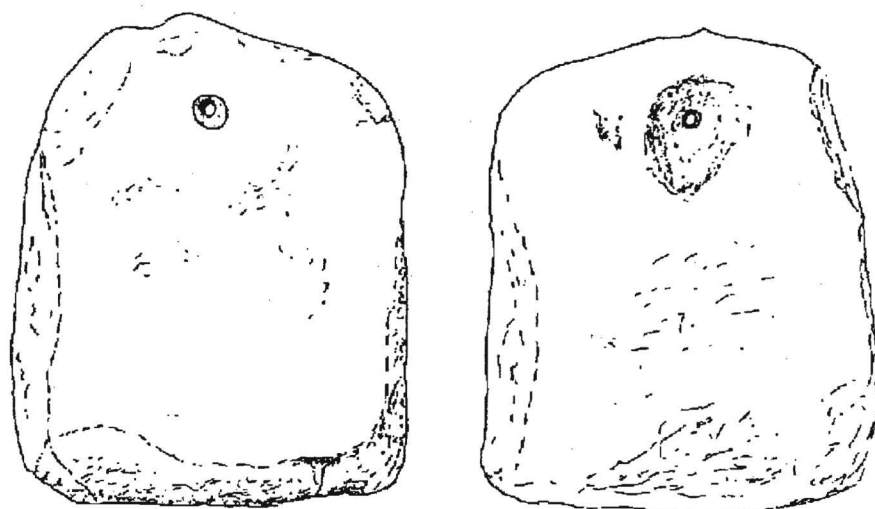
A precise source for the slate cannot be given other than that it derives from the local Pre-Cambrian deposits of Charnwood Forest, quarried variously at Groby Woodehouse Eaves and Swithland, (Clifton-Taylor 1987, 166).

Only one slate was largely intact however the form cannot be dated.

## ***Glossary***

Cleavage plane	The plane of the laminae, and thus the plane which a slate will split.
Laminae	The fine layers of slate
Face	The more convex face of the slate, which, on a roof, would confront the viewer.
Reverse	The flatter face of the slate, which would be hidden
Lhs Rhs	Left and right hand sides of the slate, with face uppermost.
Drilling	<p>Possibly even using a hand held blade, the tool marks suggest that the 'bit' does not necessarily turn a full 360o. In support of the use of a drill Salzman quotes an account entry from 1313 of Simon de Norton being paid 1d' for a hide bought whereof to make a spyndelthoung for boring slates'</p> <p>The accounts of St John's College, Collyweston refer to 'clevying batterying and boryng of slatte'</p>
Holing bill	Pointed hammer type tool, used in 19th Century for holing Welsh and Cotswold slates, (Wright 1991, 142). Possible that a similar tool may have been used, or at least percussion applied through or to a tool with a fine point.





**Figure 30**

**Slate from context 24  
(Scale 1:2)**



## The Mortar

Anthony Gnanaratnam

### Summary

Mortar was recovered from 10 contexts from the York Road Excavation. Most of the mortar was undatable and devoid of any significant features. However a dump of mortar did occur in (98). Although a small and possibly redeposited assemblage it was interesting in that, the mortar fragments present may derive from the same source and many bore impressions of wood, stone and wattlework. It is suggested that these derive from plaster panels between studs, possibly from a timber framed building. Although two pieces had traces of pale yellow paint, there was no evidence of any decorative scheme.

### Methodology

All fragments were examined visually and briefly under x10 magnification, to compare the aggregates. No destructive chemical analysis was carried out.

The term mortar has been used, simply as a neutral short hand term for a lime and aggregate mix, regardless of function. Similarly 'withy' has been preferred to rod or sale or other terms, and timber used for any structural wooden member.

### Catalogue

Context	Description
19	3 frags Lime with opaque red brown and pale yellow and clear coarse rounded quartz sand aggregate. Also contains occasional black ironstone and charcoal frags and coarse lime frags. Aggregate fairly dispersed. One frag has impression of withy >20mm diam on reverse, and abraded face, 20mm thick x 20 x 35. Second frag has abraded face.
138	1 frag Aggregate as (19) but very dispersed. 1 frag Aggregate as (19) but generally dense with patches up to 2mm of almost pure sand, and pure lime, may be either poorly mixed or remnant of mortar mixing. This frag is considerably harder.
145	1 frag As (19) with second layer 0.5 - 1mm thick, of lime with slight sand content. Has possible impression of building stone on reverse at steep angle to the face.
146	1 frag As (19) but with more charcoal and/or ironstone. Has faces and edge at 90o to each other, may be from side of panel adjacent to exposed timber.
176	1 frag As (19) with squarish lump of orange red material, probably tile.
154	1 frag As (19) On reverse is impression of 1 or possibly 2 building stones, these are at an acute angle to the face and may have been exposed, the alternative is that another coat of mortar was intended. The face has been only coarsely treated.
167	1 frag Lime with fine, clear, clear yellow and opaque red fine sand aggregate with fine charcoal or ironstone.

<b>Context</b>	<b>Description</b>
67	<p>9 frags</p> <p>Lime with clear and pale brown rounded and sub-angular coarse quarts sand with frequent fine sand and moderate charcoal or Fe inclusions</p> <p>Frag 60 x 50 x 14mm thick has traces of lime wash on face on reverse is impression possibly from building stone.</p> <p>Other eight frags has no diagnostic features.</p>
67? [12]	<p>3 frags</p> <p>as (19) fairly dense aggregate</p> <p>2 are non-descript</p> <p>third may be lump of lime</p>
98	<p>17 frags</p> <p>As (19) though more dense aggregate all frags are stained light brown on the outside.</p> <p>1 - face has traces of pale yellow paint (approx 2.5Y 7/4) over thin white lime wash applied directly to surface, no intonacco. On reverse is one or possibly two withy impressions, and a straight edge suggesting timber. This may represent a stud at side of plaster panel.</p> <p>2 - frag 50 x 80 x 35mm thick with curved top. Face has traces of lime wash although left fairly uneven, along 'lower' edge is a bevel. The top consists of uneven lumps, showing that it was not in contact with a surface. On reverse is a possible stone impression. The frag probably represents plaster pushed into a corner or angle and left rough.</p> <p>3 - (Fig. 31), face has lime wash with visible brush marks. Side has impression of V-section groove, the cast preserves a wood-like texture. On the rear is a probable stone impression and going into the V-section groove, from the reverse, the probable ends of two laths. This may suggest the frag filled a grooved stud with possible stone infill.</p> <p>4 - Face bevelled may represent edge to a feature, or may simply represent a rough finish. On the reverse is impression of two building stones.</p> <p>5 - (Fig. 32). On face is fine lime layer with occasional sand. On rear imprint of possible withy and one straight edge at angle to surface suggests angled timber, in the infill of panel, and on other side is cast of the possible timber forming an edge to the panel.</p> <p>6 - Near complete frag. Face has lime wash, on Lhs is probable imprint of timber with possible notch, and on Rhs are two imprints of two probable stones, the rear is uneven lumps showing that they were not in contact with a surface. The frag appears to have been used to plug a probable gap between a timber and stone infill.</p> <p>7 - Frag with lime wash and pale yellow (approx. 2.5Y 7/4) paint.</p> <p>8 - face rough with lime wash, reverse stone impression, probably smeared over stone and left rough.</p> <p>9 - Whitewashed face, Rhs straight edge implies probable stud rough rounded cast on Lhs probably from stone. Rear rough, no sign of a surface. Probably used like 8 to plug a gap.</p> <p>10 - Four possible stone impressions no face.</p> <p>11 - Face has lime wash, rear has possible withy impression</p> <p>The rest of the fragments have no interesting features.</p>
94	<p>5 fragments.</p> <p>As (19)</p> <p>Face has traces of lime wash on reverse trace of withies &gt;4mm diam</p> <p>Limewashed face. Rhs straight implying timber and Lhs irregular possibly from stonework</p>

### ***Discussion***

Apart from the mortar from (94) and (98) most of the mortar lacks any notable characteristics. The aggregates in all specimens apart from (67) and (167) appear under x10 magnification to be similar, although this can only be proved by destructive chemical analysis. It is likely, however that the aggregate for mortars, other than those from (67) and (167), may derive from a similar source. It must be noted that only coarse elements could be detected using visual inspection, any fine material added, such as dung, tallow or clay would only be apparent with chemical analysis and it is these materials which are characteristic of medieval mortar and plaster. The charcoal apparent in the mortar may derive from local contamination or even impurities in the lime.

The quantity of material from (94) and (98) and its similarity may suggest a single source, such as a deposit of destruction debris. Most of the fragments have abraded surfaces which, which together with their small number, may suggest redeposition. A number of the fragments from these two contexts, have casts of both probable stone and probable wood, and occasionally withies and probable timbers. A possible interpretation is that these plaster fragments represent, plaster panels between studs, in one case grooved, with variously wattle or stone infilling. This would suggest that the mortar derives from the demolition of part of at least one wall, possibly from a timber framed building. It should be noted however, that the mortar does not derive from any features that are distinctly medieval and the possibility exists that the pieces from (94) and (98) are residual Roman.

Although two fragments from (98) had traces of pale yellow paint there was no evidence of any colour scheme. The fact that the paint had been applied to a thin lime wash directly onto the surface of the mortar shows that there were no additional preparatory layers of lime. Without chemical analysis the pigment used cannot be identified although an ochre is not unlikely, being recorded in accounts of high status buildings, where it is one of the cheapest pigments (Salzman 1967,168).

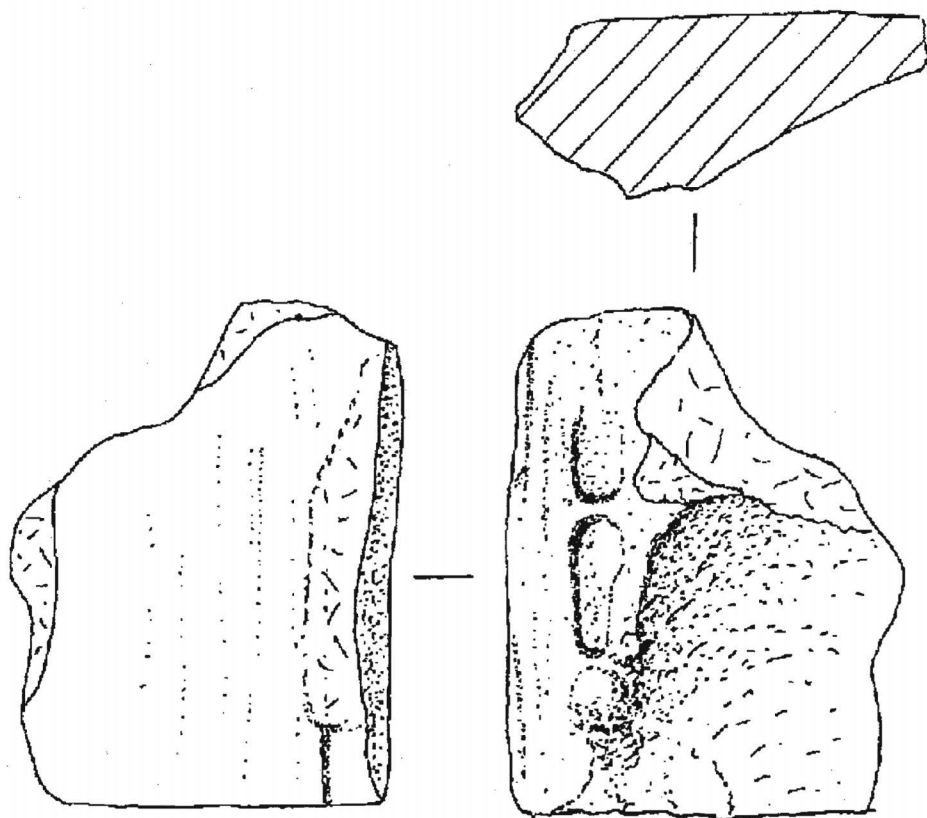


Figure 31 Mortar from context 98 (Scale 1:1)

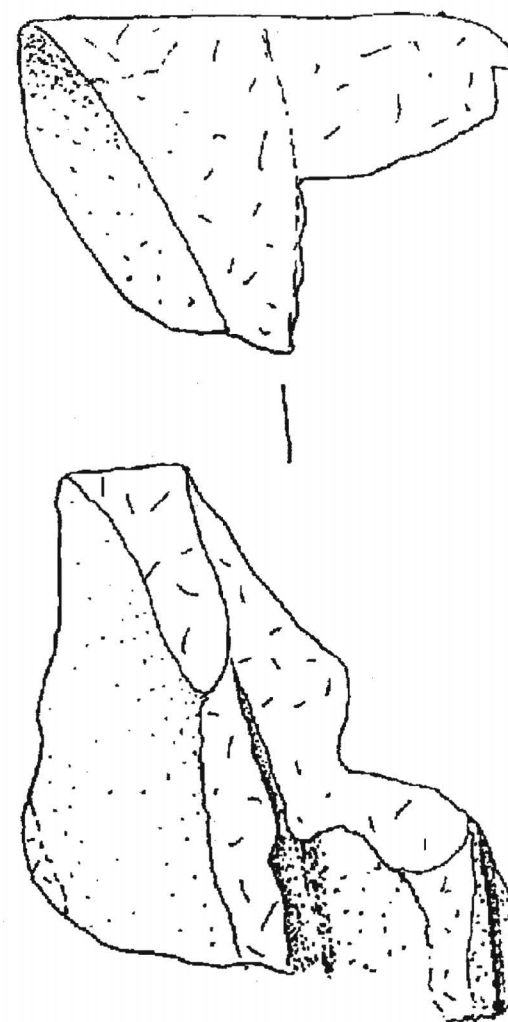


Figure 32 Mortar from context 98 (Scale 1:1)

## The Ceramic Building Material

A total of 6.75kg of ceramic building material was recovered from features on site. While the date of these features is unknown at present, at least 35% of the assemblage is known to have derived from Roman deposits.

### *The Roman Tile*

*Nicholas J. Cooper*

A total of 39 fragments of tile weighing 6.211 kg was retrieved and recorded by form within each context group. Fabric analysis was not considered worthwhile on such a small sample except to note that the material fell within the normal range of sandy orange fabrics encountered on sites in Roman Leicester. The form analysis is tabulated below (table 8) together with average fragment weights. While only 22 of the fragments were classifiable, the smallness of the unclassified fragments means that they only represent about 10% of the assemblage by weight. However, the small average fragment weight of 253g for classified material (weight of a complete *tegula* usually about 8kg), together with the fact that only 50% of the material derived from Roman deposits emphasises that this is a very disturbed assemblage, probably resulting from secondary dumping of demolition debris from inside the town. The majority of the tile was used in roofing with the more robust flanged form (*tegula*) predominating over the more fragile curved form (*imbrex*). The occurrence of wall tiles indicates that the demolition material derives from masonry buildings where they formed levelling courses in the same fashion as modern brick. However, the low incidence of boxflue types (*tubulus*) would not indicate that these buildings had hypocaust heating systems.

Of interest is the possible reuse of tile as grave furniture as evidenced by the large fragment of *tegula* found accompanying the fourth century burial in (196).

Form	No.of Frags	Weight	Av.Frag.Wt
<i>Tegula</i>	14	3192	228
<i>Imbrex</i>	2	230	115
Boxflue	2	115	57.5
Wall tile	4	2032	508
Unclassified	17	642	38
<b>Totals</b>	39	6211	159
<b>Classified Only</b>	22	5569	253

Table 8: Roman Tile by form.

### Slag

1.69 kg of slag was recovered from excavated features. The majority of this derived from pits, 63% from one feature (pit 105). This pit is undated at present, but may be indicative of industrial activity on the site. No further analysis was undertaken following assessment.

### Shell

A total of 1 kg of shells was recovered from the excavation. Over 89% of this was found within the fill of one feature (pit 66), undated at present. The assemblage comprised mostly of oyster shells. There was insufficient number to warrant further analysis.

### **The Small Finds - Nicholas J. Cooper** (based on Archive Record by Dawn Harvey)

Eight non-ferrous small finds were recovered from excavated features, six of copper alloy and two of bone. The only object attributable to a functional category (personal adornment and dress), was sf 1 from Roman ditch 2 (7), an early Roman bone hairpin of Crummy's Type 2 (1983, 21) with two transverse grooves below the head. This is by far the commonest hair pin type from Leicester and dating suggests that it is a second century type (Cooper 1999, 255, fig 121.38-43).

A total of 47 ferrous objects was also recovered, 37 of which were nails. Two of the three graves contained nails which may have derived from coffins. The remainder, recovered mainly from pits and ditches, may derive from disturbed coffin burials.

## The Animal Bone

Jennifer Browning

### Summary

*An assemblage of animal bones was recovered from two sites in the southern quarter of Leicester. The majority of bone identified was from the Roman and medieval phases. Although the conclusions drawn must be tentative, it has been possible to identify a difference between the Roman and the medieval period. Cattle bones dominate the Roman assemblage, while the medieval assemblage has a greater variety of food animals suggesting an economy balanced between species imported from the countryside and those raised within the household.*

### Introduction

In 1997, two sites, Oxford Street and York Road, were excavated in the southern quarter of Leicester's historic core. The sites are in close proximity, separated only by the Fullback and Firkin public house, previously the Old Bowling Green. Seven phases of activity have been identified at Oxford Street and six at York Road, spanning the Roman period through to the nineteenth century. A total of 2224 fragments of animal bone were recovered from the excavations. However, few individual phases at either site yielded a sizeable quantity of bone. For example, only five fragments of bone were recovered from features dating to the Saxon phase at Oxford Street. By contrast, nearly six hundred bone fragments were recovered from phase 4 at York Road, which encompasses later medieval features. The tables below show the phases, their dates and the amount of animal bone recovered from each.

**Table 9:** The amount of animal bone derived from each phase identified at Oxford Street and York Road. The *Identified* column gives the number of bones identified to species level from each phase.

Oxford Street				
Phase	Date (century AD)	Identified	Unident.	Total
1	2nd-4th	175	263	438
2	4th	3	7	10
3	5th-9th	2	3	5
4	12th-14th	138	240	378
5	14th-15th	73	82	155
6	16th-17th	28	42	70
7	18th	31	37	68
1/2	2nd-4th	18	13	31
6/7	17th-18th	6	1	7
<b>Total</b>		<b>474</b>	<b>688</b>	<b>1162</b>

York Road				
Phase	Date (century AD)	Identified	Unident.	Total
1	late 1st-2nd	47	90	137
2	4th	3	5	8
3	12th-14th	103	153	256
4	14th-16th	290	285	575
5	17th	30	43	73
6	17th-19th		6	6
1/2	1st-4th	5	2	7
<b>Total</b>		<b>478</b>	<b>584</b>	<b>1062</b>

Phase 1 at both sites is mainly represented by ditches and a number of pits and post holes dating from the early Roman period (1st century to 3rd century AD). Phase 2 is defined by the use of the area as a cemetery in the later Roman period and it can be seen from *Table 9* that little animal bone was present in these features, with the exception of two dog skeletons, which will be discussed later. A Sunken Featured Building was identified at the Oxford Street site, suggesting a phase of Saxon activity (3). However, at York Road, phase 3 encompasses a number of medieval pits and a



building and is approximately equivalent to phases 4 and 5 at Oxford Street. At this period the sites formed part of the south suburbs of Leicester and excavated features probably represent backyard activity from properties fronting onto Oxford Street (Gossip, 1999). Phase 6 comprises activity taking place during the sixteenth and seventeenth centuries. For the purposes of this report, the bone data from both sites has been amalgamated. The reason for this is that the division between York Road and Oxford Street sites is artificial, created only by the areas defined for development. In reality, both sites form only a sample of the activity taking place in the south suburbs of Leicester. In order to make the results of this analysis more meaningful, it has also been decided to group the bones in broader phases, Roman and Medieval, and to examine the bones from each period as a whole. Due to the low representation of the post-medieval bone (see *Table 9*) it was decided to restrict analysis to identification only.

### **Methodology**

The bones were identified using comparative modern and archaeological material from the reference collection at the University of Leicester. Bone element, species, state of fusion, completeness and marks or damage on the bones were recorded to elicit information on elements recovered, species proportions and age (epiphyseal fusion and toothwear), as detailed below. The information was compiled onto a computer spreadsheet (Microsoft Excel). Butchery marks were recorded and their position and aspect sketched. Measurements of length and breadth were taken wherever the completeness of the bone allowed, in order to calculate relative size and withers height for the main species. However, this is a fairly small assemblage, particularly when separated into phases, a factor which limits the degree of interpretation. While a number of interpretative methods have been attempted, it has not always proved possible to use the data obtained, usually due to small numbers of bones. Much larger assemblages were recovered from nearby excavations at Bonners Lane (Baxter forthcoming) and Causeway Lane (Gidney 1999), which provide useful comparative data. Pressures of time have meant that it has not been possible to study the material from the sieved samples so a bias towards larger bones can be expected.

### *Species proportions*

Three main methods were used to calculate species proportions from the site, not all of which were applicable to every species in every phase. Firstly, a simple fragment count of every bone that can be identified to species, excluding only ribs and small skull fragments (apart from the petrous temporal and orbit). This method often over-emphasises the importance of larger mammals, whose bones tend to fragment into more pieces than those of smaller animals. In an attempt to reduce this bias, a restricted fragment count was carried out using the epiphyses only method outlined in Grant (1975). To summarise, this method counts only those bones with a fusion surface present. A whole bone has two fusion surfaces and will therefore be counted twice except in the case of phalanges which are rarely broken. Adjustments are made where different species have different numbers of the same bone; for example, the number of horse phalanges is doubled in order to make the results comparable to those of cattle, sheep and pig who have two on each foot. Similarly, sheep and cattle have one metapodial on each leg, while a pig has four, so for pigs the abaxials are discounted and the remainder halved.



An estimation of the minimum number of individuals present (MNI) was undertaken by identifying the most commonly represented bone for each species and dividing it by the number of times it occurs in the body. For example, if 10 complete metacarpals are present, then at least 5 animals would be required to produce this assemblage. If, however, there were eleven, at least six animals would be required since for the purposes of this count you cannot have half an animal. Although bones were usually sided during recording, it was decided not to use this information for calculating the MNI. It was expected that the majority of recovered bones represent joints of meat rather than whole beasts, therefore any discrepancies between the numbers of left and right bones is probably random. In an urban context, this method provides a further indication of species proportions, although it tends to over-estimate less common species.

#### *Age structure*

Two methods were utilised in order to demonstrate the age structure of the species present; epiphyseal fusion and toothwear. Epiphyseal fusion is a useful aid to estimating age at death, using data from modern species. The actual ages at which bones fuse may have altered, due to selective breeding in the modern period designed to bring animals to maturity more rapidly. However, this is unlikely to have affected the sequence of bone fusion. Therefore by examining the numbers of fused and unfused bones in the order in which they fuse, it is possible to estimate a kill-off pattern for each species. One major disadvantage is that epiphyseal fusion only provides information for sub-adult animals, dying or slaughtered before reaching skeletal maturity.

Examination of toothwear was undertaken using the method by Grant (1982) for the main domestic species, cattle, sheep and pigs. The state of eruption and the degree of enamel wear is noted for each lower molar tooth, providing a numerical Mandible Wear Stage (MWS) for each mandible. Estimates can be made for incomplete mandibles, using comparison with complete examples in a similar state of wear. The results can be grouped by species to provide an indication of the age at which animals were slaughtered. The main advantage to this method lies in the fact that it is applicable to both mature and immature animals. However, these results will provide a relative rather than an exact age at death and it is important to take into account that some tooth wear stages are very brief while others may last for a considerable length of time. For these reasons, it is the overall pattern that is important. In an attempt to maximise the amount of toothwear data available, the wear stages of loose 3rd molars and deciduous 4th molars were recorded, as these teeth that would not be present in the jaw at the same time and do not introduce a marked bias to very young or mature animals.

2224 fragments of which 952 (43%) were positively identified, the remainder were not diagnostic enough to identify with confidence. Some attempt has been made to characterise these bones (mostly shaft fragments, ribs and vertebrae) as small, medium and large mammal, and unidentified bird.

## The Roman Period

### Phase 1

Deposits from phase 1 yielded a total of 575 bones of which 37% were positively identifiable to species (Table 10). These included the remains of cattle, sheep, pig, red deer and dog. A single limb bone of frog/toad was identified. Four fragments of human bone were also present. A simple fragment count (excluding only skull fragments) shows that cattle were by far the most common species at the site, comprising 59% of the total identified bones. Horse bones were also frequent, accounting for a further 22% of the bone, with only 8% of bone belonging to sheep and 6% to pig. An epiphyses only count increases the percentage of sheep by 4%, but otherwise changes the proportions of animals little. Cattle still account for over 50% of the bones present, while horse provide a further 23%. The majority of fragments in the unidentified category belonged to large mammals which demonstrates that this is a genuine trend. However, the result obtained from calculating the MNI, suggests that there was much less difference in the relative species proportions. Cattle are still the most and pig the least commonly represented, but sheep and horses are found in similar proportions. However, the MNI is not necessarily an accurate reflection of the relative proportions given that the numbers involved are so small. For all species there appears to be no particular bias in skeletal representation (Appendix 1), although this a cautious conclusion in a sample of this size.

**Table 10:** Fragment count for the Roman phase 1

Species	Fragment Count		Epiphyses Count		MNI	Number	MNI
	Number	%	Number	%	Bone		
Cattle	124	59	47	52	(mandible)	5	3
Sheep	17	8	11	12	(mandible)	3	2
Pig	12	6	5	6	(humerus)	2	1
Horse	47	22	21	23	(metacarpal)	3	2
Dog	2	1	2	2			
Red Deer	3	1	2	2			
Frog/Toad	1	0	1	1			
Human	4	2	1	1			
<i>Total (a)</i>	<i>210</i>	<i>100</i>	<i>90</i>	<i>100</i>			
<i>Unidentified fragments</i>							
large mammal	105	18					
medium mammal	11	2					
skull frags	43	7					
ribs	11	2					
Unidentified other	206	36					
<i>Total (b)</i>	<i>575</i>	<i>100</i>					

Key: MNI = Minimum Number of Individuals

### *Cattle*

Cattle fragments are considerably more numerous than comparable material at Causeway Lane (Gidney 1999, 310) and Bonners Lane (Baxter forthcoming). Unfortunately, little information on age structure was obtained from the phase 1 bones, due to the scarcity of whole mandibles and epiphyses. However, while the size of the sample does not allow a comprehensive analysis, it can perhaps provide an indication. Suitable data for MWS could be obtained from only three cattle mandibles, which had mandible wear stages of 30-34, 37 and 41. The first two of these are likely to have belonged to cattle reaching skeletal maturity, while the third (41) was probably fully mature (Grant 1984, 512). This is consistent with the evidence from epiphyseal fusion, where 25 out of 30 bones were fused. An unfused pelvis and 1st phalange, indicated the presence of an animal killed below the age of 10 and 15 months respectively. However, given the extremely small numbers involved it is enough to say that most of the cattle present in this phase appear to be skeletally mature. The cattle from this sample were horned and a cut mark indicates possible horn working.

### *Horse*

All of the horse bones with fusion surfaces present were fused. Horse bones are remarkably abundant when compared with the results from Bonners Lane (Baxter forthcoming) where they account for 4% of identified bones, they were also infrequently found at Causeway Lane.

### *Sheep and Pig*

Sheep and pig, although present, form a surprisingly small proportion of the bones from this phase. All of the sheep and pig bones with fusion surfaces were fused but there were not sufficient mandibles from either species to attempt any toothwear analysis.

### *Human*

Four fragments of human bone was recovered from two features. Three longbone fragments (humerus, radius and femur - Simon Chapman *pers. comm.*) were recovered from the fill of a ditch F4 (Oxford Street). A single human phalange was found in ditch F49 (York Road). It can only be assumed that these are residual, or more likely intrusive, since they do not appear to have been deliberately deposited, and they may derive from the cemetery activity of phase 2.

### *Phase 2*

Very little animal bone was recovered from phase 2 at either York Road or Oxford Street, (see *Table 9*), with the exception of the remains of two dogs. The first was found within an east west orientated human-sized grave cut during the York Road excavation. No human bones accompanied the dog skeleton, which was articulated and appeared to have been orientated north-east to south-west. The animal was adult; all of the longbone epiphyses were fused and the permanent teeth were erupted suggesting that it was over eighteen months old. The dog appeared to have been small but robust with a shoulder height of 27cm (Baxter 1999, 2).

The second dog skeleton was recovered from a sub-circular pit F5 very close to Oxford Street. It was largely disarticulated and was found amid a number of other

animal remains. The longbones were all fused and the permanent teeth erupted, confirming that this was an adult dog. The animal appears to be much larger than the York Road dog, with a shoulder height of 50cm and was possibly a hunting dog type (Baxter 1999, 3). Unlike the York Road specimen, this appears to have been a disturbed burial rather than a ritual placement (Baxter unpubl).

### The medieval period

The medieval period encompasses bones from York Road, phases 3 and 4 and Oxford Street, phases 4 and 5. A total of 1384 bone fragments was recovered from these medieval contexts of which 544 were positively identifiable (39%). A much wider variety of species were represented in this period than had been observed in the Roman contexts. As well as the three main domestic mammals, cattle, sheep and pig, bird bones such as domestic fowl and goose were present. Small quantities of dog and deer were identified in the assemblage, as well as small mammals such as brown rat and rabbit. *Table 11* below shows the results of the three different fragment counts. The MNI has not been calculated for species only represented by extremely low numbers of bones.

**Table 11:** Fragment counts for the medieval period.

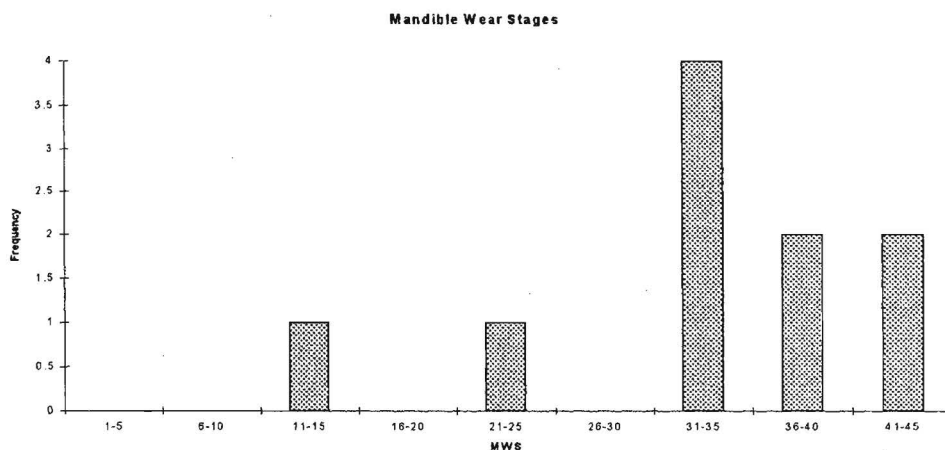
Species	Fragment Count		Epiphyses count		MNI		
	Number	%	Number	%		Bone	
Cattle	151	29	52	18	(scapula)	7	4
Sheep	172	34	85	30	(mandible/tibia D)	11	6
Pig	83	16	55	19	(mandible)	7	4
Horse	9	2	5	2	(scapula)	1	1
Dog	4	1	7	2	(metapodia)	1	1
Red Deer	4	1	2	1		1	1
Fallow	5	1	3	1		1	1
Roe	2	0	1	0		1	1
Chicken	61	12	53	19	(tibio-tarsus)	7	4
Goose	17	3	18	6	(carpo-metacarpal) P	5	3
Rabbit	3	1	4	1			
Brown Rat	1	0	1	0			
Total (a)	512	100	286	100			
Unidentified fragments							
Bird	23	2					
large mammal	71	5					
medium mammal	44	3					
skull frags	65	5					
ribs	205	15					
Unidentified other	444	33					
Total (b)	1364	100					

Key: P = Proximal, D = Distal, MNI = Minimum Numbers of Individuals

A fragment count, excluding undiagnostic skull fragments, shows that the three main domestic species, sheep cattle and pig, together accounted for almost 80% of the identifiable bone. Sheep bones were the most frequent, at 34%, while 29% of bones belonged to cattle and 16% to pig. Horse accounted for only 2% of identified bone. 12% of bones were domestic fowl and 3% were goose. Only 3% of bone belonged to deer, while dog and rabbit each made up 1%. The results were slightly altered by using the "epiphyses only" counting method. This considerably reduced the proportion of cattle bones to 18%, while increasing the numbers of bird bones, which are frequently found whole. Sheep decreased slightly (34% to 30%) and pig increased (16% to 19%) to form a slightly greater proportion of the bones than cattle. The results of the MNI confirm that sheep was the most common animal, with the proportions of cattle and pig roughly similar. No particular bias was observed in the representation of skeletal elements, although mandible fragments and loose teeth appear to have survived better than many long bones (see Appendix 1).

### *Sheep*

There was no evidence for goat at the site, but this is perhaps no surprise given the small quantity of identified bones and the difficulty in separating sheep from goat bones. The sheep appear to be a mixture of horned and polled. This variation is not unexpected, given that they are likely to have come from a variety of different sources within the region. Only limited information could be obtained on the age structure of the sheep represented. Very few whole mandibles were recovered, however, ten Mandible Wear Stages were obtained for medieval sheep, (although half of these have had to be given a range to account for missing teeth (after Grant 1982). For obvious reasons, the results provide a guide only rather than a kill-off pattern (see *Chart 1*). No very young animals were represented, which is consistent with the limited data acquired from the state of fusion of the medieval sheep bones. One mandible has a possible MWS of approximately 10-12, which may indicate an animal younger than 18 months old. However, the MWS value of six of the ten mandibles falls between 30 and 40, while a further two have values of over 40. Although, Mandible Wear Stages cannot be precisely correlated with real age, these are likely to represent fully mature animals, at least 3½ years of age (Grant 1984, 504). Analysis of the state of fusion for sheep bones, has resulted in equally tenuous conclusions. 85% of sheep bones from these phases are fused. All bones that fuse at or before ten months are fused (Appendix 2). Between this age and skeletal maturity a few unfused bones are present but the numbers are generally too low to suggest a pattern of slaughter.

**Chart 1 Mandible Wear Stages for Sheep**

### *Cattle*

Although the cattle remains are proportionally not as great those of sheep in this period, it must be appreciated that their meat yield would be much higher. The cattle bones recovered probably represent animals which were driven to market from the local catchment area. No toothwear analysis was possible for medieval cattle mandibles. However, the small amount of available evidence from epiphyseal fusion shows that 80% of cattle bones from these phases were fused, suggesting that the majority of animals represented in the medieval assemblage were mature. The cattle were horned and a number of horncores were recovered. Four horncores with part of the crania remaining were recovered from a pit F47. Cut marks displayed on one are an indication of occasional horncore working.

### *Pig*

Most of the pig bones derived from immature animals. Thirty four pig bones were recovered from pit F44, including 29 neonatal bones, from all parts of the body, representing at least two animals. All of the longbones were extremely small (approximately 3cm) and unfused and the mandibles both had had just one tooth erupting. These are comparable with the partial skeletons found in the medieval deposits at Causeway Lane and are possibly the result of natural mortality, appearing rather young to be suckling pig (Gidney 1999, 325). The presence of such young bones may suggest that pigs were being bred on or close to the site. Pigs can subsist on refuse and can take up relatively little space and were almost certainly kept on a small scale in the backyards of York (O'Connor 1989, 17). (Gidney 1999, 325) suggests pig keeping took place in Leicester in the medieval period. The neonatal bones have been excluded from the epiphyses only count in Appendix 2, to avoid distortion of the pattern. This reduces the number of pig bones dramatically; only 12 have fusion surfaces. Of these 7 (58%) are fused, including all of those that fuse by 12 months of age. Even with such small numbers of bones the frequency, of unfused pig bones as compared to cattle or sheep is noteworthy. Pigs have little economic value other than as meat animals and, except for breeding, were frequently killed before



skeletal maturity. Unfortunately there are not sufficient pig mandibles to compare mandible wear stages with the skeletal data.

#### *Domestic Fowl*

The fragment count demonstrated that a sizeable quantity of identifiable bones derived from domestic fowl. The bones were frequently found whole, with fusion surfaces intact. Only two bones, both from the lower leg, were unfused, suggesting that most of the birds were kept until they were fully grown. At least some of the birds were male, as demonstrated by the presence of the spur on three tarso-metatarsus bones. Only one bone, a proximal humerus, showed signs of butchery. Knife cuts on the articular surface perhaps suggest the removal of the wing. (Feature 95, context 154). The paucity of butchery marks is not in itself surprising, as the relatively small size of a fowl carcass means that dismemberment is not necessary prior to cooking. It is probable that individual birds were reared, killed and disposed of within the bounds of one property (Coy 1989, 31). If this is the case, it is likely that most parts of the skeleton will be represented within one feature. Several contexts in the medieval assemblage, (for example 196 and 68), contain a representative sample of the carcass, not just the main meat bearing bones such as leg and wing. There is ample evidence for the presence of domestic fowl in medieval towns. Unlike most of the larger food animals, little space is required and, provided that there is sufficient food for them to forage, a large number could be kept in a medieval backyard (Coy 1989, 32). The keeping of fowl as a source of eggs should not be underestimated and this may be another reason why fowl were kept to maturity. Eggs were an important part of the medieval diet (O'Connor, 1989, 17).

#### *Goose*

The fragment count indicated that 3% of identified bones were goose. This percentage doubled to 6% when the bones were counted using the epiphyses only method, although the MNI calculation suggests the presence of only three birds. Geese would yield a higher percentage of meat per bird than domestic fowl, in addition to providing eggs and down. Goose feathers were also useful for quill pens and arrow flights (Coy 1989, 35). The bones were of a comparable size to modern greylag, consistent with those of Causeway Lane, where they were thought to be domestic birds (Gidney, 1999, 328). All of the bones with fusion surfaces present were fused.

#### *Deer*

Deer bones are fairly scarce in the assemblage although it is interesting that the fragments were mostly found at York Road. Small quantities of red, roe and fallow deer were identified from which we can infer that deer was an infrequent foodstuff, rather than regularly consumed. The contents of a medieval pit, F66 included two fragments of fallow deer antler and a single piece of red deer antler with cut marks, which is suggestive of occasional antler working. Pit F66 also contained a wide variety of domestic species suggesting that it may have been used for general disposal.



## **Undated**

### *Raven*

The remains of a raven were recovered, apparently deposited intact within an undated context (71) in a pit on the Oxford Street site. A similar bird was recovered from Roman phases at Causeway Lane, where it was interpreted as a tame bird rather than a scavenger, when its bones were more likely to have become dispersed (Gidney 1989, 317).

## **Butchery and Burning**

It is important to recognise that butchery is not a single event. Butchery, as a process, begins at the kill and continues with removal of hide or skin, dismemberment of the carcass, removal of flesh from bone and breaking up of bone for marrow. Even cooking and eating may leave their marks on the skeletal remains. Methods of butchery will also have a profound effect upon bone survival, archaeological recovery and the subsequent identification of bone elements. The butchery marks from York Road and Oxford Street in both periods generally fall into two categories, cut marks and chopping. The former were probably made with a knife and were not intended to sever the bone; they are likely to be the result of either skinning or separating the meat from the bones. Chopping is likely to have been carried out with a heavier, blunter instrument.

### *Roman*

Very little butchery was noted in the Roman bone assemblage. Nine bones of cattle showed signs of butchery, most of which were chopped. One cattle cranium was severed sagittally. Only 1 butchery mark was present in the assemblage of sheep bones, a cut mark, although this is to be expected given the low representation of sheep in this period. Similarly only 2 pig bones bore signs of butchery (1 chop and 1 cut).

### *Medieval*

Most of the butchery marks identified, occurred on the cattle bones from the medieval deposits. The marks almost always occur around the joints, particularly the distal humerus (5 out of 35 in cattle). Chopping was the most frequent type of butchery mark, particularly on the cattle bones, where 28 out of 35 butchered bones were chopped. Of 3 butchered pig bones, only 1 bore a fine cut mark; the others were chopped. The majority of butchered sheep bones from the medieval phases were also severed with a heavy instrument but a slightly higher proportion than cattle showed fine knife cuts (6 out of 16). For example, fine cuts were noted on the upper orbit of a sheep crania, perhaps inflicted during removal of the hide. In both cattle and sheep a high proportion of butchery occurred upon vertebrae, typically chopped through at, or close to, the centre-line of the bone. This may indicate the presence of professional butchers with premises for dealing with large carcasses (Grant 1987, 56). Where butchery occurred on cattle, sheep or pig crania, it generally involved chopping the skull sagittally, possibly to remove the brain or tongue meat. In all instances except one, this feature was found in the medieval phases and particularly on sheep bones. The occipital condyle of one sheep was cut through, possibly to sever the head from the body. A large dent in a cattle cranium, made by a blunt instrument, may represent the killing of the animal by pole-axing. It has been noted that bones recovered from

medieval deposits are frequently very fragmented (Grant 1987, 56) and this is reflected in the medieval bone assemblage from York Road and Oxford Street, where less than 40% of bones were positively identifiable to species.

Little burnt bone was recovered. Only two of the identified medieval bones were found to be burnt, both sheep. However, a further twelve burnt fragments were identified. A single cattle vertebrae from the Roman phases showed signs of burning.

### **Conclusion**

The small quantity of the bone recovered has limited the conclusions that can be drawn from the assemblage. For example no reliable age profiles for any species could be provided. Nevertheless, a number of differences have been noted between the bone recovered from medieval contexts and that from Roman contexts. There is little evidence for industrial activity in either period, although some remains may be interpreted as craft waste and there may be evidence for a specialised butchery craft. A number of horncores were recovered (mostly cattle) and a small quantity of antler with cut or saw marks originated from the medieval contexts. There were no other significant groups of bone elements.

The frequency of large mammal remains, particularly cattle, in the Roman assemblage is significant. This may partially reflect the theory that cattle dominated the Roman meat market, as observed at both Causeway Lane (Gidney 1999, 318) and Bonners Lane (Baxter forthcoming). Larger bones tend to survive better than smaller ones, which may also be an important factor here. The differences between the Roman and medieval assemblages may be partially accounted for by the types of features from which the bones derive. Most of the Roman material derives from ditches but the medieval animal bone was mostly recovered from pits and probably represents the disposal of household refuse within the bounds of the property.

A far greater variety of species was present in the medieval assemblage. The paucity of rabbit and deer bones in the medieval assemblage suggests that wild game did not constitute a major part of the diet. However, it also demonstrates that a variety of meats were consumed, with sheep being the most commonly recovered skeletal remains. This is consistent with results from other sites, as cattle and sheep bones constitute the largest proportion of urban animal remains, suggesting that beef and mutton were the most frequently eaten red meats (O'Connor 1989, 15). The proportions of cattle and sheep, predominantly rural animals, compared with species possibly raised within an urban context, such as pig and domestic fowl suggests that the inhabitants subsisted on meat from the market supplemented by locally raised stock.

## The Plant Remains

Angela Monckton

### Introduction

During the excavation samples were taken from medieval features for the recovery of plant remains such as seeds and cereal grains which might provide evidence of diet, environment or activities in the past. The site was close to that excavated at Bonners Lane where remains of Roman to post-medieval date were found. The remains found here included charred cereal grains and seeds, and charred legumes. Mineralised fruit stones were preserved in one of the pits. It was hoped that evidence from these remains together with those from the nearby sites of Oxford Street (Republic Car Park) and the Olde Bowling Green would add to those from Bonners Lane to help determine the type of occupation and activity in this suburb of Leicester and compare with evidence from excavations in the centre of the town.

### Methodology

Features were selected to be sampled if they were datable and had the potential to contain remains. A total of 6 samples was processed from medieval contexts, which included pits and a drain. This amounted to 51 litres of sediment. The samples were processed by wet sieving in a York tank using a 0.5mm mesh with flotation into a 0.5mm sieve. Unprocessed sub-samples were retained from each context. The residue over 4mm was sorted for all finds which are included in the relevant sections of the report. The residue below 4mm was examined for the presence of remains and sorted if remains were present. The flotation fractions (flots) were all examined with a x10 stereo microscope and those with more numerous remains were selected for analysis. The plant remains were identified by comparison with modern reference material in the department of Archaeology at the University of Leicester. The plant remains from the analysed samples were counted and tabulated (table 11), the plant names follow Stace & Murphy (1991) and are seeds in the broad sense unless described otherwise.

### Results

#### Cereals

Charred cereal grains were present in all the samples. Wheat was the most numerous grain and included free-threshing wheat which in the absence of diagnostic chaff could have been bread wheat (*Triticum aestivum* s.l.) or rivet wheat (*Triticum turgidum* type) both of which are free-threshing wheats (Moffett 1991) and both of which have been found in Leicester (Moffett 1993, Monckton 1999). Barley (*Hordeum vulgare*) was also found and this was of a hulled form. An additional cereal found was rye (*Secale cereale*) present as grains. Oat (*Avena* sp) was present in (606) but this may have been wild oat as a weed of the main cereal. No cereal chaff was found on this site.

#### Cultivated and collected

The samples also contain legumes including peas or beans (*Vicia/Pisum*) as at Bonners Lane (Monckton 1996) although not so numerous at this site. With one exception all the legumes found were charred probably as accidental spillage during cooking so probably represent domestic rubbish. It is thought that legumes are under-represented in the archaeological record as they do not come into contact with fire in

their processing and are probably only burnt by chance during food preparation, they are poorly represented in the samples from within the walls of the town at the Shires and Causeway Lane (Moffett 1993, Monckton 1999).

Other plants which have been collected and consumed are represented by charred fragments of hazel nut shell (*Corylus avellana*) and stones of sloe (*Prunus spinosa*) which were mineralised. Mineralised remains were also found in the earlier medieval phases at the Shires and Causeway Lane, and in post-medieval phases at Bonners Lane and Olde Bowling Green. Mineralised remains are preserved in cesspits where the minerals in the sewage cause fruit pips and stones and other remains to become semi-fossilised which provide evidence of the food consumed and of the domestic occupation.

### *Seeds*

Charred seeds were mainly those of arable or disturbed ground including the numerous seeds of stinking mayweed (*Anthemis cotula*) which is a plant of heavy soils, large grasses (*Poaceae*), and cleavers (*Galium aparine*) all of which are known as weeds of the cereals. Other weeds of disturbed ground included goosefoots (*Chenopodium* sp) and docks (*Rumex* sp) which are weeds found around settlements as well as in arable fields. Other plants such as clover type plants (*Trifolium* type) grow on grassland and the plants of damp ground such as (*Carex* sp) may have been brought to the site with fodder or bedding material. However some of these plants may have grown in field margins and damp areas of the cultivated fields and so have been brought to the site with the crops.

### *Other remains*

Fish vertebrae were found in F23 (230) and of the 11 found one was thought to be of eel and three were thought to be distorted in a similar way to those identified as chewed in pits at Causeway Lane (Nicholson 1999). This type of evidence has been found in cesspits on a number of sites in Leicester and elsewhere. Rodent bones were found in this context and in context (241). Context (241) also contained a coprolite (mineralised faeces) which contained abundant bone fragments.

### *Discussion*

The charred plant remains from the site from the three features examined, F37, F83 and F23 are all dominated by cereal grains with a smaller number of weed seeds which probably represent the weeds of the crops. This type of waste material probably represents waste from food preparation and includes a few accidentally spilled grains with weed seeds removed from the cereal before consumption burnt in domestic fires. This was probably disposed of in the pits as rubbish. This is the only type of material in the drain that probably became filled with a scatter of this material when it went out of use.

The mineralised remains were found in pit F23 and consist mainly of fruit stones of sloe and possibly bullace, which is a small plum. Because of their mineralised condition it is likely that they were consumed with the fruit and were passed into sewage dumped in the pit. A few other mineralised remains such as grass stem and a nettle seed were also found which were probably deposited into the pit from the surroundings and became mineralised in the sewage. Hence there is evidence to

suggest that this feature at least contains latrine waste amongst other waste including the charred remains. Considering the presence of fishbone and a coprolite it is possible that the main use of the feature was as a cesspit.

### ***Conclusions***

Domestic occupation was suggested from the presence of charred cereal grains in pits on the site, which showed the use of all the main cereals of the medieval period and compared with similar evidence from other sites in Leicester. Charred legumes were also found as evidence of a further crop and hazelnut shell was evidence of gathered food. The presence of mineralised fruit stones was evidence of latrine waste in one of the pits and its use as a cesspit was suggested. These remains showed the consumption of sloes probably as gathered food.

Table 12. Plant Macrofossils from York Road, Leicester.

Phase	3	3	3	3	12th-14th century
Context	81	214	230	241	
Feature	F37	F83	F23	F23	
Type	Drn	Pit	Pit	Pit	
Sample No	Y1	Y2	Y4	Y5	
CEREAL GRAINS					
<i>Triticum</i> free-threshing	-	2	-	3	Free-threshing Wheat
<i>Triticum</i> sp(p)	1	15	3	2	Wheat
<i>Triticum</i> sp tail grain	-	-	-	1	Wheat tail-grain
<i>Secale cereale</i> L.	-	6	-	-	Rye
<i>Hordeum vulgare</i> L. hulled	6	7	2	-	Barley
<i>Avena</i> sp	-	-	-	1m	Oat
<i>Avena</i> /Poaceae	3	9	3	2	Oat/Grass
Cereal indet grains	4	43	10	4	Cereal
CEREAL CHAFF					
Culm node large	-	-	5m	-	Cereal stem
LEGUMES					
<i>Vicia/Pisum</i>	6	-	2	1m	Bean/Pea
<i>Pisum/Lathyrus</i>	4	-	1	2	Peas/Vetchling
CULTIVATED / COLLECTED					
<i>Corylus avellana</i> L.	-	4	-	-	Hazel nutshell
<i>Prunus spinosa</i> L. (m)	-	-	7	14	Sloe
<i>Prunus</i> cf <i>spinosa</i> L. kernels (m)	-	-	25	9	cf Sloe
<i>Prunus</i> sp kernels (m)	-	-	1	9	Bullace/Sloe
ARABLE / DISTURBED GROUND					
<i>Urtica dioica</i> L.	-	-	1u	-	Common Nettle
<i>Chenopodium</i> sp	-	1	-	1	Goosefoots
<i>Rumex</i> sp	6	-	-	-	Docks
<i>Aethusa cynapium</i> L.	-	-	3	-	Fool's Parsley
<i>Anthemis cotula</i> L. (ch)	-	1	-	-	Stinking Mayweed
UNCLASSIFIED					
<i>Vicia/Lathyrus</i> (ch)	2	-	-	-	Tare/Vetch/Vetchling
<i>Lotus/Trifolium</i> (ch)	-	-	-	-	Clover type
<i>Medicago/Melilotus/Trifolium</i> (ch)	2	-	-	-	Clover type
<i>Carex</i> spp (3-sided)	-	1	-	-	Sedges
Poaceae (large) (ch)	3	7	2	1	Grasses large
Poaceae culm frags	-	-	+u	++u	Grass stem
Indeterminate seeds	4	-	2	5	Indeterminate seeds
OTHER					
Fungal sclerotia	-	-	+	-	Fungus
Mineralised concretions	-	-	-	+	?Coprolite frags
TOTAL					
TOTAL	41	96	67	55	TOTAL
Volume (litres)	5	11	12	7	litres
Flot volume (mls)	10	14	5	16	mls.
Sorted %	all	all	All	all	% Sorted

Key: Drn = drain, (ch) = charred, (u) = uncharred, (m) = mineralised, (+) = present (++) = abundant.

Remains are seeds in the broad sense and are charred unless stated.



**Osteology report on the human remains**

Simon Chapman

**Introduction**

Excavation demonstrated the presence of human remains from six conspicuous archaeological contexts, as recorded in the field records these contexts are; 7, 26, 62, 134, 209 and 235. The human remains from each of these contexts can be classified according to two types. The first represent so called 'charnel remains', these essentially being loose/disarticulated bones which may have been disturbed from an earlier inhumation and re-deposited in a more recent archaeological context. Falling into the 'charnel remains' category are contexts 7, 26 and 62. The second category represent intentional inhumation burials, within which human remains were found to be articulated and representative of a single conspicuous individual. Falling into this second category are contexts 134, 209 and 235.

**Methodology**

The osteological analysis of the human remains from York Road was carried out by the author, at the University of Leicester's bone laboratory, between the 10th – 12th March 1997. The analysis followed standard accepted methodologies employed in studies of this nature, as described by Bass (1987), Brothwell (1981), Ubelaker (1989) and as advocated by the Workshop of European Anthropologists (1980).

A metrical record of all of the bones present was compiled for archival purposes only (Appendix 2. Tables 13 & 14). Where possible broken bones were fitted back together for the purpose of measuring though this only occurred in instances where the joins were very close and inaccuracy was deemed to be negligible. Metrical data in a more substantial and/or less fragmentary collection would have been useful for discussions on dimorphism, nutrition and anthropological variation.

The criteria on which each individual was aged depended largely on the nature of the bones available. Where possible a range of criteria was employed, the several results obtained being combined to produce an *average* (most likely) age for the individual. Skeletal methods based on bone maturation, in terms of linear growth (Sundick 1978) and stages of ossification (Brothwell 1981 & White 1991) were employed alongside dental methods, which assessed stages of tooth development and subsequent wear (Miles 1963), in the assignation of age to the individuals represented.

Sex determination was similarly based upon various criteria, an average being accepted wherever possible. The most reliable criteria, based upon cranial and pelvic morphology and long-bone head dimensions, were sought first, though these were poorly represented. In the light of the prevailing poor condition of this skeletal sample alternative metrics were also sought, ones which could be used on fragmentary bones, which might assist with sexing of shattered individuals. Primarily, scapulae glenoid cavity length (Bass 1987.123) and femoral midshaft circumference (Black 1978) were used for this. Even using these methods individual sexes were deemed to be far from certain, in such cases the terms 'male?' and 'female?' have been used in place of the more certain 'Male' and 'Female' tags.

An eye was given to the occurrence of certain non-metric/discontinuous skeletal traits (as described by the likes of Finnegan (1978) and Berry & Berry (1967). However, no discrete traits were observed during the course of this investigation. Such traits are a common feature in all skeletal populations, these usually being non-pathological



variations in skeletal morphology, believed to have a basic genetic origin. Since non-metric variations are usually very subtle it is often very difficult for these to be observed and recorded in fragmented and degraded skeletons, as in this case.

Only in one instance was it possible for an estimation of living stature to be given (Skeleton 1). In this case the stature estimation was based upon the standard regression equations described by Trotter and Gleser (1952 & 1958), in this instance using the maximum length of the right fibula.

Extreme fragmentation of the surviving bone severely limited reliable diagnosis of pathological conditions. It is possible that some conditions, especially if subtle, would have been masked by the poor preservation of the bone.

## Results

### *Bone condition and representation*

The bone remains were carefully washed (using fine brushes and lukewarm water) and fully dried, by the author, prior to the onset of full analysis.

For the purposes of this investigation the conspicuous individuals have been assigned an arbitrary reference number (nos. 1-3). These correspond to the three partial skeletons excavated from inhumations/graves. Charnel bone on the other hand is referred to solely by context/layer number (as assigned by the archaeologists in the field).

The condition of the bone as represented in this small assemblage was generally of a poor nature, in terms of both bone representation and of its physical preservation. Bone/body part representation has been expressed in terms of a percentage of the former skeleton. Bone preservation has been recorded (Table 13) according to its relative condition; classifications are as follows:

**V.poor** - Highly fragmented bone displaying advanced signs of decomposition

**Poor** Bone may show considerable fragmentation and/or decomposition (not as severe as above)

**Fair** Bone may display occasional fragmentation or decomposition (perhaps not both, nor affecting all bones present).

**Good** Bone displaying very little evidence of neither fragmentation nor decomposition

**Excellent** - Bone in perfect condition, unfragmented and displaying no signs of decomposition

**Table 13. Showing the relative survival and preservation of the York Rd bones.**

<u>Skeleton no</u>	<u>Context</u>	<u>Cut</u>	<u>% Bone present</u>	<u>Bone condition</u>
1	134	135	20	v.poor
2	209	207	25	fair
3	235	-	10	poor
Charnel	7	-	-	fair
Charnel	26	27	-	poor
Charnel	62	-	-	fair

Condition of bone was fairly consistent throughout the collection with most bones falling into the poor-fair categories. Few bones were preserved in a complete state (which seriously limited the scope of metrical analysis, Appendix 2: Tables 13 & 14) and most displayed a fairly advanced level of physical decomposition, with very few bones retaining a good sub-periosteal layer (a limiting factor in the accurate diagnosis of pathological conditions).

Once laid out it was possible for a full inventory of the surviving remains from each individual to be compiled, such data is represented in this report in the form of a series of stylised drawings showing parts present as shaded areas (see figs. 33, 34 & 36). The remainder of this report will detail the osteological findings from each of the conspicuous individuals represented in the York Rd collection.

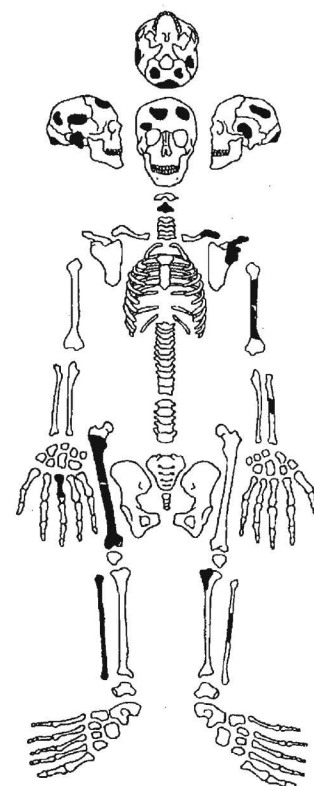
### *Skeleton 1*

**Age:** adult (23-40 yrs ?)  
**Sex:** male (?)  
**Stature:** 170 cm

The remains of skeleton number one were excavated from a stratified archaeological sequence (context no. 134) apparently the fill of an intentional grave cut (cut no. 135). The remains were seen to be articulated in the manner of an inhumation burial.

Bone survival was generally poor, most elements having sustained considerable taphonomic deterioration (decomposition/fragmentation) subsequent to their deposition. Upon analysis only the following elements could be accurately identified;

L & R parietals (frags.)  
 L & R temporals (frags.)  
 Frontal (frags.)  
 Occipital (frags.)  
 Axis (C2 vertebrae)  
 L. distal clavicle  
 L. Scapular (frag. inc. glenoid cavity)  
 L. Humerus (shaft only)  
 L. Radius (shaft frag.)  
 R. Femur (shaft + distal end)  
 L. 3rd proximal metacarpal  
 R. Fibula (complete)  
 L. Fibula (shaft frag.)  
 L. proximal tibia



**Figure 33. Stylised drawing of skeleton number one showing parts present (in black)**

Sex determination of this individual has had to remain uncertain since morphological and metrical analysis produced inconclusive results. Although both the nuchal crest of the occipital and the glenoid cavity of the left scapular appeared small for a male the measurements of the femoral shaft circumference and bicondular width appeared more consistent with a male skeleton. This individual must thus be regarded as a male (?). The overall light and slender appearance of the bones suggests that this person was fairly light build.

Age estimation was equally difficult to ascertain. The absence of all dentition and reliable osseous elements (i.e. pubic bones) meant that only a minimum age of 23 years could be accurately defined, based on the complete ossification of the post-cranial skeleton. The sutures of the skull were, however, well united, suggestive of an older adult of no more than *c.*40 years of age at the time of death. Thus for the purposes of this study the individual represented by skeleton number one may be regarded as having died somewhere between the ages of 23-40 yrs.

The preservation of the right femur, including the sub-trochanteric region of the proximal shaft, meant that an index could be calculated to express the degree of anterior-posterior shaft flattening (Brothwell 1981). The formulae employed and results for this are reprinted below:

$$\text{Platymeric index: } \frac{\text{FeD}_1 \times 100}{\text{FeD}_2} \quad \text{ie.} \quad \frac{25 \times 100}{37.2} = 67.2 \quad (\text{Platymeric})$$

With some minor refitting of the right fibula an estimation of living stature was possible in this case. With the use of the regression equation described by Trotter and Gleser (1952 & 1958) the maximum length of the right fibula (367 mm) could be projected into an estimated living stature of 170 cm. This living stature is comparable to the mean stature observed in males at the neighbouring site of Newark St (Wakely 1996.34). Mean stature calculated from a total of seven Males at Newark St equalled 171 cm. This lends greater support to the belief that this individual was a male since the female mean observed at Newark St (calculated from 9 individuals) was considerably lower, at just 159 cm.

The skeletal remains of this skeleton bore no signs of pathology or morphological variation. The absence of such features is not unusual even in complete/well preserved skeletons. Few pathological conditions leave their mark on the skeleton compared to soft tissue diseases and morphological variants are not a feature of all skeletons, however, the poor preservation and high level of fragmentation observed in this individual would have made such features infinitely more allusive had they been present. Cause of death must thus be left undefined.

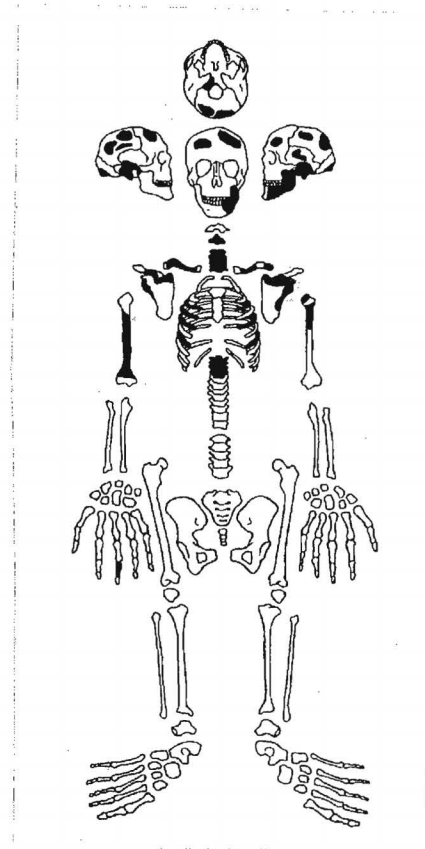
### *Skeleton 2*

**Age:** 30-40 yrs  
**Sex:** female (?)  
**Stature:** incalculable

The remains of skeleton number two were also excavated from a stratified archaeological sequence (context no. 209) within an apparent grave cut (cut no. 207). Again the remains were seen to be articulated in the manner of an inhumation burial.

Bone survival was fair, though most elements had sustained decomposition/fragmentation to some extent. Upon analysis only the following elements could be accurately identified, these predominantly representing the region of the upper body:

L & R parietals (frags.)  
 L & R temporals (frags.)  
 Frontal (frags.)  
 Occipital (frags.)  
 L. Mandible  
 Axis (C2 vertebrae)  
 Cervical vertebrae (C2-7)  
 Thoracic vertebrae (T1-4)  
 L & R. clavicles (shafts)  
 L & R. Scapular (frags.)  
 L & R. Ribs  
 L. Humerus (prox. head & shaft)  
 R. Humerus (shaft)  
 R. 3rd medial phalanx

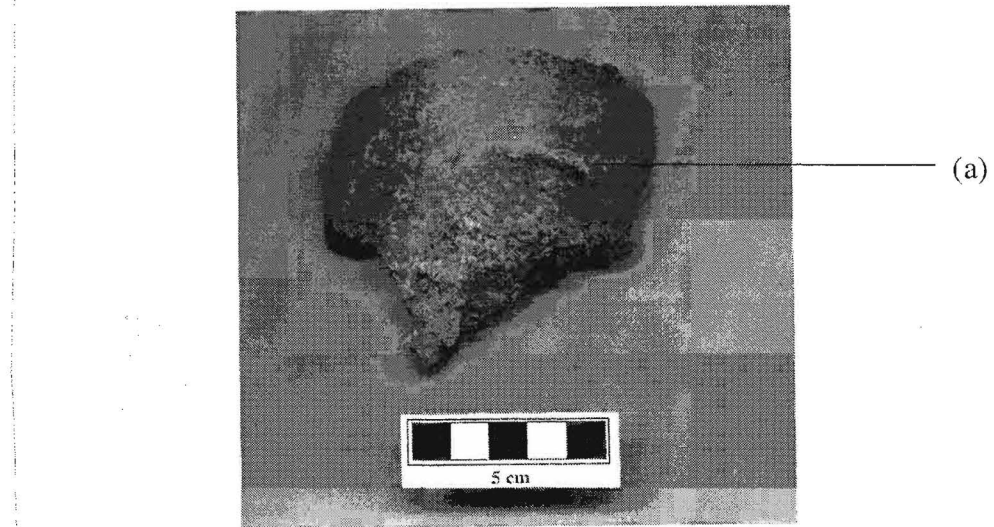


**Figure 34. Stylised drawing of skeleton number two showing parts present (in black).**

Sex determination of this individual has had to remain uncertain since morphological and metrical analysis produced inconclusive results. Generally the skeleton spoke of an individual of medium build with fairly understated muscle attachments (except for the nuchal crest, see below). Metrical analysis of the most sexually dimorphic bones (in this case the humeral head, nuchal crest and scapular glenoid cavity, in order of reliability) could not produce certain results. Although the humeral head clearly suggested a female the large size of the glenoid cavity and the very well developed nuchal crest (fig 35) cast a degree of uncertainty over this conclusion. This individual has thus been defined as female (?)

The appearance of the nuchal crest, the insertion point (on the occipital bone) of the posterior neck muscles is worthy of a brief note. As well as being of large general appearance there has also been the development of *exostosis* or *enthesophyte* (fig. 35) a common indicator of excessive muscle use and/or injury. As to whether this excessive musculature was caused through occupational behaviour, such as the

carrying of heavy loads on the head (Chapman 1995.25; Zivanovic 1982.80) we cannot say with certainty.



**Figure 35 Enlarged nuchal crest displaying exostosis/enthesisophyte (a) at the point of insertion.**

The presence of 35% of the adult dentition (all from mandible) meant that the age of death could be fairly accurately determined on the basis of dental development and occlusal attrition (using Miles 1963). In this case all the adult dentition had fully developed, this culminating in the eruption of the 3rd Molar (wisdom) teeth at age of c.15-21 years. The mandibular dentition had been worn, through continuous use and coarse food, to a level compatible with an individual who had reached the age of c.30-35 yrs.

Maxillary dentition missing  
8 7 6 5 NP 3 NP NP NP NP 3 4 5 6 7 8

Dentition appeared healthy, displaying no evidence of nutritional deficiency (hypoplasia) or caries. Calculus (tartar) build up was present but slight. All teeth classed as 'Not Present' (NP) above were lost post-mortem and are not to be regarded as teeth lost during the life of this individual.

Due to the incomplete state of all of the bones present no estimation of stature could be made in this case.

The skeletal remains of this individual bore no sign of pathology or morphological variation. The cause of death thus remains inconclusive

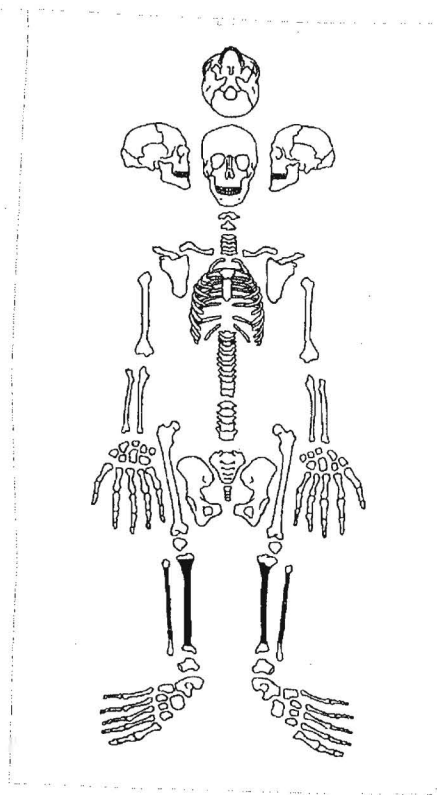
*Skeleton 3*

Age: 5 yrs  
 Sex: indeterminate  
 Stature: incalculable

The least well represented individual from the inhumed examples was that of skeleton number three. This under representation may be partly a result of the fragility of juvenile bones (Walker, Johnson & Lambert 1988) and of the elements of excavation. In this instance only the major limits of the lower legs and one vertebral fragment were recovered. These were located within a stratified sequence (context no. 235) and appeared to be in anatomically correct positions, thus probably represented the remains of an inhumation burial.

All parts present could be accurately identified during the course of the analysis, these were:

Thoracic vertebrae (neural arch only)  
 L. Tibia (diaphysis only)  
 R. Tibia (diaphysis only)  
 L. Fibula (diaphysis only)  
 R. fibula (diaphysis only)



**Figure 36** Stylised drawing of skeleton number three showing parts present (in black).

Both tibiae and the left fibula were preserved to a near complete state, though all epiphyses were missing. Measurement of the diaphysial lengths of these, using the method described by Sundick (1978) suggested that this individual was *c.* 5 yrs old at the time of death.

No other observations of note were made during the analysis of this individual. Since it is not possible to determine the sex or stature of such young skeletal individuals these have not been given here.

*The charnel remains*

Several miscellaneous human bones were located within archaeological contexts which could not (in the field) be interpreted as inhumation fills. The context numbers in question were nos. 7, 26, and 62.

Context 7: Contained the left side of a mandible containing nine permanent (adult) teeth.

Maxillary dentition missing  
NP NP NP NP NP NP 2 1 1 2 3 4 5 6 7 NP

Wear facets on the apex of the lingual tooth surfaces, mostly on the lower incisors and canine suggest that this person had a slight 'over bite', whereby the upper teeth have occluded with the lower at an unusual angle causing the wear facets observed. Although the teeth have been worn in an unusual manner (due to the 'over bite') the level of attrition is consistent with an individual who has reached the age of 25-30 yrs.

Context 26: Contained a single adult Axis vertebrae (C2). Age and sex of the individual from which this came cannot be determined.

Context 62: Contained various cranial fragments, including Left parietal, Left temporal and fragments of the occipital. The presence of a small mastoid process suggests that this individual was a female. Also, the presence of a small length of coronal suture in a well united state implies that this individual was of middle age at the time of death.

*Summary*

It has been the intention of the current report to catalogue and attempt to interpret the metrical and observational data retrievable from the analysis of the human remains from York Rd.

In summary, the human remains from York Rd represented a minimum of three conspicuous individuals, this figure remains constant even when the charnel bones are taken into account since each of these elements could feasibly have been disturbed from the three inhumation graves.

Those individuals present seem to represent a broad cross section of the community who used the York Road burial ground. Since a male (?), female (?) and an infant were identified during the course of this analysis it is clear that the cemetery was not reserved for any particular age/sex sub group of the community. This observation was also made at Newark St (Wakely 1996.33) thus there is an apparent degree of homogeneity between the two sites, supporting the notion that both sites are situated within the boundaries of the same cemetery.

Osteological analysis of the surviving bone did not produce any evidence regarding the health of those individuals represented. The under representation of individual body parts, fragmentation and decomposition has seriously limited the potential of a study of this nature.



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**Appendix 1.1: Representation of bone elements for the most common species.**

<b>Ox</b>	<b>Roman</b>	<b>Medieval</b>	<b>Sheep</b>	<b>Roman</b>	<b>Medieval</b>
Horn Core	7	7	Horn Core	0	3
Upper orbit	0	2	Upper orbit	0	2
Lower Orbit	4	2	Lower Orbit	0	4
Occipital Condyle	0	2	Occipital Condyle	0	5
Petrous	3	4	Petrous	0	2
Maxillae +tth	2	1	Maxillae +tth	0	9
Mandible +tth	5	1	Mandible +tth	3	11
Scapula D	4	7	Scapula D	1	5
Humerus D	2	6	Humerus D	2	6
Humerus P	0	2	Humerus P	0	2
Radius P	2	2	Radius P	1	8
Radius D	3	1	Radius D	0	4
Ulna P	0	3	Ulna P	0	2
Metacarpal P	5	3	Metacarpal P	0	8
Metacarpal D	7	3	Metacarpal D	0	7
1st Phal	4	2	1st Phal	0	2
2nd Phal	1	1	2nd Phal	0	0
3rd Phal	6	2	3rd Phal	0	0
Pelvis (acet +illium)	2	4	Pelvis (acet +illium)	0	13
Femur P	0	1	Femur P	0	3
Femur D	0	0	Femur D	0	1
Tibia P	0	2	Tibia P	0	2
Tibia D	1	4	Tibia D	1	11
Calcaneum	1	3	Calcaneum	1	2
Astragalus	1	3	Astragalus	0	1
Metatarsal P	4	2	Metatarsal P	0	8
Metatarsal D	3	4	Metatarsal D	0	4
Atlas	0	1	Atlas	0	2
Axis	0	0	Axis	0	0
Vert frags	12	16	Vert frags	1	9
Loose teeth	21	21	Loose teeth	2	15

<b>Pig</b>	<b>Roman</b>	<b>Medieval</b>	<b>Horse</b>	<b>Roman</b>
Upper orbit	0	0	Upper orbit	0
Lower Orbit	0	0	Lower Orbit	0
Occipital Condyle	0	2	Occipital Condyle	0
Petrous	0	0	Petrous	0
Maxillae +tth	0	2	Maxillae +tth	0
Mandible +tth	2	7	Mandible +tth	0
Scapula D	0	3	Scapula D	2
Humerus D	2	4	Humerus D	2
Humerus P	0	3	Humerus P	1
Radius P	0	3	Radius P	2
Radius D	0	3	Radius D	3
Ulna P	0	4	Ulna P	0
Metacarpal P	0	0	Metacarpal P	3
Metacarpal D	0	2	Metacarpal D	4
1st Phal	0	0	1st Phal	0
2nd Phal	0	0	2nd Phal	0
3rd Phal	0	0	3rd Phal	1
Pelvis (acet +illum)	1	3	Pelvis (acet +illum)	1
Femur P	0	2	Femur P	0
Femur D	0	4	Femur D	0
Tibia P	0	3	Tibia P	1
Tibia D	0	4	Tibia D	2
Calcaneum	0	0	Calcaneum	0
Astragalus	0	2	Astragalus	0
Metatarsal P	0	1	Metatarsal P	0
Metatarsal D	0	0	Metatarsal D	0
Atlas	0	1	Atlas	0
Axis	0	0	Axis	0
Vert. frags	0	10	Vert. frags	0
Loose teeth	2	8	Loose teeth	26



**Appendix I.2: Epiphyseal fusion (cattle, sheep and pig)**

The following tables refer to species from Roman contexts:

<b>Roman Bone</b>	<b>Cattle Prox/Dist</b>	<b>Age (mo.)</b>	<b>Fused</b>	<b>Unfused</b>	<b>% Fused</b>
Pelvis	acet.	7-10 mo.	2	1	67
Scapula	D	7-8 mo.	4	0	100
1st Phal	P	13-15 mo.	3	1	75
Humerus	D	15-18 mo.	2	0	100
Radius	P	15-18 mo.	2	0	100
2nd Phal	P	18 mo.	3	1	75
MetaC	D	24-36 mo.	4	1	80
Tibia	D	24-30 mo.	1	0	100
MetaT	D	27-36 mo.	0	1	0
Femur	P	42 mo.	0	0	0
Calcaneum	P	36-42 mo.	1	0	100
Radius	D	42-48 mo.	3	0	100
Ulna	P	42-48 mo.	0	0	0
Humerus	P	42-48 mo.	0	0	0
Femur	D	42-48 mo.	0	0	0
Tibia	P	42-48 mo.	0	0	0
<b>Total</b>			<b>25</b>	<b>5</b>	<b>83</b>

<b>Roman Bone</b>	<b>Sheep Prox/Dist</b>	<b>Age (mo.)</b>	<b>Fused</b>	<b>Unfused</b>	<b>% Fused</b>
Pelvis	acet.	6-10 mo.	0	0	0
Scapula	D	6-8 mo.	1	0	100
Humerus	D	10 mo.	2	0	100
Radius	P	10 mo.	1	0	100
1st Phal	P	13-16 mo.	0	0	0
2nd Phal	P	13-16 mo.	0	0	0
MetaC	D	18-24 mo.	0	0	0
Tibia	D	18-24 mo.	1	0	100
MetaT	D	20-28 mo.	0	0	0
Ulna	P	30 mo.	0	0	0
Femur	P	30-36 mo.	0	0	0
Calcaneum	P	30-36 mo.	1	0	100
Radius	D	36 mo.	0	0	0
Humerus	P	36-42 mo.	0	0	0
Femur	D	36-42 mo.	0	0	0
Tibia	P	36-42 mo.	0	0	0
<b>Total</b>			<b>6</b>	<b>0</b>	<b>100</b>

<b>Roman</b>	<b>Pig</b>				
<b>Bone</b>	<b>Prox/Dist</b>	<b>Age (mo.)</b>	<b>Fused</b>	<b>Unfused</b>	<b>% Fused</b>
Scapula	D	12 mo.	1	0	100
Humerus	D	12 mo.	1	0	100
Radius	P	12 mo.	1	0	100
Pelvis	acet.	12 mo.	3	0	100
2nd Phal	P	12 mo.	0	0	
MetaC	D	24 mo.	0	2	0
Tibia	D	24 mo.	1	0	100
1st Phal	P	24 mo.	0	0	
Calcaneum	P	24-30 mo.	0	0	
MetaT	D	27 mo.	0	0	
Ulna	P	36-42 mo.	0	0	
Humerus	P	42 mo.	0	0	
Radius	D	42 mo.	0	1	0
Femur	P	42 mo.	0	0	
Femur	D	42 mo.	0	2	0
Tibia	P	42 mo.	0	0	
<b>Total</b>			<b>7</b>	<b>5</b>	<b>58</b>

The following tables refer to species from the medieval contexts:

<b>Medieval</b>	<b>Cattle</b>				
<b>Bone</b>	<b>Prox/Dist</b>	<b>Age (mo.)</b>	<b>Fused</b>	<b>Unfused</b>	<b>% Fused</b>
Pelvis	acet.	7-10 mo.	4	0	100
Scapula	D	7-8 mo.	7	0	100
1st Phal	P	13-15 mo.	2	0	100
Humerus	D	15-18 mo.	4	1	80
Radius	P	15-18 mo.	0	2	0
2nd Phal	P	18 mo.	1	0	100
MetaC	D	24-36 mo.	2	1	67
Tibia	D	24-30 mo.	3	1	75
MetaT	D	27-36 mo.	3	1	75
Femur	P	42 mo.	1	0	100
Calcaneum	P	36-42 mo.	0	0	0
Radius	D	42-48 mo.	1	0	100
Ulna	P	42-48 mo.	2	1	67
Humerus	P	42-48 mo.	1	1	50
Femur	D	42-48 mo.	0	0	0
Tibia	P	42-48 mo.	2	0	100
<b>Total</b>			<b>33</b>	<b>8</b>	<b>80</b>

<b>Medieval</b>	<b>Sheep</b>				
<b>Bone</b>	<b>Prox/Dist</b>	<b>Age (mo.)</b>	<b>Fused</b>	<b>Unfused</b>	<b>% Fused</b>
Pelvis	acet.	6-10 mo.	8	0	100
Scapula	D	6-8 mo.	5	0	100
Humerus	D	10 mo.	6	0	100
Radius	P	10 mo.	7	1	88
1st Phal	P	13-16 mo.	2	0	100
2nd Phal	P	13-16 mo.	0	0	0
MetaC	D	18-24 mo.	5	2	71
Tibia	D	18-24 mo.	11	0	100
MetaT	D	20-28 mo.	4	0	100
Ulna	P	30 mo.	1	1	50
Femur	P	30-36 mo.	2	1	67
Calcaneum	P	30-36 mo.	2	0	100
Radius	D	36 mo.	4	1	80
Humerus	P	36-42 mo.	0	2	0
Femur	D	36-42 mo.	0	1	0
Tibia	P	36-42 mo.	1	1	50
<b>Total</b>			<b>58</b>	<b>10</b>	<b>85</b>

<b>Medieval</b>	<b>Pig</b>				
<b>Bone</b>	<b>Prox/Dist</b>	<b>Age (mo.)</b>	<b>Fused</b>	<b>Unfused</b>	<b>% fused</b>
Scapula	D	12 mo.	1	2	33
Humerus	D	12 mo.	1	3	25
Radius	P	12 mo.	1	2	33
Pelvis	acet.	12 mo.	3	0	100
2nd Phal	P	12 mo.	0	0	0
MetaC	D	24 mo.	0	2	0
Tibia	D	24 mo.	1	3	25
1st Phal	P	24 mo.	0	0	0
Calcaneum	P	24-30 mo.	0	0	0
MetaT	D	27 mo.	0	0	0
Ulna	P	36-42 mo.	4	0	100
Humerus	P	42 mo.	0	3	0
Radius	D	42 mo.	0	1	0
Femur	P	42 mo.	0	2	0
Femur	D	42 mo.	0	4	0
Tibia	P	42 mo.	0	3	0
<b>Total</b>			<b>11</b>	<b>25</b>	<b>31</b>

**Appendix I. 3: Frequency of butchery marks on bone elements**

<b>Ox</b>	<b>Medieval</b>	<b>Roman</b>	<b>Sheep</b>	<b>Medieval</b>	<b>Roman</b>
<b>Skeletal Part</b>			<b>Skeletal Part</b>		
Horncore		1	Horncore		1
Cranium	1	1	Cranium		3
Maxilla			Maxilla		
Mandible			Mandible		
Scapula	3		Scapula		1
Humerus P	1		Humerus P		
Humerus D	5	2	Humerus D		
Radius P			Radius P		1
Radius D	1	1	Radius D		
Ulna	2		Ulna		
MetaC P	1		MetaC P		
MetaC D		1	MetaC D		
1st Phal			1st Phal		
2nd Phal			2nd Phal		
3rd Phal			3rd Phal		
Pelvis	3	1	Pelvis		1
Femur P			Femur P		
Femur D			Femur D		
Tibia P	1		Tibia P		
Tibia D	2		Tibia D		2
Calcaneum	1		Calcaneum		1
Astragalus			Astragalus		
MetaT P			MetaT P		
MetaT D	1		MetaT D		
Atlas	1	1	Atlas		2
Axis	1		Axis		2
Cerv	5		Cerv		2
Thor			Thor		
Lumb	2	1	Lumb		
Tarsals	2		Tarsals		
Carpals			Carpals		
Patella	1		Patella		
<b>Total</b>	<b>35</b>	<b>9</b>	<b>Total</b>	<b>16</b>	<b>1</b>

Other species, including pig, are not represented due to infrequency of butchery marks.

## Appendix II - Skeletal Metrics

**Table 13.** Post Cranial metrics (all measurements given in mm).

Metric	Side	Skeleton no.		
		1	2	3
FeD1	(l)	-	-	-
	(r)	25	-	-
FeD2	(l)	-	-	-
	(r)	37.2	-	-
FeE1	(l)	-	-	-
	(r)	80	-	-
Fe.circ.	(l)	-	-	-
	(r)	95	-	-
TiL1	(l)	-	-	-
	(r)	-	-	143 *
FiL1	(l)	-	-	-
	(r)	367	-	-
HHD	(l)	-	-	-
	(r)	-	43	-
HU. circ.	(l)	-	-	-
	(r)	-	68	-
Glenoid.L	(l)	36	35	-
	(r)	-	-	-

\* Daphysial length (missing epiphyses)

**Table 14.** Cranial metrics (all measurements given in mm).

Metric		Skeleton no.			Charnel context
		1	2	3	7
CyL	(l)	-	-	-	-
	(r)	-	19.5	-	-
RB1	(l)	-	27	-	-
	(r)	-	-	-	-
M2H	(l)	-	27.3	-	31.8
	(r)	-	-	-	-
M2	(l)	-	12	-	11.5
	(r)	-	-	-	-

Full descriptions of the metrics used in this analysis are recorded in Bass (1987) and Brothwell (1981). The shorthand codes used are those employed by the above named authors except for the following;

HU. circ. - Denoting the least humeral circumference, measurement taken distal to the deltoid tuberosity (see Bass 1987.147-8).

Fe.circ.- Denoting femoral midshaft circumference, using a cloth tape. The tape was made to follow even prominent linea asperi (see Bass 1987.213).