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HUNGATE DEVELOPMENT, YORK

RESEARCH DESIGN & SCHEME OF ARCHAEOLOGICAL INVESTIGATION

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HUNGATE RESEARCH DESIGN AND SCHEME OF ARCHAEOLOGICAL INVESTIGATION

(Revised Version, December 2003)

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Preliminary Statement

The Hungate Archaeological Project offers an unrivalled opportunity to examine a large area of central York and trace the history of the communities which have lived and died in the area over the last two thousand years.

This document is a revised version of the research design, method statement and costing which was originally prepared by York Archaeological Trust (YAT) in November 2003. The first document was prepared on the basis of the information made available to it by Mike Griffiths (consultant to the developers) and John Oxley (Principal Archaeologist, City of York Council). They clarified the approach expected in terms of which archaeological deposits should be preserved *in situ* on the site (and are not, therefore, a target for research), and which deposits are to be removed to make way for the re-development. Guidance has also been provided as to the perceived importance of the site, the unusual opportunities that it provides, and the range of research that is deemed to be desirable. Subsequent to the submission of the original document comments and further information have been supplied by both Mike Griffith and John Oxley.

The authors have translated this information, comment and guidance into a programme of archaeological investigation, which, we believe, not only satisfies the basic archaeological requirements for mitigation, but will also fulfil the potential of this site's buried remains to address important and stimulating questions of local, regional, national and international significance. The basis of the approach to exploring the site is one of sampling extensively and intensively the enormous quantity of archaeological material which it contains. In addition this document recognises the high level of public interest in archaeology which the Hungate excavation will generate and identifies means of allowing public access and participation in what will be a flagship project for the City of York

1. Research Design

1.1 Introduction

Research themes that will inform the archaeological excavation of the Hungate site have been developed from a consideration of:

- Reports on evaluation excavations and boreholes at the site in 2000-2
- Interpretation of the evaluation excavations and boreholes by M. Griffiths Associates (Griffiths 2002).
- A review of other archaeological excavations on the site itself and in its immediate vicinity.

1.2 Topography and Natural Environment

A detailed picture of the topography of the Hungate site has been established by means of archaeological excavation and boreholes, although further work is needed to confirm many details. In summary, the natural subsoil appears to slope with varying degrees of steepness from the line of what is now Stonebow and Peasholme Green to the River Foss i.e. from north-west to south-east in the eastern part of the site and from north to south in the western part. In both zones the natural gradient is greater than it is today. This picture of steep banks along the Foss has also been demonstrated on several sites to the north and south of Hungate between Layerthorpe and

York Castle precinct e.g. 38 Piccadilly (1992.4), 50 Piccadilly (1992.10) and Peasholme Green (1990-1.13). In addition a ridge, thought to be an outlier of the moraine, runs north-north-west / south-south-east across the centre of the site (Griffiths 2002, 13). This was found in FAS excavations at the Gas Works (FAS 2002) and in YAT Trench 8.

There are a number of reasons for the contrast between the Roman and the present day topography which are in many ways related to the river regime. Studies of river levels in York indicate that current average summer levels of c.5m Above Ordnance Datum are probably 3m or more higher than Roman levels (Radley and Sims 1970). In the Roman period, moreover, the rivers were subject to tidal influence and York probably stood at or near the tidal head of the Ouse. The course of the Foss has been the subject of considerable debate, but it now seems likely to have changed rather less since Roman times than was once thought, although it was probably wider than today. At 22 Piccadilly (1987.21), for example, the west bank of the Roman river is thought to have been found to the west of the present course, at a point where it turned to run south towards the Ouse confluence. In addition, some indication of palaeochannels were located in the evaluation work e.g. in boreholes drilled as part of the FAS excavations at the Gas Works (FAS 2002; Griffiths 2002,13). It is not clear, however, if the river before and during Roman times was as it was described in the late 18th century: '...it is a sluggish, winding river with a poor head of water so that even when canalised it frequently lacks sufficient water in a dry season to convey craft further than Foss Islands' (VCHY 1961, 475). Determining the character of the early river regime remains an important research objective that may be addressed in the Hungate project.

The rise in river levels in York since Roman times has been matched by rising ground level, especially in the bottom of the river valleys, giving a considerable build up of archaeological deposits in places including the Hungate site. This was demonstrated, for example, in YAT Trench 20 in which there were 5.50m of deposits above natural subsoil.

One result of the rising water table over the last 2000 years has been the creation of important waterlogged deposits of the pre-Roman, Roman and later periods in riparian zones. These have considerable potential for producing data on the ancient environment through survival of bones, plant materials, etc, as well as well-preserved organic artefacts such as wood, leather, etc. Any such data recovered from the Hungate project will form important comparative material for the data sets from other sites in York such as 16-22 Coppergate and General Accident Tanner Row (Hall and Kenward 1990).

1.2.1 Summary of Research Objectives for Topography and Natural Environment

- Modelling of natural topography
- Character of early river regime and location of palaeochannels
- Character of natural ecology and environment in pre-Roman period

1.3 Roman Period

Introduction

In terms of York's Roman topography the Hungate site is located south-east of the legionary fortress, north-east of the Ouse, and north-west of the river Foss which runs along the site's south-eastern boundary. The Hungate site may also lie immediately to the north-east of one of the main approach roads to the fortress, which was entered here through the *porta principalis sinistra*. Alternatively, the road may run through the western edge of the site itself (OS 1988).

The Roman archaeology of the Hungate site may be addressed under three principal headings:

- The riverside: inlets and possible docks
- Land use and settlement
- The cemetery

1.3.1 Roman Riverside: Inlets and Possible Docks

A notable feature of the natural topography of the Hungate area, as currently understood, is the existence of three narrow fingers of low-lying land which project into the site from the Foss, two on the south side and one on the eastern side. The westernmost was encountered in excavations in 1950-51 at Garden Place immediately west of the Hungate site (Richardson 1959). The north-west edge of what was then thought to be a palaeochannel of the Foss was reinforced with a double row of timber posts, adjacent to which there was a cobbled surface. At the south-west end of the cobbles there was a small but robust stone structure interpreted by the excavator as a crane base. It is now clear that the identification as a palaeochannel is not correct, but it is possible that what was found was an inlet serving as a beaching place for the small boats and barges which would have traversed the Foss in Roman times.

A modification of this interpretation offered by Griffiths (2002, 18-19) is that the natural inlet was extensively consolidated to make a dock and he goes on to propose a system of water management by which vessels could be accommodated at times of low tide. If this analysis is sustainable by further excavation it would be a most important discovery which as yet has no parallel in Roman Britain. Griffiths also offers the prospect of there being two other docks based on the other inlets. Whether this proves to be the case or not there may be riverside structures, revetments and the like which will be encountered during the project, and which will shed light on Roman river management, a subject about which little is known at York.

In additional to structural evidence, the Hungate site offers the potential for the study of the riverside environment in the Roman period. At Tanner Row, on the south bank of the River Ouse, a very distinctive development from a purely natural environment to one heavily influenced by humanity was recorded through changing suites of biological / botanical material (Hall and Kenward 1990). A comparable data set from the banks of York's other river would be of great interest. Secondly, it may be possible to determine the character of the Foss bank in the Roman period through the study of artefact assemblages. Large assemblages of pottery and other objects have been recovered from sites on the south-west bank of the Ouse which, in some respects at least, may be regarded as typical of commercial areas adjacent to a major trading river.

1.3.2 Land Use and Settlement

It is difficult at present to divine the character of Roman period land use on the Hungate site away from the river bank, except in respect of a cemetery located on the north-west side (see below). Any understanding of developments in a chronological sense is, moreover, hampered by the absence of any detailed analysis of the pottery assemblages from the evaluation work. However, it is clear that there is considerable potential at the Hungate site to learn about an area south-east of the fortress which is poorly understood. There is equal potential to test theories about the development of York's extra-mural areas in general (i.e. areas outside the fortress and the presumed walled town – *colonia* - south-west of Ouse) which have emerged in recent work by Patrick Ottaway (in prep.).

Hitherto, structural and artefactual evidence has suggested that late 1st – early 2nd century activity north-east of the Ouse, outside the fortress, was largely focused on a zone close to the south-west half of the fortress, lying between its defences and the Ouse. Immediately east of the east corner of the fortress, however, there appear to have been kilns for pottery and tile; this was an ideal location given the direction of the prevailing wind from the south-west and the availability of clay and water. Swan and McBride (2002, 193) identified three episodes of kiln waste deposition on sites in the Peasholme Green area, reflecting peaks in production in the late 1st / early 2nd century; late 130s – 140s and finally in the early 3rd century. The kilns apart, such evidence as there is for the zone around Hungate, south-east of the fortress, and along the Foss banks, suggests it was marginal land until well into the 2nd century.

There is good evidence for Roman structures, some of monumental character located adjacent to streets between what are now Parliament Street and Coney Street (Brinklow et al.1986; RCHMY1, 59). However, at 16-22 Coppergate late 1st – 2nd century ceramics appear to derive from refuse disposal, and the earliest land division and structures of timber and stone are probably mid 3rd century. At the Garden Place site (already noted above) there was some early pottery, but the majority appears to date to the 3rd – mid 4th centuries (Monaghan 1997, 1077). Any putative dock is, therefore, unlikely to have been associated with supplying the fortress in the early Roman period, but rather to have been associated with burgeoning trade in the Antonine – Severan period. North-west of the Hungate site at 21-33 Aldwark (Brinklow et al.1986) there was virtually no South Gaulish Samian and the earliest street, aligned north-west / south-east, was late 2nd century. The area was still sufficiently remote from settlement, however, for it to be suitable for a burial of this date. In a restricted evaluation trench at Peasholme Green (1990.13 and 1991.13) a sequence of Roman deposits and surfaces began in the early 3rd century.

Such information as there is for the Roman pottery from the Hungate evaluations suggests that activity is not likely to have begun in earnest hereabouts until the mid – late 2nd century. What this activity involved, aside from any waterside commercial facilities, is not clear. Structural evidence appears to be confined to a substantial stone-lined drain of uncertain alignment – presumably but not certainly Roman - found in YAT Trench 13. If this is indeed Roman it may indicate a structure of some importance in the immediate vicinity, and a deposit thought to have been building debris was found adjacent. Intriguing traces of timber buildings, again not certainly Roman in date, which post-dated the cemetery, were found in FAS Trench 4. One is led to exercise some caution in asserting these features to be Roman because it is, in fact, very rare in Britain for a Roman cemetery to be succeeded by buildings used for non-cemetery functions. In addition to buildings, Griffiths has suggested the presence of two or more streets on the Hungate site, but the evidence is slight and requires further investigation.

As far as the late Roman period in York's extramural areas is concerned, there is in general terms very little evidence for activity – other than burial – after about 360, in marked contrast to the fortress and town (*colonia*) south-west of the Ouse. At present the evidence of the pottery from the Hungate evaluations appears to confirm that the site conforms to this pattern.

Further excavation is clearly required to address questions surrounding Roman land use at Hungate, but there is potential for making a considerable contribution to the understanding of extramural history of Roman York as a whole.

1.3.3 The Cemetery

A considerable quantity of data exists for the Roman cemeteries of York, but as much of it was recovered in the 19th - early 20th centuries it is not easy to make much sense either of the development of the cemeteries themselves or of burial customs. However, a review by Jones (1984), supplemented by work by Ottaway (in prep.), suggests that if cremation is taken to be the dominant burial rite for adults in the late 1st – mid 2nd century, then the earliest cemeteries north-east of the Ouse were often located at some distance from the fortress. There are examples at Burton Stone Lane, c. 0.72km north-west of the fortress on the line of Road 7; at Clifton Fields c. 0.74km also north-west of the fortress and adjacent to Road 6; in two areas at Heworth c. 0.85km to the north-east of the fortress, close to the Roads 3 and 4; and at Fishergate, c.1 km south-east of the fortress (RCHMY1, 69).

South-west of the Ouse the picture is not so clear; at Trentholme Drive c.1.5km from the Roman Ouse crossing, there were cremations, but the earliest appear to date to c.160 (Wenham 1968). The transition from cremation to inhumation at York appears to have been a complex process with a considerable overlap period, probably lasting from mid 2nd – mid 3rd century. At Trentholme Drive, as at Hungate, there were cremations demonstrably later than inhumations. For the period in which inhumation was the dominant rite (mid 3rd century and later), understanding of cemetery development becomes more difficult as many graves were unfurnished and therefore do not readily produce dating information. It is of some interest, however, that the burials at Hungate are dated to the late 2nd - early 3rd century; the cemetery may be a further example of a process recorded elsewhere in York (e.g. 26-28 Marygate and 35-41 Blossom Street) in which vacant areas that lay closer to settled areas than did the earliest cemeteries were used for burial at a time when the population of Roman York was clearly expanding.

The first systematic excavation of a large Roman cemetery in York took place at Trentholme Drive (Wenham 1968). Since then small numbers of burials have been excavated archaeologically at many sites. These excavations have added a considerable amount to the understanding of cemetery development and burial practice, although there has been no full publication. It has not proved possible to undertake further anthropological analysis on skeletal material comparable to that carried out by Roger Warwick on the remains from Trentholme Drive.

The prospect of excavating and analysing what may turn out to be a large Roman cemetery at Hungate to modern standards is most exciting. Combined with full study of other unpublished material, it should provide a firm basis for setting Roman burial practice and population in York in the context of Roman Britain as a whole. *Britannia*'s population is currently exemplified largely by cemeteries in the south of England at London, Winchester, Dorchester and Colchester.

Lack of large-scale cemetery excavation and of research into human population as a whole was noted in the English Heritage Resource Assessment exercise (Ottaway 2003, 148).

1.3.4 Summary of Research Objectives for the Roman Period

- Analysis of waterlogged deposits for environmental material and comparative analysis with other data sets from riverside and other areas.
- Determine character and development of the Roman riverside by recording any structural evidence for docks and the like, and examining artefact assemblages.
- Study land use patterns with a view to comparison with other extramural areas.
- Establish existence or otherwise of proposed Roman streets and other topographical features.
- Study the Roman cemetery in respect of spatial development, burial customs, social structure and physical anthropology of population.

1.4. Anglian and Anglo-Scandinavian Periods, 400-1069

This era of York's history includes four distinct epochs

1. The Sub-Roman period (c.400-500). This is the century or so after the withdrawal of the Roman army from Britain, a time when native Romanised Britons had to adapt to life without Rome.

2. The Early or Pagan Anglian/Anglo-Saxon period (c.500-627). This covers the time when the earliest (pagan) Anglo-Saxon traits appear in the archaeological record. It terminates, notionally, with the adoption of Christianity by an Anglo-Saxon king of Northumbria in 627 and the simultaneous creation of a bishopric in York.

3. The Anglian or 'Middle Saxon' period (627-866). These are the two and a half centuries of Christian Anglo-Saxon rule in Northumbria, before the arrival of Vikings in York.

4. The Late Saxon or Anglo-Scandinavian period (866-1069). Two hundred years in which, firstly, a series of Viking kings controlled York and then, from 954, the city and county were incorporated permanently within the newly consolidated kingdom of England. By 1069, when Norman authority was indelibly stamped upon it,York was the second city of the kingdom in size and wealth, a great manufacturing and trading centre of international status.

1.4.1. The Sub-Roman Period, c.400-500

The sub-Roman period is archaeologically elusive in York, as so often elsewhere, particularly in towns. Recent developments in the archaeology of York and Yorkshire have identified the potential to isolate 5th-century activity through a detailed examination and seriation of what has hitherto been thought of as a homogeneous late Roman regional ceramic tradition. The currently available evidence from the Hungate evaluations suggests that Roman activity may have declined there from c.360 onwards, for there is a dearth of the pottery in question; if this is so, then sub-Roman activity will not be anticipated. If, however, assemblages of latest Roman pottery are recovered in the excavation campaign, their detailed study might illuminate this 'dark age'. Studies of alluvial silts have the potential to indicate any activities taking place upstream of York at this period.

1.4.2. The Early (Pagan) Anglian Period, c.500-627

The Early Anglian period is sparsely represented in the archaeological record in and immediately around York. Apart from burials, some of them near Roman cemeteries, there is a scatter of occasional artefacts found without any contemporary archaeological context. No buildings or settlement of this period have been found within the zone defined by the medieval city walls. Nothing that could be attributed to this period was found in the Hungate evaluations, and there are no recorded finds of Early Anglian material from the area of the redevelopment, or its vicinity. Given the rarity of Early Anglian material from the City of York, any discovery relating to this period would command considerable interest, but none can be anticipated.

1.4.3. The Anglian (Middle Saxon) Period, 627-866

The period of the 7th – early 9th centuries is one where archaeological and historical studies over the last two decades have posed new questions and challenges across England. York has played its part in this process, being one of a series of sites known by their Old English designation as *wics* (for a recent survey of the evidence for Anglian York see Tweddle et al. 1999). Others correspond to the modern cities of London, Southampton, Ipswich and Canterbury. These were top rank centres of trade at this time; by the standards of the day, some of them - London and Southampton in particular, and probably, in the light of very recent discoveries, Canterbury - were extensive, quite densely populated settlements. International, inter-regional and regional trading were among their hallmarks; their locations on important water routes were critical for their development.

Anglian York, known as *Eoforwic*, is attested in contemporary documents as a place of royal, ecclesiastical and commercial significance (Rollason 1998). Apart from indications of activity in the zone around the Minster, however, there is little stratified archaeological evidence for activity and occupation. The only area in which secular buildings of this era have been found is the Fishergate suburb, at and just beyond the confluence of the River Foss with the River Ouse (Kemp 1996). This has led some commentators to speculate that the *wic* at York should be sought on the east bank of the river Foss, extending upstream as far as a point approximately opposite the southern limit of the Hungate redevelopment site. An alternative view is that commercial activities may have been focused along the banks of both the Ouse and the Foss. The sparse evidence provided by the distribution of imported pottery, one of the most obvious indicators of foreign contacts, would support this latter interpretation.

There are several lines of argument to suggest that Anglian activity is not likely to be forthcoming at Hungate. Previous ground disturbances in the Hungate area have produced only a couple of items of Anglian date. These come from Richardson's excavations in 1950-51, and are without any contemporary context. Furthermore, there is no evidence that any of the medieval churches that were located in the redevelopment zone had an origin in the pre-Norman period, let alone the Anglian era. Also, the lack of any structural evidence for Anglian occupation from the evaluation exercise might be held to indicate that none is present on the site. However, it should be borne in mind that at the sole published site that has produced Anglian buildings in York (46-54 Fishergate), York Archaeological Trust found those buildings were widely spaced. It is thus quite likely that similar occupation would not have been detected in evaluation trenching such as that undertaken thus far at Hungate.

The scatter of Anglian pottery recovered from the Hungate evaluations is, perhaps, a more promising sign that the site was used for occupation or activity in the 7th-9th centuries. Its interpretation is not necessarily straightforward, however. It should be viewed against the backdrop of a quite widespread but sparse occurrence of Anglian pottery and artefacts across York. These may reflect contemporary activity or occupation at all of these find-spots. Alternatively, the presence of these artefacts may represent later importation of soil from elsewhere in the city, and/or the continuing circulation of some Anglian style material into the Anglo-Scandinavian period. Thus, interpretation of this material is equivocal, and can only be refined by the discovery of *in situ* contemporary deposits, which have not been isolated within the Hungate evaluation trenches.

Nonetheless, the riverside strip of the redevelopment site potentially offers an important opportunity to search for evidence for the Anglian period, whether in terms of occupation, or of activities related to commerce, manufacturing and water-borne trade. The arc of the riverside below Layerthorpe Bridge has been identified as a shallow, gently shelving waterfront; this area might have commended itself for beaching vessels for unloading or repair.

1.4.4. Anglo-Scandinavian (Late Saxon) Period, c.866-1069

It was during this period that York developed socially, economically and topographically into a recognisable predecessor of the medieval and modern city. The stages by which it did this are not well understood, and how the Hungate area evolved at this time is unknown. Whatever the pattern of settlement or activity here in the pre-Viking period, there may have been a complete break in the later 9th century; continuity cannot be assumed. Over much of York the Anglo-Scandinavian period saw the laying out of new streets, land divisions and churches; this may have been the pattern around Hungate, where the waterfront may have been a key factor for the manner in which the area was utilised.

The Viking Age waterfront is crucial to an understanding of Hungate's development at this time. Richardson's interpretation of discoveries at the Garden Place site, excavated 1950-51, hinged upon what was described as an embankment. This has often been discussed as if it is part of a defensive *enceinte* of Viking Age creation. It may, however, be a more complex feature, created over some time, that served as, for example, a flood defence, or an elevated platform for building upon. Its dating is based on the pottery in the layers that sealed it - this is of the late 11th/12th century. Whatever the feature's purposes, it may have exerted a considerable influence on the evolution of settlement in the Hungate area, demarcating zones of different use. Given the uncertainties that surround this 'embankment', any opportunity to clarify its purpose, date and impact would be most welcome. The Hungate evaluation may have uncovered a feature related to the embankment in some way (Block G; FAS 2002, Intervention 4); the opportunity to investigate this further, to assess its form, function and date, and to determine its impact on adjacent activities is a priority.

One model for Jorvik's growth suggests that the St Saviourgate – Hungate area may have been developed in the later 10th-earlier 11th century. The evaluations have also hinted at Anglo-Scandinavian activity and occupation, presumably along contemporary street frontages, principally that of Hungate. At present, however, it is not known which (if any) of these streets were laid out in the Viking Age. Verifying this and acquiring detailed data about the characteristics and density of occupation is important, for it has the potential to advance significantly our understanding of Jorvik's development.

The nature of any Anglo-Scandinavian occupation needs to be characterised in order to allow comparison with other areas of the town, notably that centred on 16-22 Coppergate. This research objective has recently been highlighted by Hall (2003, 173) in the English Heritage sponsored regional Resource Assessment. Recent analyses have identified traces of hitherto unrecognised industrial activity of Anglo-Scandinavian type among the material excavated by Richardson; this needs to be seen within a wider context. Evidence from the MAP excavations at Layerthorpe Bridge suggests that leatherworking industries were located hereabouts in the pre-Norman period. The possibility that their noxious presence had a more widespread impact on the area, and that the much later documented presence of cordwainers hereabout can be traced back to this origin, deserves further investigation.

1.4.5. Summary of Research Objectives, 400-1069

- No specific objectives can be established for the Sub-Roman and Pagan Anglo-Saxon periods spanning the 5th- early 7th centuries. Any discoveries relating to these centuries would be an unexpected bonus, to be interpreted in relation to remains from earlier and subsequent periods, and in terms of the overall pattern of evidence from York and its hinterland.

- Establishing whether there was activity or occupation of any sort at Hungate in the Middle Anglo-Saxon period (7th - early 9th centuries) is the initial objective; characterising it through topographical, artefactual and other means, and comparing it with evidence from elsewhere in York (and beyond) is the subsequent basic requirement.

- Determining the origins, development and character of activity and occupation in the Anglo-Scandinavian period of the later 9th - later 11 centuries seems the most achievable basic research outcome for this entire era. Defining how patterns of land ownership and use changed topographically and functionally throughout the era will be key to refining an understanding of the urban revolution of this period.

- Were defences, either of the town as a whole or of individual property holdings, created during this period; if so, what was their date, impact and fate?

1.5. Medieval Period, 1069-1500

1.5.1. Land/Water Interfaces

The Norman Conquest marks a key point in the topographical development of the Hungate area, thanks to the damming of the River Foss by William the Conqueror and the changes in water level consequent upon this act. Charting the extent of the King's Pool and tracing the stages by which it was reclaimed is fundamental to an understanding of the medieval community in Hungate. Recently published research has demonstrated that the Pool's water level fluctuated throughout the later medieval and post-medieval periods, the result of a variety of human and natural factors. The levels recorded a few hundred metres downstream from Hungate varied beyond the range that the evaluation has suggested at Hungate itself. Clarifying these issues, charting stages of land reclamation, comparing them with evidence from elsewhere in York and determining the degree to which reclamation reflected macro-economic as opposed to individual circumstances would be of interest within the story of Hungate itself. It would also assist in a

more general understanding of York's response to changing times, and how the archaeological record inter-relates with received wisdom about York's evolution.

The Pool edge and alluvial deposits in general also offer important opportunities for chemical, geological and biological examination of riverbank and riverside deposits. In addition to contributing detail to the research topics noted above, these techniques have the potential to inform about conditions of land management, agricultural regimes, rural industries and polluting activities in the upstream, rural areas of York's hinterland.

All the themes referred to above may be addressed through the study of pre-pile probes and in the excavation of the deeper holes required for the sewers and lifts required in the new buildings.

1.5.2. The Buildings and Layout of Later Medieval Hungate

The principal medieval structure known to have stood on the Hungate site is the church of St John in the Marsh. What may have been part of the structure and a number of burials from the cemetery were encountered in evaluation trenches. It is anticipated, however, that both church and cemetery will be preserved and not form any further part of the Hungate project.

A major religious house in the Hungate area was that of the Carmelite Friars, but its remains lie largely outside the redevelopment footprint. Although careful observation will be needed during the watching briefs on Block G and elsewhere to ensure that no upstanding fragments of any structure are overlooked during the mechanical clearance, it is not anticipated that any significant advance in our knowledge of this institution will be forthcoming.

Clarifying the extent and nature of medieval occupation on the Hungate site as a whole may be seen as an important research theme. It will allow comparison with other zones of medieval York already examined archaeologically. This theme will cover the laying out or continued development of streets (notably Hungate and Haver Lane), the types of houses and other buildings along and behind them, and the nature and intensity of use of backyards. At present it is not possible to isolate particular secular structures of medieval date that have any marked potential, such as the houses or properties of named medieval citizens. If this is not possible through further documentary work, archaeology may none the less allow characterisation of the area in such a way as to inform an appreciation of social patterning in the medieval community hereabouts.

1.5.3. Medieval Rubbish

The suggested presence of extensive medieval refuse tips at Hungate provides a challenging opportunity to investigate aspects of rubbish disposal. Hand excavation of the lift pits would, for example, provide a control of detailed stratigraphic information, and the pre-pile probes may have the capacity to retrieve more widespread samples of relevance. Chemical and other scientific analysis of these deposits might inform topics of national and international interest such as the causes, variables and rates of decay in these rubbish deposits. There is a series of modern concerns about closely related problems, and these medieval deposits may act as models through these problems may be addressed.
It may also be possible to resolve questions about the origins of these tips. Traditionally they have been associated with reclamation of land from the King's Pool. Alternatively, was medieval dumping encouraged because the area was already deemed to be unsavoury, and/or because it

was desirable to mask pre-existing tanners' waste with less noxious if still unpleasant domestic rubbish?

1.5.4. Summary of Research Objectives for the Medieval Period

- How did the creation of the King's Pool affect the pre-existing pattern of occupation?
- By what stages, using what methods, and for what purposes, was the Pool reclaimed?
- How did patterns of medieval land use evolve alongside these variations in the water regime?
- When and by what mechanisms were major topographical features such as streets and properties formed?
- How does the pattern of building and land use compare to those known from other long medieval sequences excavated in York?
- The nature of rubbish dumping, and the degradation processes that occurred within the dump.

1.6. Post-Medieval /Early Modern Periods, c.1550 – 2000

A detailed account of the post-medieval and modern periods has been presented in the *Environmental Impact Statement* (Griffths 2002, 46-61) and what follows has used that as the starting point for a more summary account.

From the late 16th – 17th century onwards a good picture of the development and topography of the Hungate area can be built up using maps as a major source of evidence, although their accuracy and reliability are not of the highest order until the early 19th century. On the first map to show the whole city of York, published by Braun and Hogenberg in c.1585 and largely replicated by John Speed in c.1610, the street Hungate is shown running down to a River Foss that is depicted as being rather wider than it is today. This width presumably reflects the lasting influence of the damming in the Norman period for the King's Fishpool. Reclamation was evidently still continuing in 17th – 18th centuries and well-preserved archaeological deposits of the period have been located during evaluations, borehole surveys and watching briefs. Foss Islands, located within the former Fishpool, first appear on Horsley's map of 1694.

The area west of Hungate, the site of the Carmelite Friary dissolved in 1538, is shown as largely open ground, while the area east of Hungate and south of Peasholme Green is referred to by Braun and Hogenberg, and by Speed, as St John's Green. The name is taken from the medieval church disused in 1519 and sold off in 1550. Another street with a dog-legged course is shown running off Hungate to the east. This may be a forerunner of Palmer Lane, then probably known as Pound Lane as it led to Pound Garth. A couple of buildings are shown near junction of the lane with Hungate, one of which may be the Cordwainers' Hall thought to have stood at or near the junction of Palmer Lane and Hungate. Haver Lane is not shown on these maps, although known to be medieval in origin.

On Archer's map of c.1682 the street Hungate is shown as built up, especially on its eastern side as far as the river, but it is largely flanked by open ground to the west. Haver Lane is shown linking Hungate with Haymarket. Pound Lane is shown roughly as on the earlier maps with some buildings along it. On land east of Hungate and south of Haymarket and Peasholme Green there are small enclosures, possibly fields or orchards. On Horsley's map of 1694 built-up areas are shown very schematically, but there are small fields or closes and no buildings south of Pound Lane. In addition the Cordwainers' Hall is shown, named, at the junction of the lane with Hungate.

The late 17th – 18th century is perhaps a time when at least some of the buildings on Hungate were 'residences of considerable and opulent merchants' to quote Hargrove (1818), although by his time there were 'very few superior houses'. In Francis White's map of 1785 (reproduced by Hargrove) Hungate is shown built up as far south as Haver Lane, but Pound Lane has few buildings along it. East and west of Hungate there are small enclosures – again possibly fields or orchards. The River Foss is still shown wider than it would become by the early 19th century after canalisation began. A specific reference to a Hungate midden of 1754, quoted in VCHY, mentions the nuisance caused by the kennelling of fox hounds nearby. In 1793 an Act of Parliament was passed for the improvement of the Foss and by 1794 work had proceeded from the Ouse confluence as far as Monk Bridge.

In the early 19th century development of the Hungate area began in earnest. Hargrove (1818) records that Dundas Street was laid out in 1812-3 and it appears to be built-up on its west side in the Baines map of 1822. Hungate is shown built up on both sides as far as what has now become Palmer Lane, and then on its west side as far as the river, where there is a large building with a central courtyard on the river front. The western end of Palmer Lane is not built up, but it is built-up east of the Dundas Street junction. However, south of the lane there are still small enclosures.

By the 1840s Hungate had become an area of poor working class housing. The 1st edition Ordnance Survey of 1852 provides evidence for considerable building in the previous 30 years. Hungate, Palmer Lane and Dundas Street and a new street Carmelite Street are all heavily built up. The early 19th century was a period when York's population was rising, boosted by immigration from the countryside and from Ireland. There are some important research issues arising out of the study of material culture of the period which may be addressed at Hungate to show how quickly these immigrants adopted a distinct urban culture (Newman 2001, 99). Land between Palmer Lane and the river was still open and appears to be gardens, with summerhouses marked in various places. South of Palmer Lane is the Union Gasworks, established in 1837 but closed in 1850, just before the OS map was published. The Gasworks had been sold to Leetham's Mills; this led in 1888 to a revival of the Foss navigation work, the original works having failed by 1845.

In 1901 the Hungate area, meaning the area west of Dundas Street, was referred to by Seebohm Rowntree in his book *Poverty: A Study in Town Life* as one of the main slum districts of York. The area east of Dundas Street was not quite so deprived, being described as inhabited by the working class, but with 'a few houses where servants were kept'.

The 1909 OS map shows saw mills on the site of gas works and a flour mill west of Hungate. During the 1930s the Hungate area was cleared of slums and the 1937 OS map shows it largely empty. In the 1950s the area was redeveloped for light industry and warehousing including a

new telephone exchange on Garden Place. In 1955 The Stonebow was laid out and between 1960s and 1980s further buildings were erected including a complex for the North-Eastern Electricity Board (NEEB)

1.6.1. Research Objectives for the Post-medieval/Early Modern Period

The research objectives for the post-medieval/early/modern period listed below build on those identified by Griffiths (2002, 60) and should be seen against the background of those identified by Cranstone (2003) for the Yorkshire region as a whole, in particular: industrialisation and urbanisation, improvements in transport and their effects, capitalism and the class structure, migration and culture contact. For Hungate the suggested objectives are:

- Topographical and environmental developments on the Foss bank as it changes from being a relatively wide and sluggish river to one which is heavily canalised for navigation.

- Development of housing 17th – mid 19th century, but especially in the first half of the 19th century when Hungate witnessed considerable new development.

- The layout and character of the extensive gardens and orchards shown on the maps of 17th – 19th century.

- The life styles of some of the poorest sections of the community in the 19th century. Archaeological data may be used for comparison with statistical data e.g. in Rowntree's *Poverty: A Study in Town Life* (1901). Another approach is the comparison of material culture and environmental data with that recovered from post-medieval contexts elsewhere in York e.g. at the Bedern (Richards 2001, 627-61) and other urban contexts.

- Examination of industrial facilities. Of particular interest is the gasworks. As it was only briefly used it may survive as a 'time capsule' of the technology of the time.

2. Method Statement

In this section each block or area of the Hungate site is considered in turn. The impact on the archaeology is summarised and then related to its potential to address research questions outlined above. The section on each block is concluded by a summary of the proposed scope and scale of works

2.1. Replacement Sewer

Impact

Disturbance to archaeology will be restricted to enabling works, namely the excavation of two recovery (launch) pits, 8m x 4m, and three man holes (receiving pits), each 4.5m x 4.5m, to below the level of natural deposits. These are located on Figure 8A in Griffiths (2002).

Research Potential

Natural topography – palaeoenvironment

Good potential for detecting the course and character of the Foss from before the Roman period until the present day.

Good potential for studying the developing character of riverside ecology and pre –Roman environment.

Roman

Good potential for studying the character of the river frontage in the Roman period, especially in terms of artefactual and environmental evidence.

Anglian / Anglo-Scandinavian

Potential for studying the character of riverside usage and conditions, whether in terms of riverside structures, or evidence for activities such as manufacture, trade and mercantile infrastructure.

Medieval

Potential for studying the land/water interface and its fluctuations, and the corresponding land-use episodes.

Post-medieval/early modern

Potential for studying the character of the river bank

Scope and Scale of Works

It is proposed to hand excavate both recovery pits and the three man holes by hand after the removal of c.1.5m of modern material. The pits and man holes offer a good chance of examining a complete sequence of deposits from Roman to post-medieval in a part of the site where this will not otherwise be possible. In addition, the pits and man holes adjacent to the Foss offer the possibility of examining a long sequence of waterlogged deposits with good organic preservation.

2.2 Blocks A – C (c. 7500 sq m)

Impact

Formation level for the basement car park will be at c.8m OD, c.1.60m below modern level. Development will largely affect post-medieval – 20th century deposits. It is likely that there are 1-2m of deposits of late 18th – 19th century and 0.50m – 1m of deposits associated with the NEEB building. Seven lift shafts, of which six are in the basement footprint (located on Fig. 9 in Griffith, 2002), each 6 sq m in area, will be dug down a further 1.40m to 6.6m OD, penetrating deposits of earlier periods – two will probably reach Roman strata. The base of drains will penetrate to a depth of 7.5 – 7.7m OD. Piling will penetrate the entire archaeological sequence.

Research Potential

Natural topography – palaeoenvironment

There is limited potential to address research questions outlined above from examination of pile cores and lift shafts. Survival of palaeoenvironmental material should be best in southern part of the blocks.

Roman

Limited potential for studying the character of the river frontage and land use
from pile cores and lift shafts

Anglian – Anglo-Scandinavian

Limited deeper intrusions provide the only access to these deposits, and will act as keyhole samples.

Medieval

As above in terms of access.

Post-medieval/early modern

Good potential for studying post-medieval gardens and orchards which appear to be shown on the maps from 17th century onwards.

Good potential for studying life styles based on sampling of material for finds recovery and environmental data

Scope and Scale of Works

Monitor pre-pile probing for natural topography and palaeoenvironmental material.
Hand excavation of all lift shafts and drain runs below level of 8m.
Watching brief on removal of post-medieval/early modern material with a view to recording 19th-century housing remains, garden deposits, and to sampling for artefactual and environmental material.

2.3. Link Tunnel Blocks C and E

Impact
Modern level is at c.9.95m. Construction will affect deposits to a depth of 3.60m in an area of 50 sq m, the base of the tunnel being at 6.35m OD (natural is at c.5m OD). The greatest impact will be on medieval, and post-medieval and modern deposits. Piles will penetrate the entire archaeological sequence.

Research Potential

Natural topography – palaeoenvironment

Limited potential for study of natural topography from pile cores.

Roman

Limited potential for characterizing river frontage from pile cores.

Anglian / Anglo-Scandinavian

Good potential for palaeoenvironmental study, and as a keyhole control sample of the topography.

Medieval

Good potential for palaeoenvironmental study, and as a keyhole control sample of medieval dump/reclamation deposits.

Post-medieval/early modern

Limited potential as archaeology is expected to be riverside build-up

Scope and Scale of Works

Monitor pre-pile probing for natural topography and palaeoenvironmental material.
Mechanical removal of 1-2m of modern – post-medieval deposits followed by hand excavation of up to c.2m of medieval and Anglo-Scandinavian deposits.

2.4. Block D (2700 sq m)

Impact

Modern level is at 10.40m OD in west, 9.80m OD in east. Formation for the basement car park is at 8m OD, which involves removal of up to 2.40m of deposits. Basement car park plus building footprint mean archaeology in an area 2290 sq m. There will be four lift shafts, each 6 sq m, with their base at 7.6m OD. The principal impact will be on post-medieval and modern stratigraphy – YAT Trench 25 suggested good survival of the remains of post-medieval structures in the upper 0.70m of strata (below modern level of c.10m) in the northern part of the block. In the north-western part of the block, however, formation level may involve removal of some medieval, Anglo-Scandinavian/Anglian and Roman material. If the presence of a Roman cemetery is demonstrated by evaluation, then this will be removed archaeologically. Piling will penetrate the entire archaeological sequence.

Research Potential

Natural topography – palaeoenvironment

There is limited potential to address research questions outlined above from examination of pile cores. However, should extensive excavation be required there is very good potential for topographical study

Roman

The level of potential depends on the result of evaluation. If a Roman cemetery is uncovered and extensive excavation is required then there is good potential for addressing several research themes: cemetery studies, and land use and topography.

Anglian/Anglo-Scandinavian

In the limited areas of deeper intrusions, these horizons should be carefully sought, for they will probably not be exposed over much of the Block's footprint unless there is a need for extensive excavation to reach a widespread Roman cemetery. In the north-west corner, however, both the test excavations in search of the Roman cemetery and the overall ground reduction that is necessary in any case may provide an opportunity to examine larger areas. Such eventualities represent important research opportunities.

Medieval

The need to test for the presence of the possible Roman cemetery in this block, commencing in the most likely area at the north-west corner, will provide significant opportunities to examine medieval deposits along the east side of the 19th-century Dundas Street. This will contribute to characterisation of the medieval community's land use at Hungate at different chronological stages.

Post-medieval/early modern

Good potential for studying 19th-century housing - in this case of the class immediately above the poorest identified by Rowntree (1901) e.g. in Dundas Place.

Good potential for studying 19th-century life styles.

Scale and Scope of Works

Monitor pre-pile probing for natural topography and palaeoenvironmental material.

Three evaluation trenches 12m x 12m with sides battered such that they are 8m x 8m at base will, after removal of c. 1m of modern material, be hand-excavated (located on Fig. 1: ev.1-3). They will be located in the north-western, south-western and central part of Block D. The objective is primarily to determine the presence of Roman burials. The result of this work presents two options:

A. *If no burials are found*
In this case excavation will be focused on post-medieval / 19th-century housing (possibly with late-medieval antecedents) and any deposits of earlier periods surviving above formation level. After mechanical removal of modern material to a depth of c.0.30m, it is proposed that an area c.25m x 15m will be hand excavated to a depth of up to c. 2m below modern level (located on Fig. 1: A). This will allow examination of four adjacent 19th-century houses and their yards on Dundas Place and part of Dundas Place and Dundas Street themselves (Fig. 2).

This will be followed by a watching brief on unexcavated areas while remaining material is removed to 8m OD.

B. *If Roman burials are found*
In this case the excavation strategy will be revised to allow the western half of Block D to be fully excavated. This work will include examination of the sample of areas of post-medieval / 19th-century housing referred to above. Once this sample has been examined, remaining modern and 19th century material will be removed mechanically under archaeological supervision to the top of early post-medieval / late medieval deposits and hand excavation will then proceed to natural subsoil allowing for the recovery of all burials.

This Option B is quoted as a contingency in the project costings.

In the unlikely event that Roman burials appear to continue into the eastern part of Block D, a revision of the project objectives and costings may be necessary, if it is deemed essential to remove the burials.

The bases of any lift shafts dug below general formation level and not encompassed by the above works will be excavated.

2.5. Block E (c.3400 sq m)

Impact

Modern level at 9.60m and formation level for basement car park at 8m OD area, leading to removal of c. 1.60m of material over 1928 sq m. In addition four lift shafts, each 6 sq m, dug down to 7.6m OD – two may reach Roman strata. The major impact in this block is on post-medieval and modern deposits. YAT Trench 33 on the north side of the area revealed two phases of post-medieval structural material in the upper c.1m. Piling will penetrate the entire archaeological sequence.

Research Potential

Natural topography – palaeoenvironment

Limited potential to address research questions outlined above from examination of pile cores.

Roman

Limited potential to address research questions as deposits of this period are unlikely to be reached.

Anglian /Anglo-Scandinavian

Limited potential as deposits of this era are unlikely to be uncovered except perhaps in the lift shafts.

Medieval

Latest medieval deposits may be encountered in some of the lift shafts, but given their size and spacing this will provide only limited evidence for land use.

Post-medieval

Good potential for studying 19th century housing and life styles

Limited potential for determining the character of Foss Bank in the period.

Scale and Scope of Works

Monitor pre-pile probing for natural topography and palaeoenvironmental material.
Hand excavation of post-medieval / 19th-century housing focused on an area c.25m x 15m to a depth of c. 1m below ground level encompassing about six dwellings and outbuildings as shown on the 1852 OS map (Figs 1- 2). A watching brief will be maintained on the rest of the area while material removed to 8m OD with a view to recording the post-medieval / 19th century topography in outline and taking samples as appropriate. The bases of any lift shafts dug below general formation level and not encompassed by the above works will be excavated.

2.6. Block F and Car Park (1500 sq m)

Impact

Modern level at 9.60m OD in the east and 10.10m OD in the west. The level is to be reduced to 8.5m OD, involving removal of up to c.2m of material (c. 1500 cu m). Principal impact will be on 19th-century deposits and structures including the early 19th-century gas works and succeeding saw mill. Three lift shafts, each 6 sq m, will be dug down to 7.9m OD.

YAT (Trench 16) and FAS excavations showed that structural remains of post-medieval / 19th-century date survive in good condition from c.0.2 – 0.5m below modern ground level to a depth of up to c. 1.5m.

Piles will penetrate the entire archaeological sequence.

Research Potential

Natural topography – palaeoenvironment

Limited potential to address research questions outlined above from examination of pile cores.

Roman

Limited potential to address research questions outlined above from examination of pile cores.

Anglian and Anglo-Scandinavian

Limited potential to address research questions outlined above from examination of pile cores.

Medieval

Latest medieval deposits may be encountered at the base of some of the deeper intrusions; limited potential to inform issues of land use.

Post-medieval / 19th-century

Good potential for studying an early 19th-century gas works and saw mill and learning more of industrial processes and their social context.

Scope and Scale of Works

Monitor pre-pile probing for pre- 19th-century strata.

Removal of c.0.20 – 0.50m of overburden will be followed by extensive excavation of the gas works and saw mill - a project which will also be undertaken in work on the Focal Building (see below). In this block there will be two stages of work:

In Stage 1 it is proposed that an area c. 40 x 12m (Fig.1, 1) be excavated to a depth of up to 1.50m below modern level to further record the retort house – including the chimney and retort bench located in the FAS excavation – and other facilities.

Stage 2 will follow the demolition of the 'Barnitt's Store' in the area of the proposed car park (Fig.1, 2). It is hoped at present that this will take place at the end of the project. After removal of overburden it should be possible to record structures (warehouse, stables and smith's shop) on the western side of the site, facing Hungate and part of the street itself in its post-medieval form.

The bases of any lift shafts dug below general formation level and not encompassed by the above works will be excavated.

Contaminated Ground

Excavation is likely to encounter contaminated ground (FAS 2002, Fig. 29), and an appropriate remedial strategy must be chosen. This may form part of a professional training module during the project for the benefit of both archaeologists and environmental health workers.

The UK has adopted a risk-based approach to the assessment of land contamination.The approach is based on the source-pathway-receptor framework and the existence of a pollutant linkage. For a risk to exist all three elements of the framework must be present.

The risk assessment process is iterative and can be divided into four stages, namely

- hazard identification (what is it?)
- hazard assessment (how bad is it?),
- risk estimation (is there a problem?); and
- risk evaluation (what needs to be done about it).

In urban environments archaeological resources are susceptible to contamination either by the downward movement or leaching of contaminants from more recent overlying deposits or by contaminant plumes in underlying groundwater. Structures penetrating the ground, such as underground fuel storage tanks or pipework, may also directly introduce contamination into deeply buried deposits. In some circumstances archaeological resources may themselves be uncontaminated, either adjacent to, underlying or overlying contaminated materials, but may be threatened by remediation techniques that require the disturbance or bulk removal of the contaminated materials. In addition in some parts of the UK changes in groundwater levels in urban areas following the cessation of industrial groundwater abstraction in the 1960s has resulted in a rise in groundwater levels rising bringing contaminated groundwater into contact with previously unsaturated soils containing archaeological deposits.

The development of an effective remedial strategy for a site can be a complex process in terms of achieving required standards and cost efficiency and minimising the potential impact on the environment within the time frame allocated. Where archaeological resources are a consideration early consultation between the parties involved is essential to help mitigate the potential negative impact of the remedial measures. The criteria for determining the best practicable technique for remediation include effectiveness, reasonableness (costs and benefits), practicability and durability.

Much of the importance of an archaeological site lies in the form, composition and sequence of its 'soft' deposits. Remediation techniques that involve bulk disturbance to these deposits will therefore be extremely destructive to the archaeological value of the site. Remediation techniques that involve localised disturbance to the deposits will also be destructive, but there will often be scope for designing the interventions in order to minimise this destruction. Techniques that do not involve physical disturbance to the archaeological deposits will in general be less destructive, but may involve degradation of specific aspects of the archaeological record (such as waterlogged material, or specific classes of artefacts). Remediation techniques may also cause indirect damage to archaeological deposits due to changes in the physical or chemical environment (for example, vibration, degradation of waterlogged deposits due to lowering of the water table or oxygenation of the groundwater), and these effects may extend well beyond the target area of the treatment.

The contaminated areas of the Hungate redevelopment site offer an opportunity for a training programme that encourages a mutual understanding between archaeologists and those professionally involved in effecting decontamination.

*2.7. **Block G*** (2600 sq. m)

Impact

Modern level falls from 9.90m in north to 9.20m south. There is no basement car park planned and construction will primarily affect modern deposits (600 cu m to be removed) to accommodate slab ground beams and pile heads – east wing formation at 9.05m, north and western wings at 9.8m, and central courtyard 9.9m. Piles will penetrate the entire archaeological sequence.

Natural topography – palaeoenvironment

Limited potential to address research questions outlined above from examination of pile cores.

Roman

Limited potential to address research questions but piles may encounter material related to possible dock on western side of Block G.

Anglian /Anglo-Scandinavian

It is not expected to encounter strata of this date

Medieval

It is not expected to encounter strata of this date

Post-Medieval/early modern

Limited potential for studying housing and life styles

Scope and Scale of Works

Monitor pre-pile probing. Watching brief during removal of modern deposits which will record evidence for 19th century and post-medieval buildings.

*2.8. **Block H*** (3350 sq m)

Impact

Modern level falls from 11.30m OD north to 9.30m OD south and rises from 9.90m (9.70m at YAT Trench 11) in the west to up to 10.40m (10m at YAT Trench 8) in the east. Natural level rises from c.7m OD in the west to c. 9m OD in the east (YAT Trenches 8 and G). Formation level for the basement car park will be at 6m OD. As a result it is envisaged that construction will demand total removal of archaeological deposits.

Research Potential

Natural topography – palaeoenvironment

Good potential for studying topography by exposure of large area of natural subsoil. Preservation of palaeoenvironmental uncertain.

Roman

Very good potential for topics relating to cemetery studies (see above), especially if a large number of graves is discovered, allowing study of a range of themes including cemetery organisation, burial customs and human biology. Scope for comparison with Trentholme Drive and other large Roman cemeteries in Britain.

Very good potential for Roman land use and topographical studies.

Anglian/Anglo-Scandinavian

Good potential to investigate a wide variety of topics based on the stratigraphical and structural sequence, finds assemblages and environmental material. These include the origins and process of post-Roman urbanisation, the limits of the Anglo-Scandinavian town and the character of land use in a peripheral zone which can be compared with others investigated archaeologically.

Medieval

Good potential to trace the evolution throughout the medieval period of sample topographic elements, in terms of structures and land use, economic activity, etc. This area is that most likely to act as an archaeological barometer for the entire Hungate site, providing the clearest and most detailed picture of the medieval community.

Post-medieval/early modern

Good potential for examining 17th–19th-century housing on Hungate and Haver Lane, development of streets: Haver Lane and St John's Place, and life styles through structures and artefactual assemblages.

Scope and Scale of Works

The excavation of this block has been conceived in two stages and will be undertaken throughout the life of the project:

First Stage

Excavation of a c.43m x 20m area at south-eastern end of the block (Fig.1, H1), firstly to determine the existence or otherwise of a medieval cemetery, and secondly to excavate fully any burials in the Roman cemetery. If medieval burials are found then excavation will cease at that level and the footprint of the block will be revised. In areas free of medieval burials excavation will continue to remove Roman burials and all other deposits above natural subsoil.

Second Stage

In the remainder of the trench (c.55 x 45m), after removal of modern material up to a depth of c.0.40m full hand excavation of all archaeological remains above natural subsoil is proposed.

This will begin with excavation of the early 19th century townscape as depicted on the 1852 and later OS maps, although evaluation suggests that survival of 19th century strata will be better on the western side of the block than on the east. For example, YAT Trench 12, immediately south of Block H, recorded two phases of post-medieval building in the upper 0.80m. In terms of the Anglo-Scandinavian medieval and post-medieval periods the excavation will allow full examination of properties on Haver Lane (as well as the lane itself) and Hungate both streets of possible Anglo-Scandinavian origin. The Roman archaeology may be dominated by a cemetery and there will be full examination of any burials, related features and deposits.

2.9. Focal Building

Impact.
Overburden to be removed to 8.5m OD, approx. level at which the retort house and other gasworks buildings survive. 1505 cu m of ground to be removed. Impact on earlier deposits will be minimal. Two lift shafts each 6 sq m dug down to 7.9m OD. Piling will penetrate the entire sequence.

Research Potential

Natural topography – palaeoenvironment

Limited research potential from examination of pile probes.

Roman

Limited research potential from examination of pile probes.

Anglian / Anglo-Scandinavian

Limited research potential as deposits of this era will not be encountered in the main excavation.

Medieval

Limited research potential as deposits of this period will not be encountered in the main excavation.

Post-medieval / 19th century

Good potential for examining industrial facilities - an early 19th-century gas works and later saw mill - and housing on the west side of Dundas Street.

Scope and Scale of Works

Mechanical removal of c. 0.30m of overburden will be followed by hand excavation of an area c. 40 x 15m in the gas works and saw mill (Fig. 1). This project will also be undertaken in Block F (see above). In the trench excavated in the area of the Focal Building it is expected to examine structures on the east side of the gas works and the boundary with properties on Lower Dundas Street. See above under Block F for remarks on problems of contaminated ground.

The bases of any lift shafts dug below general formation level and not encompassed by the above works will be excavated.

2.10. Pre-Pile Probes

The cores recovered from the 10cm diameter pre-pile probes could make a useful contribution to ongoing projects that seek to understand the range of lithologies and the decay trajectory of urban made ground. The cores also provide material for a conventional assessment to validate detailed palaeoenvironmental studies. Providing the material can be accessed fairly quickly, they could also indicate types of alluvial deposit. In summary, the cores represent a good opportunity to acquire pilot data to support bids for external funding to allow detailed research.

3. Archaeological Recording Techniques

3.1 Site Recording

A recommended archaeological recording methodology has been developed by Griffiths (2002, 95-8), and no purpose is served by its repetition here, except to note that this corresponds closely with what will be prescribed by the revised version of the YAT Recording Guide currently in development. It should be stressed, however, that all written, drawn and photographic data from recording of stratigraphic and structural material will be entered onto YAT's digital archive (IADB) during the excavation. This is not therefore regarded as a post-excavation task for the purposes of the project costings.

All finds processing, conservation work and storage of finds from this site will be undertaken according to established YAT practice as approved by the Yorkshire Museum and in accordance with standards set by the United Kingdom Institute of Conservators.

3.2 Sampling for environmental and biological material

It is envisaged that there will be a major programme of deposit sampling geared in the first instance to addressing many of the research objectives listed above. The sampling strategy will be formulated to address the questions that were not addressed when previous substantial campaigns of sampling were undertaken in the 1970s and 1980s; this will involve innovation in the methodology of sampling.

The programme will be undertaken in full consultation with the English Heritage regional science advisor. He has offered the following preliminary comments:

If trenches (e.g. relating to sewer diversion) are dug close to the Foss then column sampling of the deposits should be considered, especially if alluvial sequences are exposed. I would consider taking at least one column sample and a series of bulk samples - the column samples for the pollen analysis, and the bulks for invertebrates etc. If alluvial sequences are exposed elsewhere on the site or peat deposits encountered then sample as above. C14 dating would be necessary for temporal relationships, but perhaps date base of the sequence for the initial assessment.

General sampling requirements - the options are either implementing a blanket sampling strategy or a targeted one. I suggest that you ought to consider both; in some circumstances you will need to blanket sample, other times you will be able to target selected deposits. Samples will be both 'bulk' (between 40 and 60 litres) as well as 'specialist' samples (of between 10 and 20 litres), usually collected by the specialist from waterlogged deposits

Basically the sampling strategy needs to be as flexible as possible, but I appreciate that this is extremely difficult to cost. What we do know is that a large number of samples will be recovered so I would strongly recommend processing during the course of the excavations, either on or off site. This is probably an area where community volunteers could get involved, although supervision from suitably qualified/competent staff would be required. Specialist samples, as their name suggests, would be processed by the specialist. If you encounter any form of hearth or furnace then you ought to consider an intensive sampling strategy for recovery of hammer scale etc. The results from a gridded sampling strategy might provide clues as to where the anvil was situated, or the area where hot working occurred.

4. Assessment and Publication

On completion of the excavation of each block, an assessment of all excavated materials with a view to establishing their research potential will be made according to the standards laid down in *Management of Archaeological Projects* 2 (MAP2) published by English Heritage (1991).

Following assessment an analysis phase will be undertaken prior to dissemination. It is anticipated that in order to disseminate the results of the project widely the principal vehicle will be a web-based publication developing the approach already employed by YAT in publication of 41-9 Walmgate (www.yorkarchaeology.co.uk/walmgate/index.htm). In addition it is anticipated that there will be a number of popular publications in printed and web form giving summary accounts of the discoveries.

5. Public Access and Participation

5.1 Introduction

It is clear that the Hungate project presents a number of opportunities for involving the local community and wider general public in archaeological work. These have already been summarised by Griffiths (2002, 105, fig.29) who identifies Blocks D, E and H as particularly suitable for public access and participation.

YAT welcomes this unparalleled opportunity to build on what it has already achieved in presenting archaeology to the public while at the same time serving the public/community involvement agenda of the Hungate excavations.

YAT's achievements in this sphere include:

- valuable experience in allowing, encouraging and running public access to excavations, as shown most recently at St Leonard's Hospital, York
- experience at running training excavations including, most recently, St Leonard's (York) and Kilham (East Yorkshire), in association with The University of Leeds
- development of the facilities (space, work areas, resources, lecture area) at the Archaeological Resource Centre for year-round community involvement
- the experience of successfully running both non-vocational adult education courses and accredited courses leading to part-time degrees at regional Universities
- an established Saturday morning children's club, and experience with hosting and running children's activities.
- established public audiences at the Archaeological Resource Centre, JORVIK and Barley Hall to whom publicity about Hungate opportunities could be directed
- an established network of local supporters in the form of the Friends of York Archaeological Trust
- an established popular magazine *Yorkshire Archaeology Today* which is produced twice a year
- Outreach artefact handling collections which are used at local schools, youth groups, Scout groups and special needs schools
- in-house staff experienced in education, exhibition, publication, design, publicity, running and marketing of events, as well as the full range of archaeological expertise

- a network of professional and local contacts including established advisory panels dealing with Access, Education, Collections Management and Historical Research, comprised of local and national external professionals.
- a track record of working with other organisations in the City of York to fulfil and expand common objectives

This experience leads us to suggest a series of community and participatory initiatives at Hungate. Elements within this overall package can be delivered at no cost to the project. Others require further discussion in order to explore a range of funding mechanisms.

5.2 Access for the General Public

Subject to instruction from and agreement with the client YAT will seek to put in place a programme to allow access and participation for the general public along the lines identified below.

5.2.1 Viewing windows, platforms and walkways. The most basic option for access is to have windows in perimeter fencing to allow the public to get some impression of the work in progress. Platforms and walkways will allow closer viewing of the work including excavation, finds processing and conservation. Information (including formats following RNIB recommendations) will be positioned on a walkway 'trail' that will provide *inter alia* a 'timeline' indicating which periods are visible on site. Information will be updated regularly. The 'trail' will take account of Health and Safety constraints and the DDA, allowing wheel-chair access where possible.

5.2.2 Weekly Update Briefings on progress will be given by site staff (on site if a suitable weather-proof venue can be made available.) This will be advertised on site, in the press, libraries and through YAT outlets (JORVIK, ARC, Barley Hall, FoYAT) and at YAT activities.

5.2.3 Evening and/or Week-end Finds Viewing and Discussion on a monthly basis or as appropriate will be held at the ARC - encouraging non-professional archaeologists to give presentations or learn about finds.

5.2.4 On-site *First Aid for Finds* Conservation Laboratory manned on a rota basis or at set times will allow the public to see work in progress either in upstanding buildings or based around portable accommodation units. There would be facilities to deal (at least temporarily) with large timbers (temporary wet storage tanks) and with initial conservation procedures.

5.2.5 Web Site
There will be a dedicated area on the YAT web site, similar to that for the St Leonard's Hospital training site over the last two years. This would update web users on the progress of the excavation, give notice of training programmes and other events etc.

5. 3 Active Participation

5.3.1 Opportunities on-site during the working day for:

- supervised finds and pottery cleaning by volunteers, trainees or placements
- supervised wet sieving and sample processing (under all-weather cover or continuing use for a standing building or portable accommodation units)

5.3.2 Opportunities at the ARC in the evenings for:

- supervised finds and pottery sorting
- environmental bone and sample sorting
- digital photography of finds
- inputting of finds data into a live web-accessible IADB
- community website development
- finds viewing

These activities will be organised on different evenings through the week or at week-ends, supported by different staff with different skills. Some activities will be upstairs, but others will be downstairs, encouraging disabled access. During school holidays these activities can be scheduled during the working day.

5.3.3 Training Courses:

We will offer different training modules tailored both to the general public and University placements. These will follow the successful modules run over three seasons at the St. Leonard's hospital site which include:

a. excavation – principally on Blocks D, E and H
b. artefacts and ecofacts
c. building recording

and extended to include
d. heritage management and presentation

5.4 Remote Participation

5.4.1 Hungate Community Web Site

This will be developed to host school projects, web diary, access to live IADB site records (while safeguarding the data), forthcoming events and activities relating to the site. YAT can give support and an editorial overview, but the design and content will be developed by participating groups.

5.4.2 IADB Records

A telephone link to the site computers will facilitate supervised updating of IADB records by the public. This will include taking and adding images to record. These records, and all IADB records for the site, could be made immediately 'live' and accessible over the web, so that all could see the site emerging day by day.

5.5 Satellite Projects

The potential here is huge, but requires further planning and consultation with interested parties. Some projects would be designed in-house and offered to appropriate age/skills groups. Extensive consultation at primary and secondary schools, colleges and universities would stimulate the development of other projects based on many opportunities offered by the site.

The Trust's existing Saturday morning club *Jorvik Explorers* (for 6-11 year olds, based at the ARC) could develop into the *Hungate Explorers* with projects and activities based on the site's history and archaeology. Additional joint activities could be developed with the CBA's *Young Archaeologists Club* in consultation with their Education Officer and the York Museum Trust's Director of Education.

Projects would be formulated to draw on the Oral History project, archives held at Borthwick Institute, The City Library and the City Archives, existing photographic data bases, as well as work on the York cemetery burial registers and census records. A few examples of such projects are given below. As appropriate their outputs and/or resource material developed from them would be held on the Hungate Archaeology Website:

- design students to produce web-exhibitions and portable exhibitions based on the site for display in libraries, health centres, schools etc.

- the finds from refuse deposits of all periods to be used to explore modern issues of re-cycling, pollution, water quality etc for schools projects. This builds on the current school's resource **'Science is Rubbish'** which is based at the ARC and used for Outreach to Community Groups, Scout Groups etc. COPUS grants might be available to develop science related initiatives

- environmental evidence from site to be used for projects, in conjunction with current and extended reference material at the ARC, to explore diet and health as well as the concepts of malnutrition and poverty in Victorian and 20th-century Hungate.

- the excavated ground plan of part of a terrace of slum housing to be used for schools' projects measuring and mapping the building plots (basic Key Stage 2-3 skills) and exploring ideas such as urban over-crowding, room layout, facilities, childhood etc. Resource boxes would be developed from current collection (including Hungate material as it emerges) to include artefacts/ecofacts to illustrate life-style ('teapots to whiskey jars'), poverty, diet, health etc. This would be linked with educational initiatives at the Castle Museum
- building recording projects to be developed to look at the buildings of the late medieval periods using archaeological footprints uncovered at Hungate and examining published literature and standing buildings in York. These would be used to explore what the streetscape of Hungate looked like in the late medieval period and stimulate art projects.

- evidence from buildings, together with extant photographs, to be used to re-create a time-lapse computer streetscape of Hungate from Roman to present day (as at new Wallsend *Segontium* display) One or two angles - i.e. the river front and a major street frontage or two. This could be a permanent display in one of the new buildings.

5.6 Partnerships

In order to develop and deliver these projects and meet common agendas we will aim to form specific partnerships with interested parties. These include the Hungate Community Group (Community of Hungate Archaeology Project – see below), the City of York Council's Education Department, the York Museums Trust, the Archaeology, English Heritage and Social Studies departments at universities (especially the University of York).

In addition we will seek to establish collaborative ventures with universities and archaeological research institutions in the USA where the archaeology of 19th century housing and townscapes has a high profile and is a major research area. Comparison of British and American data sets has great potential for enhancing the value of both.

We would also work with other local institutions including Future Prospects, CRY (see below), Joseph Rowntree Trust (see below) York College and link with other city-wide initiatives such as York Learning Festival and Science Week.

5.7. Hungate Community Archaeology Project

HCAP have consulted widely. 25 schools have expressed an interest in being involved. Involvement included everything from site visits, guided tours and 'hands-on' experience. Much the same interest came from their canvassing of amateur and professional bodies; there was a professional desire for continuing career development opportunities. HCAP expressed a desire to use the opportunity provided by the 'scale of the development, its phased nature, current use of the site and complexity of the archaeological deposits'... to host training digs for.... 'all parties from school children through university students and researchers, from total amateurs to in-career professionals'.... and that this should be extended to include.... 'background research needed to mount such an operation, analysis of the material evidence as it is recovered and dissemination of the information to both local people and the wider community'.

HCAP, as an independent community group, is in the position to apply for LHI grants which might fund some of the activities which are suggested above. These grants are for up to £25K.

5.8 CRY - Community Regeneration York (www.cryork.org.uk)

CRY is partly funded through Joseph Rowntree Trust and the European Social Fund - Learning and Skills Council. Partnership with them could show how aspects of their social enterprise objectives and agenda can be met through community involvement at Hungate. They already have an interest in Hungate and a partnership with them may also help unlock funding sources to achieve some of these projects.

5.9 Joseph Rowntree Trust

YAT has established a good relationship with JRT based on a community metal detecting project at Osbaldwick, York. In view of its interest in social affairs and the landmark study by Seebohm Rowntree, *Poverty: A Study in Town Life*, based on York, there is an opportunity to develop a community/school project based on Hungate in the 19th – 20th century.

5.10 Other Funding Options

YAT's position as a Registered Museum Authority means that it can draw on funding from Resource through YMLAC, whose current agenda is to fund cross-domain projects which link museums, archives and galleries. There is potentially great scope within the Hungate project to develop suitable mini-projects.

As a member of AIM (Association of Independent Museums) we have had success in tapping into other sources of funding (eg Carnegie (UK) Trust) who could be approached again.

6. Costs and Timing

The project has been costed on the basis of information currently (December 2003) available on the date at which and time for which each block and area will be available for archaeological work. In total it is anticipated that the Hungate project will last five years. Time anticipated for each stage of the project is shown in the table below.

Block or Area	Duration (Weeks)
Sewer	18-20
Link tunnel	7
Block D evaluation	15
Block D - 25x15	20
Block D - Roman ex	23
Block E	10
Block F	15
Block F Car park	20
Focal Building	16
Block H Stage 1	75
Block H Stage 2	118
Pre-pile probings	15
Watching Brief	21
Lift shaft excavation	32
Site Services	260

Costs are given for each block or area and for the additional tasks of pre-pile probing, watching briefs, lift shaft excavations and site services. The latter includes a project/data manager to oversee all archaeological excavation, training, public access and participation and the handling of digital recording data from the excavation. Additional staff covered by this item include Finds Assistants, Finds Supervisors, environmental sample processors and Conservation staff. Also included under this item are the running costs for the Barnitt's building, which we hope will be available to us throughout most of the project, for use as a headquarters for the site operations.

The total cost for the archaeological programme is a fixed price at 2003/4 prices, but some revision to take account of increases in the RPI should be the subject of further negotiation.

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Fig. 1: Hungate Archaeological Project showing development blocks and areas of excavation as described in text

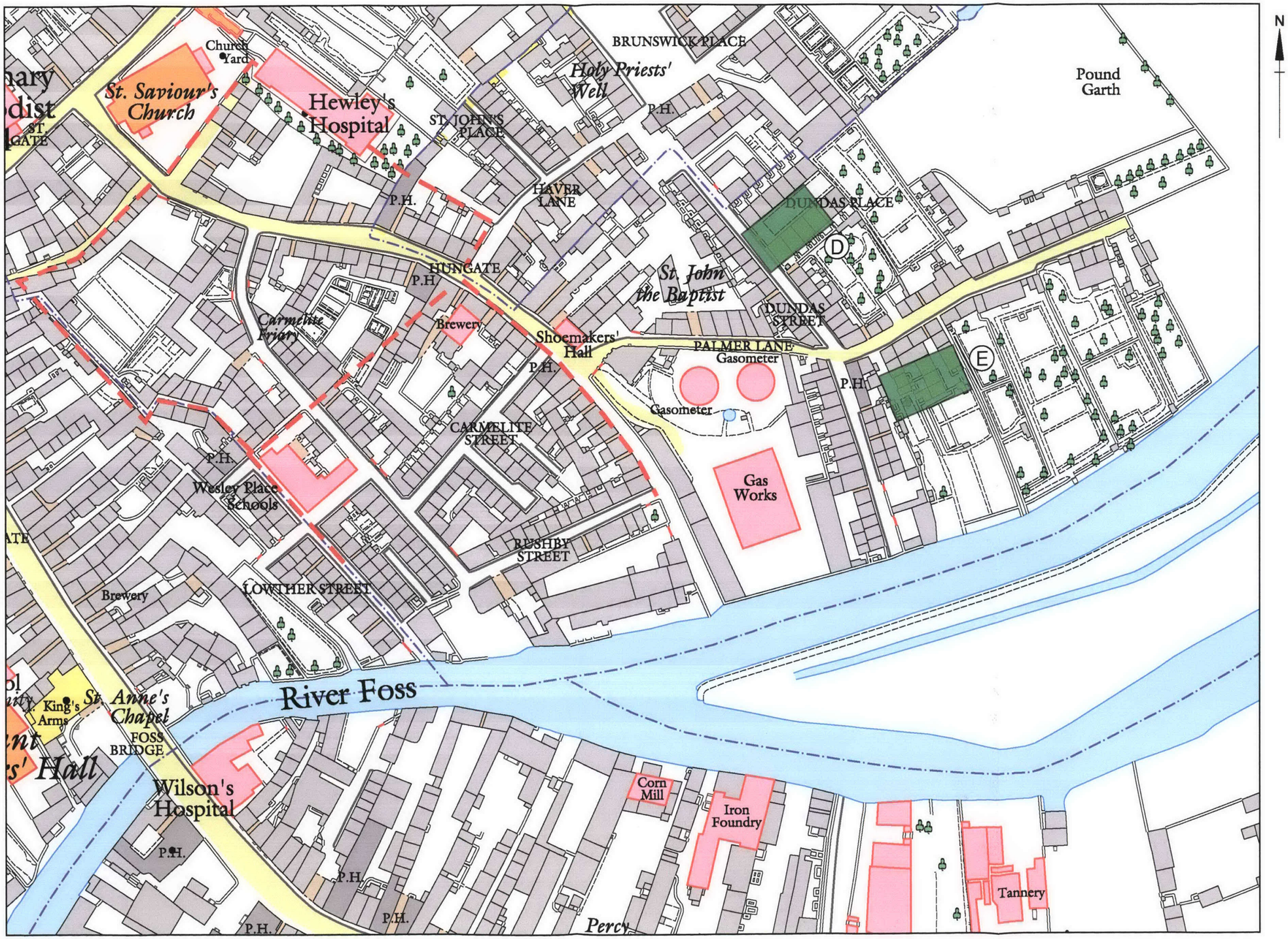

Fig. 2: Hungate Archaeological Project: Areas of 19th century housing proposed for archaeological investigation shown in green, overlaid on 1852 Ordnance Survey map. Scale 1:1250