

# HUNGATE YORK

**A RESEARCH DESIGN AND  
SCHEME OF ARCHAEOLOGICAL  
INVESTIGATION**

by

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3<sup>rd</sup> Revised Version, August 2004 including  
additional illustrations and  
minor amendments  
August 2005

*cover illustration:  
Garden Place, Hungate, c.1900*

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## Preliminary Statement

The Hungate Archaeological Project offers an unrivalled opportunity to examine a large area (4.72ha / 11.7 acres) of central York (Fig. 1) and trace the history of the communities which have lived and died in the area over the last two thousand years.

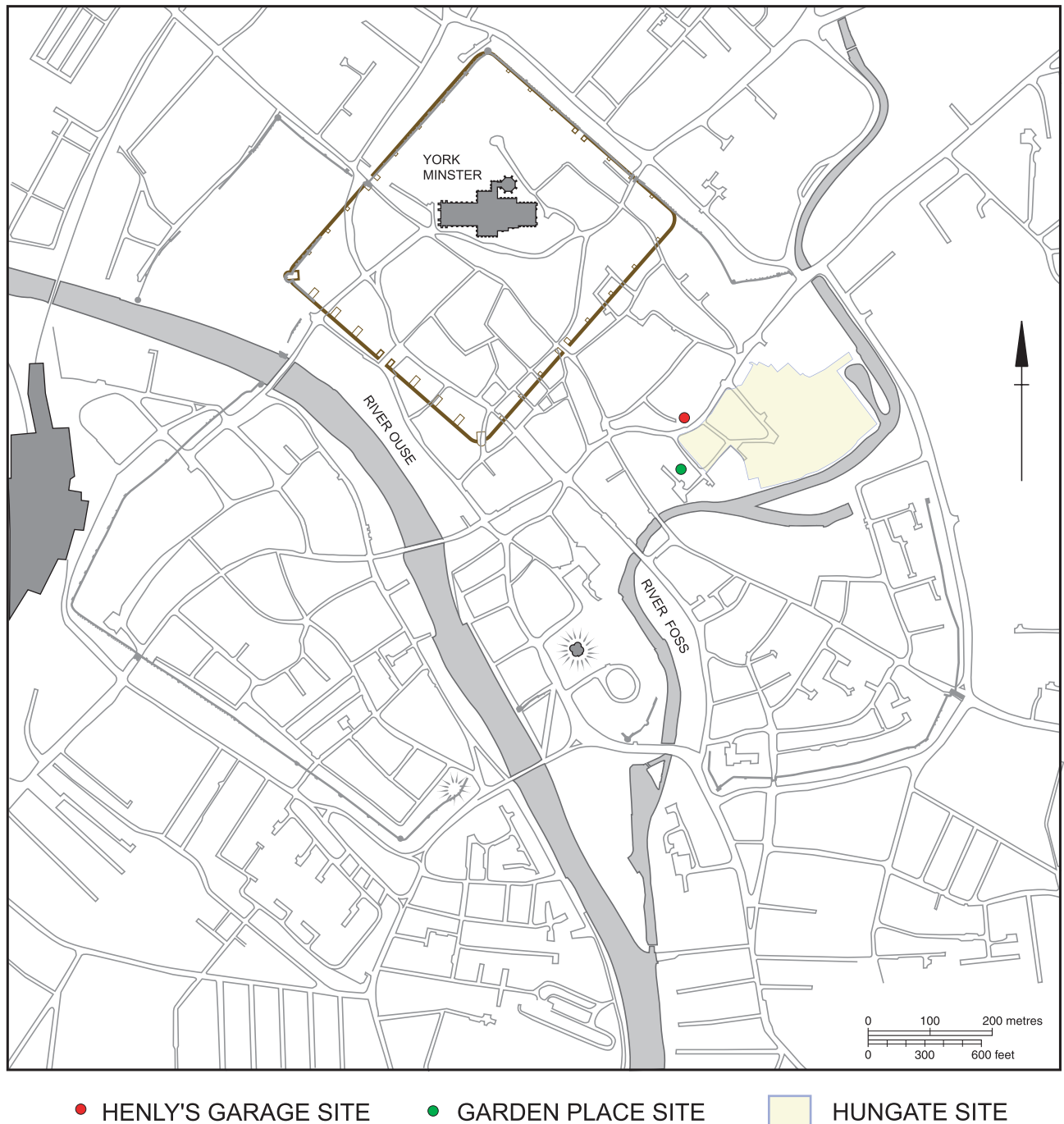


Figure 1 Hungate site location map, also showing site of excavations at Garden Place (1950-1) and Henly's Garage (2004)

This document is a third revision 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 the Trust by Mike Griffiths (consultant to the developers) and John Oxley (Principal Archaeologist, City of York Council). They clarified the approach expected in terms of, firstly, which archaeological deposits should be preserved *in situ* on the site (and are not, therefore, a target for research), and, secondly, which deposits are to be removed in advance of re-development. Guidance has also been provided as to the perceived importance of the site, the unusual opportunities that it presents, 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 Griffiths and John Oxley. This led to a first revision in December 2003; additional comments and information made subsequently have been incorporated into a second and this third revision which is also intended to answer requests for an enhancement and reorganisation of the information provided by YAT in the original document and first revision. In August 2005 the document was enhanced with the addition of some additional illustrations and minor amendments including a reference to the excavation in 2004 at the former Henly's Garage, Stonebow (Fig. 1; Finlayson 2005).

The authors have used the information, comments and guidance from Mike Griffiths and John Oxley to formulate a programme of archaeological investigation, which, it is believed, not only satisfies the basic archaeological requirements for mitigation, but will also exploit 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: SITE WIDE**

### **1.1 Introduction**

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

- Reports on evaluation excavations and boreholes at the site in 2000-2 (Fig. 2; Pl. 1)
- 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.

Note: YAT Evaluation Trench 24 lay in the premises of the former Henly's Garage which was excavated in 2004 (Finlayson 2005).

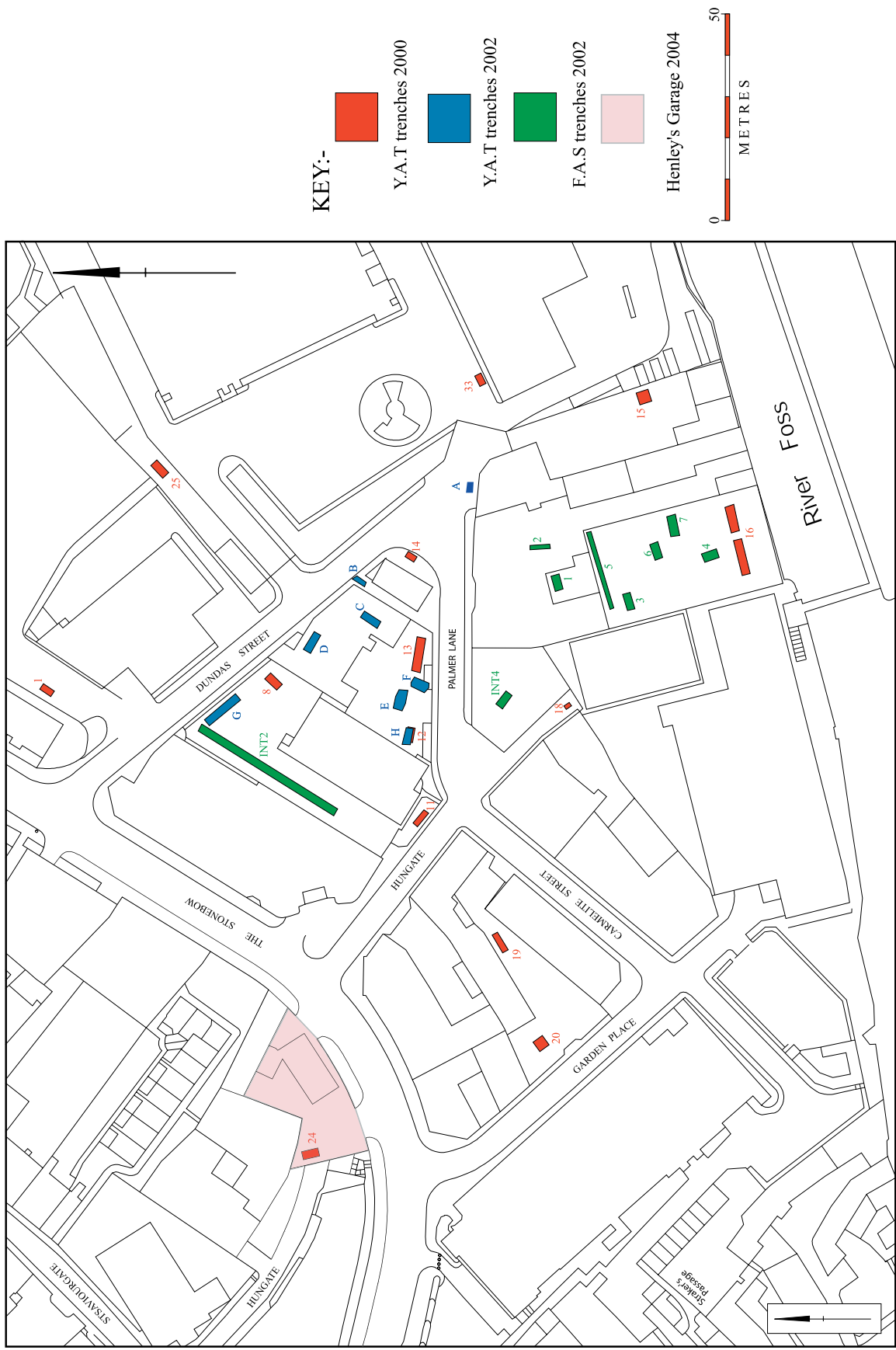


Figure 2 Plan of Hungate site showing location of archaeological evaluation trenches (2000-4)

Consideration of these research objectives begins with the natural topography and environment of the site as it was before the intensive human occupation which, as far as is yet known, began in the Roman period. Subsequently research themes are introduced in a chronological sequence beginning with the Roman period.



*Plate 1 View of former Derwent Coachwork premises, south of Palmer Lane looking north from the Foss, site of YAT Evaluation Trench 16 (excavated 2000) and FAS Evaluation Trenches 1, 3-7 (excavated 2000)*

## **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 (see Griffiths 2002, fig.18), 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



*Plate 2 YAT Evaluation Trench 20  
(excavated 2002)*

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 18<sup>th</sup> 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 (Pl. 2).

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; the data from Hungate will make an important contribution to the predictive modelling database initially created by Ove Arup and Partners and York University in the *York Development and Archaeology Study* (1991).
- The character of early river regime and location of palaeochannels.
- The character of natural ecology and environment in pre-Roman period.

### 1.3 Roman Period (c.71 – 410)

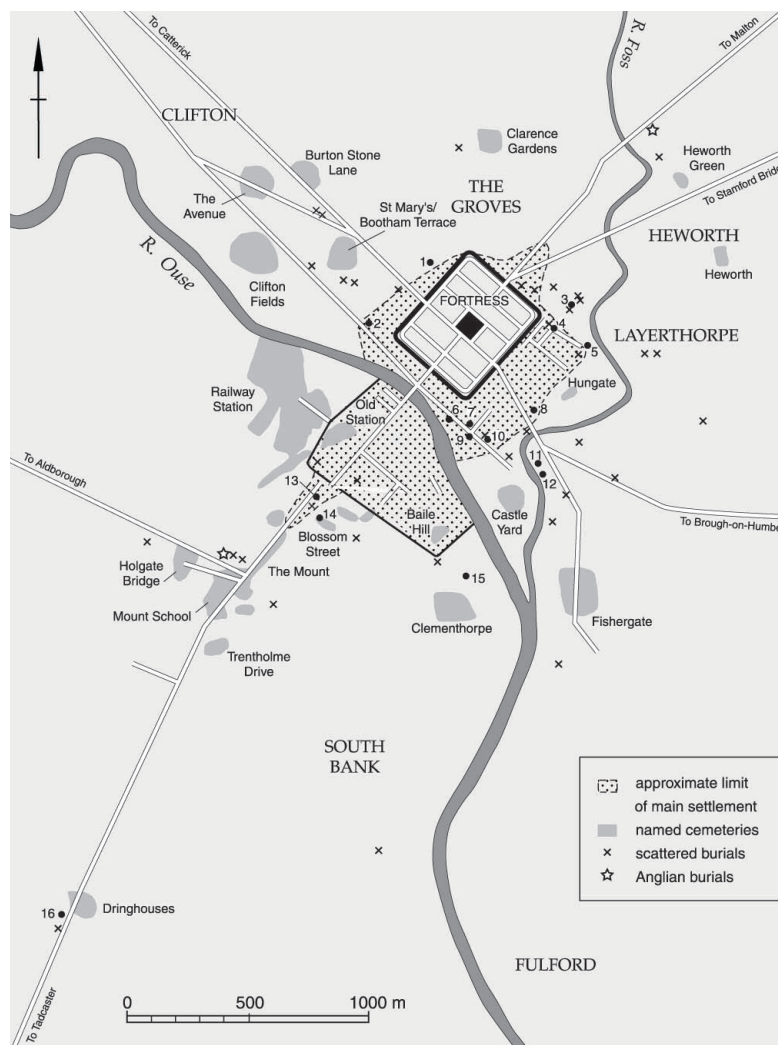


Figure 3 Roman York showing location of Hungate and other sites referred to (from P.Ottaway, *Roman York*, 2004)

## 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 (see Fig. 3 for location of Hungate and other sites referred to below). 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). Evidence was found in the evaluation for a cemetery containing both cremations and inhumations (YAT Trench G, Pl. 3; FAS Intervention 4).



*Plate 3 Glass vessel found with Roman burial in  
YAT Evaluation Trench G (excavated 2002)*

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; Fig. 4). 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.

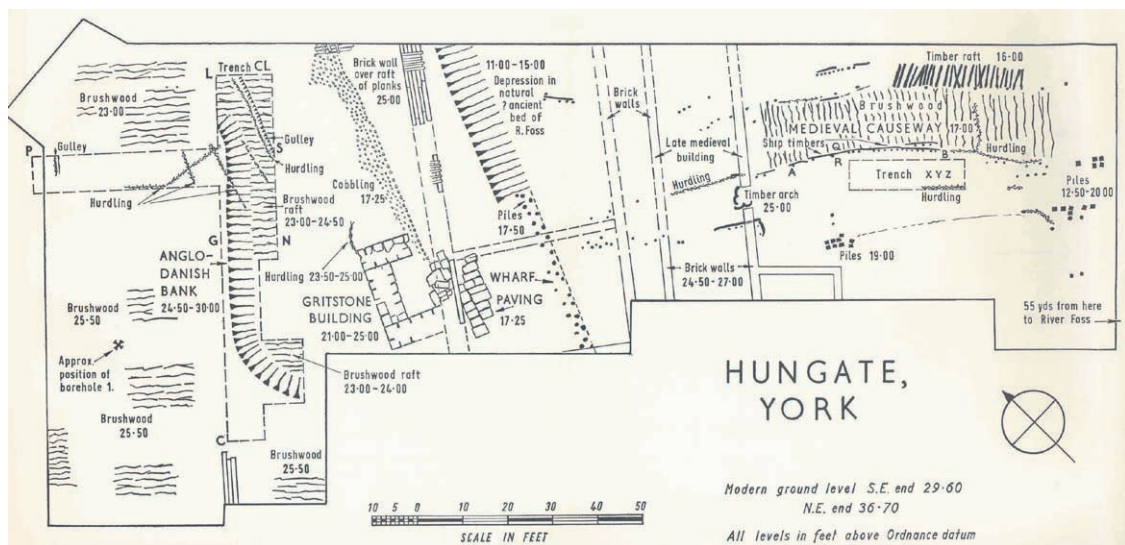


Figure 4 Composite plan of Roman and later features at Garden Place (from Richardson 1959)

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 addition 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 1<sup>st</sup> – early 2<sup>nd</sup> 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 1<sup>st</sup> / early 2<sup>nd</sup> century; late 130s – 140s and finally in the early 3<sup>rd</sup> 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 2<sup>nd</sup> 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 1<sup>st</sup> – 2<sup>nd</sup> century ceramics appear to derive from refuse disposal, and the earliest land division and structures of timber and stone are probably mid 3<sup>rd</sup> century. At the Garden Place site (already noted above) there was some early pottery, but the majority appears to date to the 3<sup>rd</sup> – mid 4<sup>th</sup> 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 2<sup>nd</sup> 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 3<sup>rd</sup> 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 2<sup>nd</sup> century. What

this activity involved, aside from any waterside commercial facilities, is not clear. Structural evidence appears to be confined to a substantial stone-capped drain of uncertain alignment – presumably but not certainly Roman - found in YAT Trench 13 (Pl. 4). 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.



*Plate 4 YAT Evaluation Trench 13 (excavated 2002) looking south with ?Roman stone-capped drain centre*

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 19<sup>th</sup> - early 20<sup>th</sup> 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 1<sup>st</sup> – mid 2<sup>nd</sup> 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 2<sup>nd</sup> – mid 3<sup>rd</sup> 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 3<sup>rd</sup> 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 2<sup>nd</sup> - early 3<sup>rd</sup> 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 (c. 410-1069)**

This era of York's history includes four distinct epochs:

- The Sub-Roman period (c.410-500). This is the century or so after Britain ceased to be part of the Roman empire, a time about which little is known in York when native Romanised Britons had to adapt to new political circumstances without a central authority.
- 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.
- 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.
- The Late Saxon or Anglo-Scandinavian period (866-1069). Two hundred years in which, firstly, a series of Viking kings controlled York and secondly, 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 5<sup>th</sup>-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 7<sup>th</sup> – 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 7<sup>th</sup>-9<sup>th</sup> 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 Anglo-Danish bank (Fig. 4). 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 11<sup>th</sup>/12<sup>th</sup> 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.



*Plate 5 The Henly's Garage site on the north side of Stonebow (excavated by YAT 2004) looking south-west with the line of Hungate showing between the remains of medieval buildings*

One model for Jorvik's growth suggests that the St Saviourgate – Hungate area may have been developed in the later 10<sup>th</sup>-earlier 11<sup>th</sup> century. The evaluations have also hinted at Anglo-Scandinavian activity and occupation, presumably along contemporary street frontages, principally that of Hungate. Further indications of this were found in excavations at the former Henly's Garage in 2004 (Pl. 5) 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 5<sup>th</sup>- early 7<sup>th</sup> 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 (7<sup>th</sup> - early 9<sup>th</sup> 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 9<sup>th</sup> - 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.
- Establishing whether defences, either of the town as a whole or of individual property holdings, were 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

- Establishing how the creation of the King's Pool affected the pre-existing pattern of occupation.
- Determination of what stages, what methods, and for what purposes, the King's Pool was reclaimed.
- Determination of how patterns of medieval land use evolved alongside variations in the water regime.
- Determination of when and by what mechanisms major topographical features such as streets and properties were formed.
- Examination of how the patterns of building and land use at Hungate compare to those known from other long medieval sequences excavated in York, including that from 16-22 Coppergate (Hall and Hunter Mann 2002).
- 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 what is known about the Hungate area in the post-medieval and modern periods has been presented in the *Environmental Impact Statement* (Griffiths 2002, 46-61) and what follows has used that as the starting point for a more summary account.

From the late 16<sup>th</sup> – 17<sup>th</sup> 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 19<sup>th</sup> century. On the first map to show the whole city of York, published 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 (Fig. 5). 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 17<sup>th</sup> – 18<sup>th</sup> 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 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

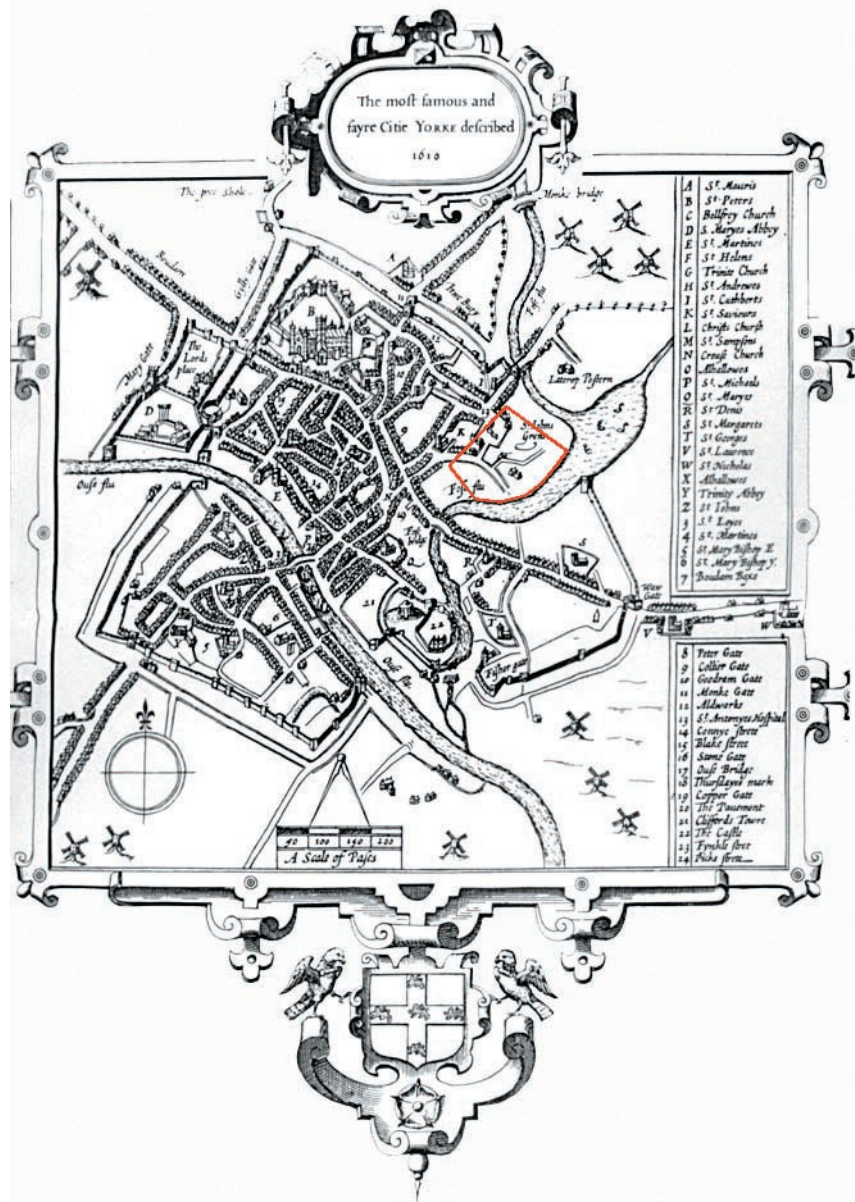


Figure 5 Map of York by John Speed c.1610 with location of Hungate site shown

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.

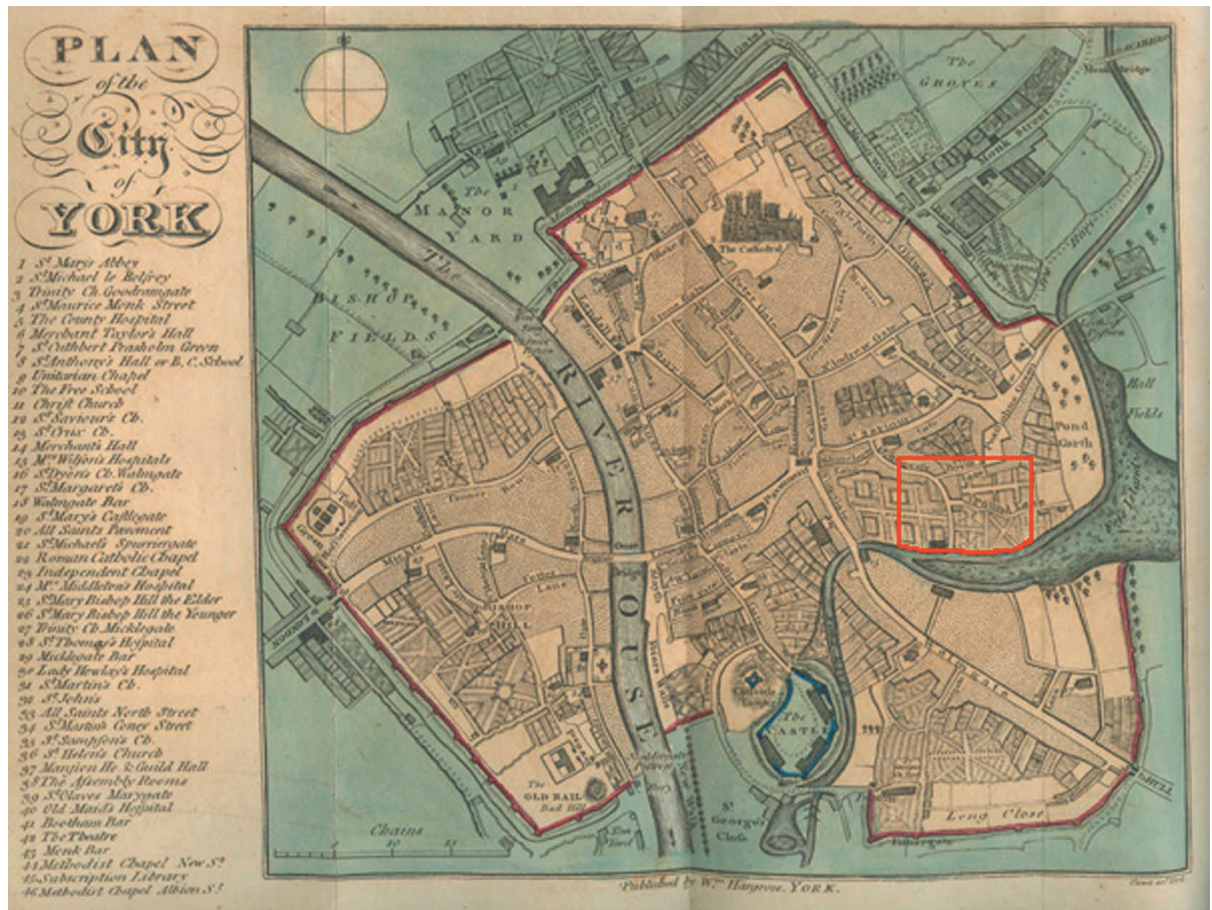


Figure 6 Map of York by Francis White 1785 with location of Hungate site shown

The late 17<sup>th</sup> – 18<sup>th</sup> 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 (Fig. 6). The River Foss is still shown wider than it would become by the early 19<sup>th</sup> 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 19<sup>th</sup> 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 (Fig. 7). 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.

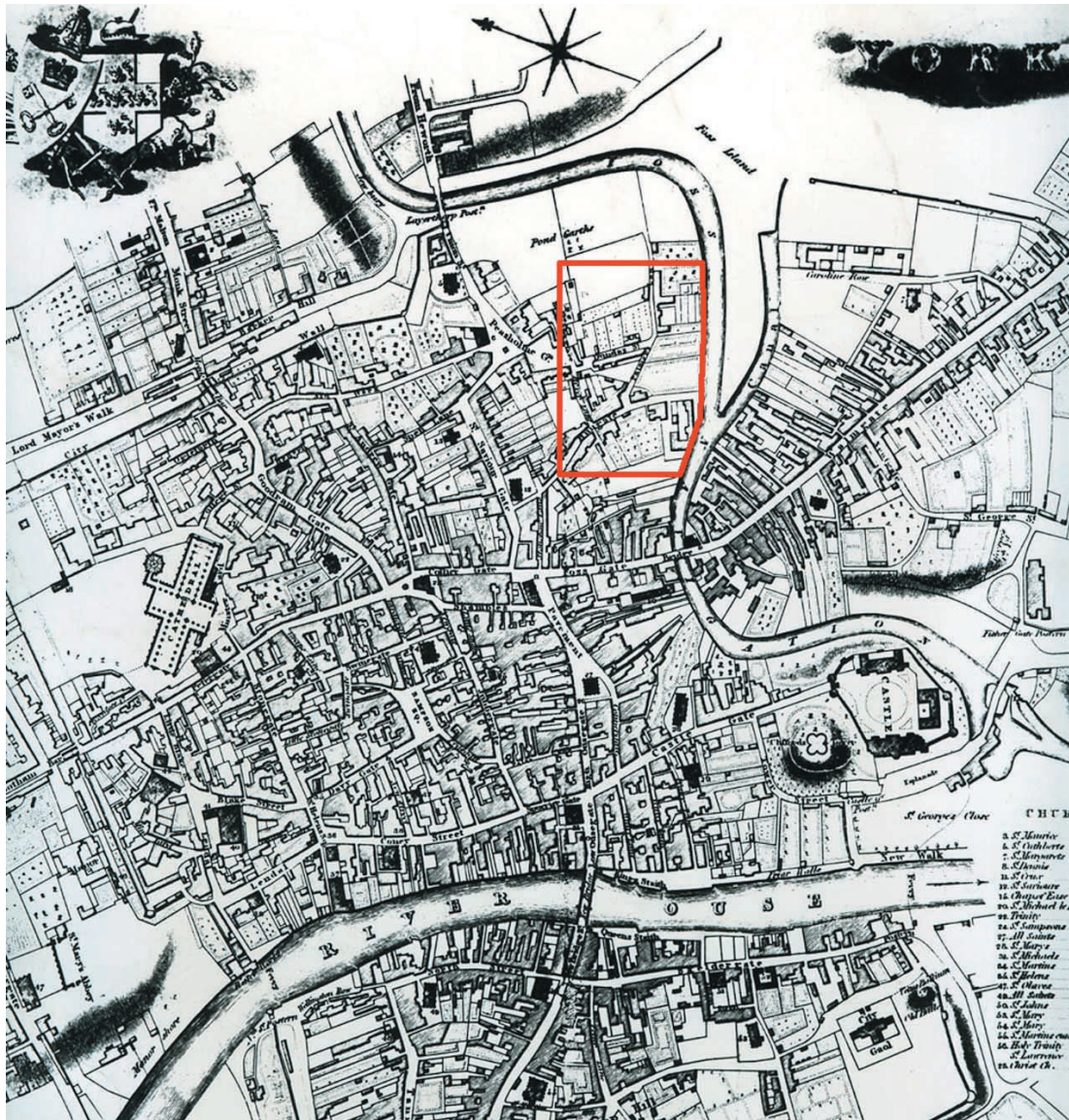


Figure 7 Map of York from Baines Directory, 1822, with location of Hungate site shown

By the 1840s Hungate had become an area of poor working class housing (Pl. 6). The 1<sup>st</sup> edition Ordnance Survey of 1852 provides evidence for considerable building in the previous 30 years (Fig. 8).

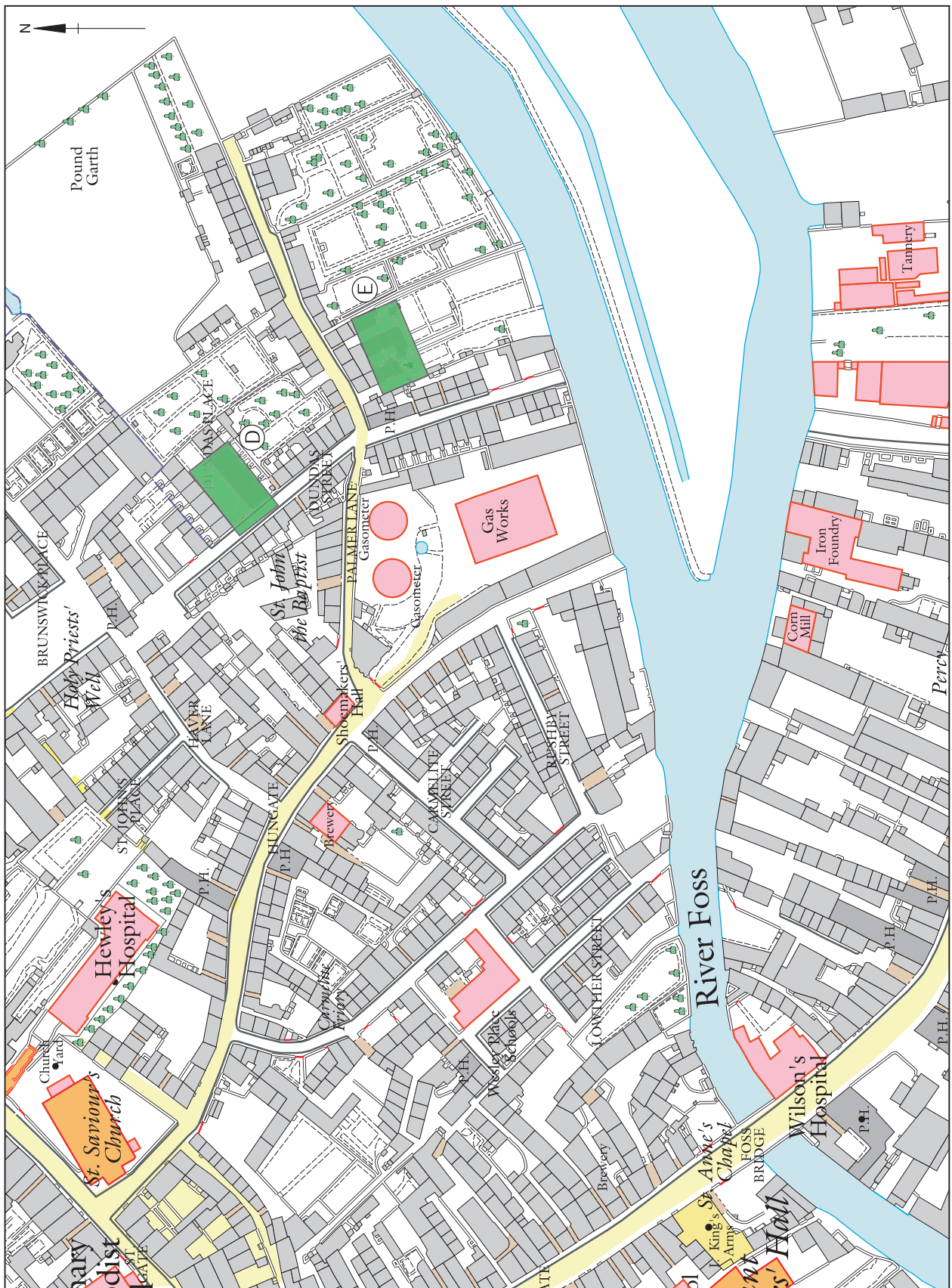


Figure 8 Map of Hungate area based on 1852 1st Edition O.S. Map showing areas of 19th century housing proposed for archaeological investigation in blocks D and E

Hungate, Palmer Lane and Dundas Street and a new street Carmelite Street are all heavily built up. 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 (Fig. 9), just before the OS map was published.



*Plate 6 Flooding in Lower Wesley Place, Hungate, 23rd February 1933*



*Plate 7 Garden Place, Hungate, c.1900 looking south towards the massive silo of Leatham's Mill, built in 1895-6, which dominates the background*

The Gasworks was sold to Leatham's Mills (Pl. 7); the importance of the mills to the local economy led in 1888 to a revival of the Foss navigation work, the original works having failed by 1845.

Developments at Hungate in the late 18<sup>th</sup> and 19<sup>th</sup> centuries should be seen in the context of York's history as a whole during and after the Industrial Revolution. The most recent summary account of 18<sup>th</sup> century York is by Sinclair (2001) and of 19<sup>th</sup> century York is by Royle (2001) who points out that while the population of York trebled in 1801-1901 this was a lesser increase than that in many other cities. York did not become an industrial city comparable to Leeds and others in the West Riding but had an economy reliant on small scale manufacturing and marketing. It was only in 1854 when the North Eastern Railway wagon and carriage works was opened that York acquired its first modern industrial concern. The subsequent emergence of the confectionery industry is of a piece with York's earlier role as a food marketing and

processing centre. From an archaeological point of view it will be of some interest to compare evidence from York with that from Chester, a city with a similar economic history, recently discussed by Matthews (2003).

Although York's population grew more slowly than many other cities in the 19<sup>th</sup> century, it did nonetheless expand, considerably boosted by immigration from the countryside. This raises some important research issues, which may be addressed at Hungate, concerning mode and speed of adaptation of immigrants to an urban way of life as expressed in material culture (Newman 2001, 99).

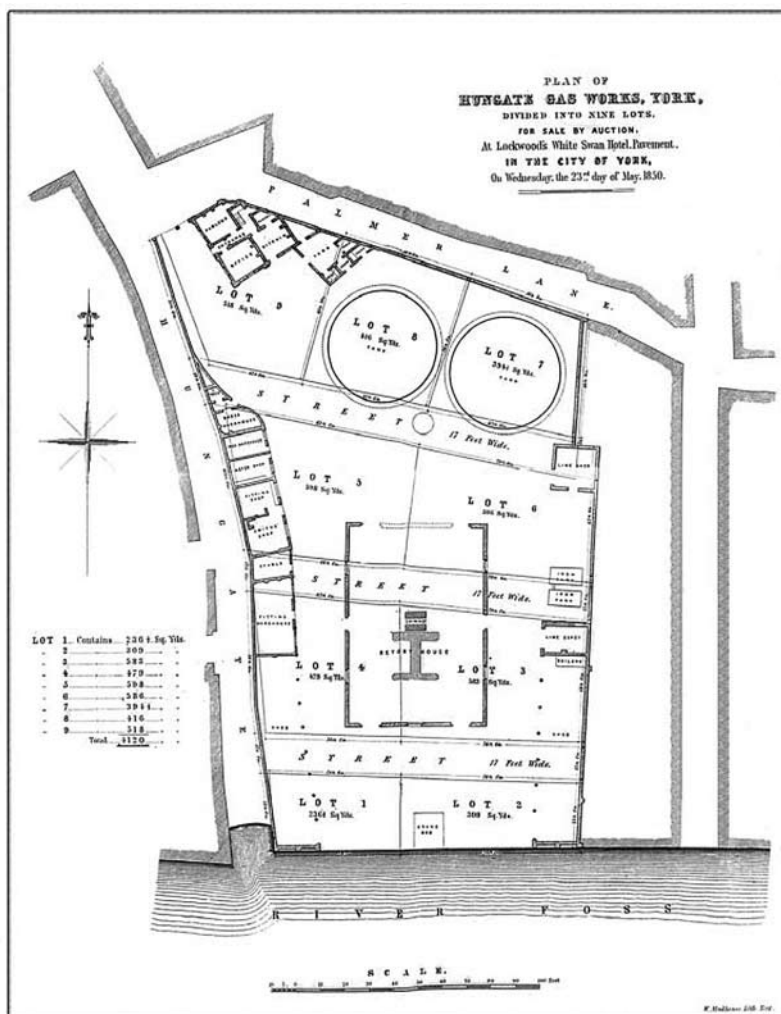


Figure 9 Plan of Union Gas Works from the 1850 sale document

found on the streets of the city. Another area to be singled out for attention was Bedern where archaeological work has also taken place (Richards 2001); an important comparative study with may therefore be possible Hungate.

Another research issue which will be addressed at Hungate is that of living conditions. In the city as a whole in the 19<sup>th</sup> century, especially in areas of tightly packed streets such as Hungate, they were often deplorable. Official concern was, for example, raised by Thomas Laycock's report for the 1845 Health of Towns Commission who drew particular attention to the high death rate (from water-borne diseases, although this was not known at the time) in parishes in low-lying areas including, those around Walmgate and Hungate, where Foss level was kept artificially high by the lock at Castle Mills. Laycock also drew attention to the piles of manure and dung which were to be

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 the 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 also 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. Of particular interest, as much from a methodological as historical point of view in this period, however, is the opportunity offered for comparing the evidence from documentary sources with that from material remains recovered in archaeological excavation. This is a topic discussed *inter alia* by Walker et al. (2003) in the context of the emergence of industrial society in the north-west of England and Deetz (1977, 6-13) in the context of early American history. As Deetz points out, although there may be copious documentary sources for the historical / post-medieval period, as there are for York itself, only a small percentage of the population would have been fully literate and many aspects of people's lives were not recorded on paper. Furthermore what is recorded regarding, for example, possessions and building materials may not be entirely accurate and archaeology can provide a valuable check on the written evidence.

For Hungate the suggested research objectives may be summarised as follows:

- 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 17<sup>th</sup> – mid 19<sup>th</sup> century, but especially in the first half of the 19<sup>th</sup> century when Hungate witnessed considerable new development.
- The layout and character of the extensive gardens and orchards shown on the maps of 17<sup>th</sup> – 19<sup>th</sup> century.
- The living conditions and ways of life of some of one of York's poorest communities in the 19<sup>th</sup> century, in the context of such issues as immigration and religious affiliation. 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. In addition, it will be important to consider the gas works and subsequent mills within the wider social and economic development of York in the 19<sup>th</sup> century.
- In respect of all the objectives given above, another research objective will be a methodological study of the relationship between written and archaeological sources. The study of documentary sources has a particular potential for allowing community involvement in the Hungate project.



Figure 10 Hungate Archaeological Project: showing development blocks and areas of excavation as described in the text

## 2. RESEARCH DESIGN: by Area and Block

For this section the information in Section 1 above is re-stated in summary form to allow a clearer indication of what research objectives will be pursued in each area or block of the excavation. These objectives are itemised under the headings given in Section 1. The blocks and areas of excavation are shown in Fig. 10.

### 2.1 Replacement Sewer

The principal archaeological deposits to be encountered will probably be derived from the medieval and later refuse tipping.

#### Research Objectives

##### 2.1.1 *Natural topography – palaeoenvironment*

- The course and character of the Foss from before the Roman period until the present day.
- The developing character of riverside ecology and the pre –Roman environment.

##### 2.1.2 *Roman*

- The character of the river frontage in the Roman period, especially in terms of artefactual and environmental evidence.

##### 2.1.3 *Anglian / Anglo-Scandinavian*

- The character of riverside usage and conditions, whether in terms of riverside structures, or of activities such as manufacture and trade.

##### 2.1.4 *Medieval*

- The land/water interface and its fluctuations, and corresponding land-use episodes including refuse tipping.

##### 2.1.5 *Post-medieval / early modern*

- The character of the river bank and corresponding land-use episodes including refuse tipping.

### 2.2 **Blocks A – C** (c. 7500 sq m)

The development will largely affect post-medieval – 20<sup>th</sup> century deposits.

## **Research Objectives**

### *2.2.1 Natural topography – palaeoenvironment*

- Study of the natural topography, early river regime and ecology. The survival of palaeoenvironmental material should be best in southern part of the blocks.

### *2.2.2 Roman*

- The character of the river frontage and land use, including refuse tipping, will be addressed using the pre-pile probes and lift shafts.

### *2.2.3 Anglian – Anglo-Scandinavian / Medieval*

- As for the Roman period, the character of the river frontage and land use, including refuse tipping, will be addressed using the pre-pile probes and lift shafts.

### *2.2.4 Post-medieval /early modern*

- The character of the post-medieval gardens and orchards which appear to be shown on the maps from 17<sup>th</sup> century onwards.
- Aspects of ways of life and patterns of refuse tipping will be studied based on sampling of material for finds and environmental data

## **2.3 Link Tunnel Blocks C and E**

The greatest impact on the archaeology will be on medieval, post-medieval and modern deposits, but piles will penetrate the entire archaeological sequence.

## **Research Objectives**

### *2.3.1 Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

### *2.3.2 Roman / Anglian - Anglo-Scandinavian / Medieval*

- Palaeoenvironment and the character of the river frontage and land use, including refuse tipping.

### *2.3.3 Post-medieval / early modern*

- Character of deposits on the river frontage at a time of rapid economic change and refuse tipping patterns.

#### **2.4 Block D (2700 sq m)**

The principal impact of development 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 establishment of 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 Objectives**

##### *2.4.1 Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

Should extensive excavation be required there is very good potential for addressing these themes.

##### *2.4.2 Roman*

- If, as result of evaluation, a Roman cemetery is uncovered and extensive excavation is required the principal research objective will be cemetery studies, as outlined in 1.3.3 above, within the context of contemporary land use and topography.

##### *2.4.3 Anglian/Anglo-Scandinavian*

- Location of areas of activity and occupation and the characterisation of deposits; the extent to which this objective can be addressed depends on scope and scale of excavation

##### *2.4.4 Medieval*

- Characterisation of the medieval community and its use of land in the Hungate area adjacent to the church of St John in the Marsh. This is a part of medieval York about which little is known.

##### *2.4.5 Post-medieval / early modern*

- The study of post-medieval and particularly 19<sup>th</sup>-century housing - in this case belonging, perhaps, to the class immediately above the poorest identified by Rowntree (1901) e.g. in Dundas Place.
- The study of changing ways of life and living conditions based, in the first instance, on artefact and deposit samples.

## **2.5 Block E (c.3400 sq m)**

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 Objectives**

#### *2.5.1 Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

#### *2.5.2 Roman*

- Characterisation of the deposits and determination of land use patterns on the river frontage, largely through excavation of the lift shaft wells.

#### *2.5.3 Anglian - Anglo-Scandinavian / Medieval*

- As for the Roman period, the research objective here is the characterisation of the deposits and determination of land use patterns on the river frontage, largely through excavation of the lift shaft wells.

#### *2.5.4 Post-medieval / Early Modern*

- Post-medieval and, in particular 19<sup>th</sup> century, topography and housing.
- The study of changing ways of life and living conditions based, in the first instance, on artefact and deposit samples.
- The character of Foss Bank, at a time of rapid economic change in terms of river regime and patterns of refuse tipping.

## **2.6 Block F and Car Park (1500 sq m)**

The principal impact will be on early modern structures including the early 19<sup>th</sup> century gas works and succeeding mill. YAT (Trench 16) and FAS evaluation excavations showed that structural remains of post-medieval / 19<sup>th</sup>-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. The FAS work also showed there to be areas of contamination by toxic chemicals. Piles will penetrate the entire archaeological sequence.

## **Research Objectives**

### *2.6.1 Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

### *2.6.2 Roman*

- Characterisation of the deposits and determination of land use patterns on the river frontage, largely through examination of pre-pile probes.

### *2.6.3 Anglian - Anglo-Scandinavian / Medieval*

- As for the Roman period, characterisation of the deposits and determination of land use patterns on the river frontage, largely through examination of pre-pile probes.

### *2.6.4 Post-medieval / 19<sup>th</sup>-century*

- The principal research objective for this block is the study of the early 19<sup>th</sup>-century gas works and saw mill with a view to learning, firstly, more about the industrial processes and other activities which took place there and, secondly setting these processes and activities into their wider economic and social context.

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

Construction will primarily affect modern deposits but piles will penetrate the entire archaeological sequence.

### *2.7.1 Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

### *2.7.2 Roman*

- Characterisation of the deposits and determination of land use patterns on the river frontage, largely through examination of pre-pile probes. On the western side of the block, the piles may encounter material related to possible dock.

### 2.7.3 *Anglian /Anglo-Scandinavian - Medieval*

- Characterisation of the deposits and determination of land use patterns on the river frontage, largely through examination of pre-pile probes.

### 2.7.4 *Post-medieval / 19<sup>th</sup>-century*

- Aspects of urban topography as revealed in watching brief.
- The study of changing ways of life and living conditions based largely on examination of pre-pile probes and samples taken in watching brief.

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

It is envisaged that construction will demand total removal of archaeological remains including a Roman cemetery, Anglo-Scandinavian strata, and medieval buildings on Hungate.

### **Research Objectives**

#### 2.8.1 *Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

#### 2.8.2 *Roman*

- A principal research objective in this block is the study of the Roman cemetery, especially if a large number of graves is discovered. This will allow the study of a range of research themes including cemetery organisation, burial customs and human biology. There will be scope for comparison with Trentholme Drive, York and other large Roman cemeteries in Britain.
- An additional, and potentially important research objective is land use and topography of what was probably a marginal area of settlement in much of the Roman period.

#### 2.8.3 *Anglian/Anglo-Scandinavian*

- The origins and process of post-Roman settlement and urbanisation. In particular, the limits of the Anglo-Scandinavian town and the character of land use in a peripheral zone will be studied and compared with others investigated archaeologically.

#### 2.8.4 *Medieval*

- The study of the evolution of the urban topography throughout the medieval period, and of such themes as the character of structures, nature of land use, economic activity, and ways of life.

#### *2.8.5 Post-medieval / early modern*

- The evolution of the urban topography, and of, more specifically, the development of the streets Haver Lane and St John's Place and of 17<sup>th</sup>–19<sup>th</sup>-century housing on Hungate and Haver Lane.
- Themes related to aspects of ways of life and living conditions of a community in an area of marginal land.

### **2.9 Focal Building**

The principal impact will be on 19<sup>th</sup> century and later archaeology, but on earlier deposits it will be minimal.

#### **Research Objectives**

##### *2.9.1 Natural topography – palaeoenvironment*

- Modelling of the natural topography.
- Study of the early river regime and ecology.

##### *2.9.2 Roman*

- Characterisation of the deposits and determination of land use patterns on the river frontage, largely through examination of pre-pile probes.

##### *2.9.3 Anglian / Anglo-Scandinavian - Medieval*

- As for the Roman period, characterisation of the deposits and study of land use patterns on the river frontage, largely through examination of pre-pile probes.

##### *2.9.4 Post-medieval / 19<sup>th</sup> century*

The principal research objective for this block is the study of the early 19<sup>th</sup>-century gas works and later saw mill with a view to:

- studying the industrial processes and other activities which took place there
- setting these processes and activities into their wider economic and social context.

### **3. METHOD STATEMENT: I Site Excavation Strategy**

Under this heading each area or block of the Hungate site is considered in turn. The impact on the archaeology is summarised and then related to its potential to address the research questions outlined above. The section on each area or block is concluded by a summary of the proposed scope and scale of works. This part of the method statement is concluded by sections on the pre-pile probing and the hydrology study. It may be noted that a detailed description of the ground conditions in each area or block may be found in Griffiths 2002.

#### **3.1 Replacement Sewer**

##### **Impact**

The sewer will run along the periphery of Blocks A- C. It will be tunnelled rather than cut from the surface and so 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). The principal archaeological deposits to be encountered will probably be derived from the medieval and later refuse tipping.

##### **Research Potential**

###### *3.1.1 Natural topography – palaeoenvironment*

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

There is potential good potential for studying the developing character of riverside ecology and pre –Roman environment.

###### *3.1.2 Roman*

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

###### *3.1.3 Anglian / Anglo-Scandinavian*

There is 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.

###### *3.1.4 Medieval*

There is potential for studying the land/water interface and its fluctuations, and the corresponding land-use episodes including refuse tipping .

### *3.1.5 Post-medieval / early modern*

There is potential for studying the character of the river bank and the corresponding land-use episodes including refuse tipping .

### *3.1.6 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.

## **3.2 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 – 20<sup>th</sup> century deposits. It is likely that there are 1-2m of deposits of late 18<sup>th</sup> – 19<sup>th</sup> 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 Griffiths, 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**

#### *3.2.1 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.

#### *3.2.2 Roman*

There is limited potential for studying the character of the river frontage and land use from pile cores and lift shafts.

### *3.2.3 Anglian – Anglo-Scandinavian / Medieval*

There is limited potential as deeper intrusions provide the only access to deposits of these periods.

### *3.2.4 Post-medieval/early modern*

There is good potential for studying post-medieval gardens and orchards which appear to be shown on the maps from 17<sup>th</sup> century onwards.

There is good potential for studying life styles based on sampling of material for finds recovery and environmental data

### *3.2.5 Scope and Scale of Works*

The pre-pile probing will be monitored for natural topography and palaeoenvironmental material.

Deposits above 8m OD will be removed mechanically under archaeological supervision. All lift shafts and drain runs below level of 8m will be hand excavated.

There will be a watching brief on the removal of post-medieval/early modern material with a view to recording 19<sup>th</sup>-century housing remains, garden deposits, and to sampling for artefactual and environmental material.

## **3.3 Link Tunnel Blocks C and E**

### **Impact**

The tunnel will link the car parks in Areas A-C and Area E and will be constructed by cutting down from the surface. 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**

#### *3.3.1 Natural topography – palaeoenvironment*

There is only limited potential for study of natural topography from pre-pile cores.

#### *3.3.2 Roman*

There is limited potential for characterising river frontage and land use from pile cores.

### *3.3.3 Anglian - Anglo-Scandinavian / Medieval*

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

### *3.3.4 Post-medieval/early modern*

There is limited research potential as the archaeology is expected to be riverside build-up

### *3.3.5 Scope and Scale of Works*

The pre-pile probing will be monitored for data on natural topography and palaeoenvironmental material.

1-2m of modern – post-medieval deposits will be removed mechanically, followed by hand excavation of up to c.2m of medieval and Anglo-Scandinavian deposits.

## **3.4 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**

#### *3.4.1 Natural topography – palaeoenvironment*

There is only 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 and ecological research.

### *3.4.2 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.

### *3.4.3 Anglian/Anglo-Scandinavian*

In the limited areas of deeper intrusions, deposits of these periods 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.

### *3.4.4 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 19<sup>th</sup>-century Dundas Street. This will contribute to characterisation of the medieval community's land use at Hungate at different chronological stages.

### *3.4.5 Post-medieval / early modern*

There is good potential for studying 19<sup>th</sup> century housing - in this case of the class immediately above the poorest identified by Rowtree (1901) e.g. in Dundas Place.

There is also good potential for studying 19<sup>th</sup>-century ways of live and living conditions.

### *3.4.6 Scale and Scope of Works*

The pre-pile probing will be monitored 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 Roman burials are found*

In this case excavation will be focused on post-medieval / 19<sup>th</sup>-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 19<sup>th</sup>-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 / 19<sup>th</sup>-century housing referred to above. Once this sample has been examined, remaining modern and 19<sup>th</sup> 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.

### **3.5 Block E (c.3400 sq m)**

#### **Impact**

Modern level is at 9.60m and formation level for basement car park is 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**

##### *3.5.1 Natural topography – palaeoenvironment*

There is only limited potential to address research questions outlined above from examination of pile cores.

### *3.5.2 Roman*

There is limited potential to address research questions as deposits of this period are unlikely to be reached except in two of the lift shaft wells.

### *3.5.3 Anglian /Anglo-Scandinavian*

There is limited potential as deposits of this era are unlikely to be uncovered, except perhaps in the lift shafts.

### *3.5.4 Medieval*

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

### *3.5.5 Post-medieval / early modern*

There is good potential for studying 19<sup>th</sup> century housing, ways of life and living conditions and there is limited potential for determining the character of Foss Bank in the period.

### *3.5.6 Scale and Scope of Works*

The pre-pile probes will be monitored for data on natural topography and palaeoenvironmental material. Hand excavation will take place in the area affected by the basement car park and lift shaft wells of post-medieval and 19<sup>th</sup>-century housing, focused initially 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 / 19<sup>th</sup> 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.

## **3.6 Block F and Car Park (1500 sq m)**

### **Impact**

Modern level is 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 ). The principal impact will be on 19<sup>th</sup>-century deposits and structures including the early 19<sup>th</sup>-century gas works and succeeding mill. Three lift shafts, each 6 sq m, will be dug down to 7.9m OD.

YAT (Trench 16) and FAS evaluation excavations showed that structural remains of post-medieval / 19<sup>th</sup>-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. The FAS work also showed there to be areas of contamination by toxic chemicals.

Piles will penetrate the entire archaeological sequence.

## **Research Potential**

### *3.6.1 Natural topography – palaeoenvironment*

There is limited potential to address research questions outlined above from examination of pile cores.

### *3.6.2 Roman*

There is limited potential to address research questions outlined above from examination of pile cores.

### *3.6.3 Anglian and Anglo-Scandinavian*

There is limited potential to address research questions outlined above from examination of pile cores.

### *3.6.4 Medieval*

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

### *3.6.5 Post-medieval / early modern*

There is good potential for studying an early 19<sup>th</sup>-century gas works and saw mill and learning more of industrial processes and their social context.

### *3.6.6 Scope and Scale of Works*

The pre-pile probes will be monitored for data on the natural topography and pre- 19<sup>th</sup>-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 gas works 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 building’ in the area of the proposed car park (Fig.1, 2). It is anticipated at present that this will take place at the end of the project as it is now understood (July 2004) that the building will be occupied through much of the life 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.

### *3.6.7 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.

### **3.7 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.

#### **Research Potential**

##### *3.7.1 Natural topography – palaeoenvironment*

There is limited potential to address research questions outlined above from examination of pile cores.

##### *3.7.2 Roman*

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

### *3.7.3 Anglian -Anglo-Scandinavian / Medieval*

It is not expected to encounter strata of these periods.

### *3.7.4 Post-Medieval / early modern*

There is some limited potential for studying topography, ways of life and living conditions.

### *3.7.5 Scope and Scale of Works*

The pre-pile probes will be monitored for data on natural topography and palaeoenvironmental material. There will be a watching brief during removal of modern deposits which will record evidence for 19<sup>th</sup> century and post-medieval buildings.

## **3.8 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 remains including a Roman cemetery, Anglo-Scandinavian strata, and medieval buildings on Hungate.

### **Research Potential**

#### *3.8.1 Natural topography – palaeoenvironment*

There is good potential for studying topography by exposure of large area of natural subsoil. Preservation of palaeoenvironmental uncertain.

#### *3.8.2 Roman*

There is 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.

There is very good potential for Roman land use and topographical studies.

### *3.8.3 Anglian/Anglo-Scandinavian*

There is 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.

### *3.8.4 Medieval*

There is 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.

### *3.8.5 Post-medieval / early modern*

There is good potential for examining the development of streets Haver Lane and St John's Place, 17<sup>th</sup>–19<sup>th</sup>-century housing on Hungate and Haver Lane, and ways of life and living conditions on the basis of structures and artefactual assemblages.

### *3.8.6 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 19<sup>th</sup> century townscape as depicted on the 1852 and later OS maps, although evaluation suggests that survival of 19<sup>th</sup> 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.

### **3.9 Focal Building**

#### **Impact**

Overburden will be removed to 8.5m OD, the approximate level at which the 19<sup>th</sup> century gas works retort house and other gasworks buildings survive. 1505 cu m of ground to be removed. The principal impact will be on 19<sup>th</sup> century and later archaeology, but on earlier deposits it will be minimal. Two lift shafts each 6 sq m dug down to 7.9m OD. Piling will penetrate the entire sequence.

#### **Research Potential**

##### *3.9.1 Natural topography – palaeoenvironment*

There is limited research potential for deposit modelling and palaeoenvironment from examination of pile probes.

##### *3.9.2 Roman*

There is limited research potential for studying character of deposits and land use from examination of pile probes.

##### *3.9.3 Anglian - Anglo-Scandinavian / Medieval*

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

##### *3.9.4 Post-medieval / early modern*

There is very good potential for examining both industrial facilities, namely the early 19<sup>th</sup>-century gas works and later mill, and housing on the west side of Dundas Street.

##### *3.9.5 Scope and Scale of Works*

The pre-pile probes will be monitored for data on natural topography and palaeoenvironmental material.

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, later structures including the saw mill, and the boundary with properties on Lower Dundas Street. The conduct of the excavation will be affected at least to some extent by the problems of contaminated ground (see above under Block F).

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

### **3.10 Pre-Pile Probes**

The cores recovered from the 0.10m diameter probes inserted into each area or block of the site before piling will make an important contribution to advancing the development of predictive deposit modelling in York, building on the survey by Ove Arup and Partners and York University in the *York Development and Archaeology Study* (1991) and as far as Hungate site is concerned on the evaluation coring by On-Site Archaeology (Griffiths 2002, 62, fig.18). The cores will also advance knowledge of the character of deposits, including those derived from alluviation and paleochannels, and, in the case of organic-rich deposits their decay trajectory (see also 2.11 below). Finally, they will provide material for detailed palaeoenvironmental studies.

### **3.11 Hydrology Study**

The impact of building development with attendant deep, piled foundations on the organic-rich deposits in many parts of central York is a cause for considerable concern to the City and to English Heritage. The principal agency for preservation is waterlogging and it has been suggested that the effect of piling is to lower the water table such that archaeological deposits dry out and valuable archaeological material is lost. At Hungate the site owners have agreed to work with the City and English Heritage to assess the state of the water table pre-development in such a way that effect of piling can be monitored. This will provide data for the city-wide survey on the water table currently being conducted by University of Leeds.

## **4. METHOD STATEMENT: II Archaeological Recording Techniques**

### **4.1 Recording of Stratigraphic and Structural Material**

Guidelines for an archaeological site recording methodology based on 'single context' planning have been developed by Griffiths (2002, 95-8), and whilst no purpose is served by their repetition here, a number of points concerning intended recording protocols are summarised below.

#### *4.1.1 Archaeological Operations Manual*

For the Hungate project a dedicated Archaeological Operations Manual will be produced defining procedures and standards for the project in respect of excavation and recording methodology, and archive management. In respect of day to day routine recording stratigraphic and structural material this will draw heavily on the revised version of the YAT *Site Recording Manual* (2004). This document also informs the summary of the intended approach to recording given below.

#### *4.1.2 Context Recording: General*

In general terms each archaeological context will be recorded under a unique number and will be initially classified as a deposit, cut or structure. Each context will have a written record structured by the field headings on the YAT pro-forma context recording card which are replicated as fields in the electronic archive or Integrated Archaeological Data Base (IADB). Each hand-excavated context will also be recorded in drawn form, where possible using a tablet PC and the drawings will be stored digitally in the IADB. Sections through contexts or groups of contexts will be drawn as appropriate and stored digitally in the IADB. Contexts excavated mechanically and recorded during watching briefs may be recorded solely in section. Individual contexts or groups of contexts will be photographed as appropriate using a digital camera and/or 35mm colour film format.

It is anticipated that on the Hungate site there will be the full range of archaeological context types that would be expected on an urban site in York. Certain types of context, described below, will require a particular approach to excavation and recording over and above that described above.

#### *4.1.3 Recording Timbers*

The approach to recording timbers will be based on an awareness that there are two distinct types of information which the study of timbers can provide:

- The structural and constructional information gained from studying the timbers as **timber** – i.e. worked wood
- The environmental and dendrochronological aspects gained from a study of the timber as **wood** – i.e. as part of a tree.

A wide variety of timber structures may be encountered at Hungate, including well linings, drain linings, pit linings, structures, boats and revetments. If timber or wattle structures are identified the YAT timber specialist and Conservation department will be consulted in respect of appropriate recording, dismantling/lifting, sampling for identification, dendrochronology, and C14 dating, and packaging.

The YAT approach to recording timber involves the following elements:

- Every timber has a separate timber number as well as a context number and written description compiled on a YAT Timber Record Sheet. A separate context number will also be given to a structure which is composed of a number of timbers.
- Every timber is drawn on plan and any section/elevation drawing of the context from which it came.
- Where possible, a photographic record is made of the timber in situ and of the dismantling operation

#### 4.1.4 Recording Brick and Masonry Structures

A wide variety of brick and masonry structures may be encountered at Hungate including walls, and drain, pit and well linings. In compiling the site record each discrete structure is recorded as a separate context and each component of a structure including the foundations is also recorded as a separate context.

Both faces of a wall and the wall core will be recorded and a note made of whether or not the two faces differ in terms of materials, finish or weathering.

In respect of *masonry* note a record will be made of:

- the size range of all stonework used and the individual dimensions (length, width/ height, thickness) of any stone blocks.
- the nature of the coursing, and the finish or dressing of stone work
- any architectural or sculpted fragments.
- evidence for use of mason's tools, including the axe, chisel or stone saw, and of mason's marks.
- any surface coating in the form of plaster or render.
- the types of building stone or brickwork present. The more common stone types in York including Magnesian Limestone, Oolitic Limestone Millstone Grit and Elland Flag (York Stone) should be recognisable by site staff, but for the identification of rarer types a geologist will be called in as appropriate.
- the composition and colour of the mortar or other bonding material and size of the joints.

In respect of *brickwork* a record will be made of:

- the colour, size and shape of the bricks.
- the form of bonding.
- the alignment and jointing of the bricks.
- the colour and nature of mortar and form of joints.

#### 4.1.5 Graves and Burials

##### **Inhumations**

Preparation for the excavation of inhumation burials will involve:

- Provision of specialised digging equipment: 'plasterer's leaves', dental tools, soft brushes, the correct finds bags, boxes and labels.
- Consultation with specialists about the protocol for sampling deposits from burials. If it is shown that preservation of organic material is good around the skeletal material a controlled sampling procedure may be required. It is also possible that more specialised sampling will be put in place for bone and soil analysis.

The grave will usually be excavated by working from outside, so avoiding damage to skeleton or grave goods. The skeleton will be carefully cleaned, usually by starting at the skull and working down towards the feet. As cleaning of small bones such as hands, feet and ribs can cause disturbance, and it will often be best to excavate only the minimum amount of soil necessary to show their position. The foot and hand bones can then be collected in the form of a sample with the surrounding fill. If the bones are well preserved the use of a small sponge and clean water will be used to aid definition for photography. Skeletons will not, however, be repeatedly wetted and allowed to dry, as this may result in disintegration of the bone.

Every effort will be made to identify organic material directly associated with the skeleton. Hard structures are often produced by the human body during life and, in some circumstances, may persist after burial so that they can be retrieved during excavation. Kidney, bladder, sinus and gall stones, like epiphyses, resemble small pebbles and are therefore difficult to recognise. Hyatid cysts – cysts produced as a reaction to the tapeworm parasite – can be found in many regions of the skeleton, but more usually in the abdomen, thorax and cranium. These cysts are normally of a thin calcareous structure and roughly spherical in shape. Biological material to be expected include stomach contents and coprolites: these may contain cereal fragments, seeds of food, plants and the eggs of intestinal parasites. Although they may be preserved by mineralisation, these are most likely to occur in waterlogged deposits.

##### **Recording**

In the context record for the grave cut a note will be made of :

- The type of grave such as 'simple earth-dug grave', 'grave with mortar floor', 'stone-lined grave' etc.
- Alignment of the grave and skeleton using compass points not site grid.
- Body position of the skeleton
- Any coffins, containers or linings.
- Any lining with stone slabs, tiles etc.

In addition, a skeleton will be given its own context number and recorded in detail on the skeleton recording card. This will allow a detailed record in written and sketch form to be made of:

- overall body position (crouched or flexed, lying on right or left side, extended etc.), the position of the legs (straight or crossed etc) and arms (straight at the sides, folded over the pelvis or on the chest etc).
- dimensions of the skeleton
- alignment in relation to true north
- the skeleton's state of preservation, i.e. extent of survival of body parts, the condition of the bone and obvious pathologies (cut marks on skull, fused vertebrae etc).
- any accidental damage caused to the skeleton during excavation or lifting..
- Any coffin or container in respect of material and fittings.
- Grave goods, i.e. objects (pots, dress fittings etc) or biological material (animal bones or skeletons, plant remains etc)
- any samples taken of the deposits immediately around the skeleton.

Graves may contain more than one skeleton or a skeleton and parts of others which had been disturbed when the burial was made. There will be skeleton recording card for each skeleton which is complete or reasonably complete (i.e. over about half surviving). The Finds Department will give each complete and partial skeleton a Skeleton Number which should be recorded on the card.

### **Planning and Photographic Recording**

In normal circumstances a scale drawing of an inhumation burial is made at 1:10. In cases where grave goods or coffins with fittings are found or expected a scale drawing of the grave cut will be made as soon as it has been defined and as excavation proceeds the location of any artefacts or biological material drawn on with a spot height given.

In the case of coffin nails or fittings their alignment as well as location will be carefully recorded in three dimensions so that an accurate reconstruction of the coffin can be made in post-excavation. If appropriate a photograph will be taken of any coffin fittings or decorative items in situ before excavation.

In some circumstances photography may be used to record skeletons *in situ*. Before photographing some means of locating the skeleton in relation to the site grid will be found which can be clearly seen in a photograph. Both the skeleton number and a suitable scale will be included in the photograph so that the skeleton can be identified and prints made to scale (usually 1:10).

## **Coffins**

Lead and stone coffins, or sarcophagi, are very rare finds, but can occur in both Roman and medieval contexts. Recovery of a stone coffin will require heavy lifting gear and will not be undertaken without considerable care following a full risk assessment. If a sealed lead coffin is uncovered, great care will be taken to prevent the seal being broken. Opening will normally take place under controlled conditions in the Conservation Laboratory.

## **Cremations**

Cremations were often buried in containers, usually pottery vessels, but bags, caskets and glass jars are also known in the Roman period. If a cremation is found in a container, the contents will not usually be excavated on site, if possible the container will be lifted whole and sent for excavation by the osteologist. If either the container cannot be lifted or the bones were not buried in a container at all care will be taken to ensure the whole burial context is recovered, including any of the surrounding grave fill with which the cremation may be mixed.

When excavating a cremation grave recording will proceed as with an inhumation and a record made on the grave plan of the location and level of all finds whether obvious grave goods or not.

## **4.2 Use of Information Technology (I.T.)**

In addition, it should be stressed that for the Hungate project YAT will use a modern digitally based recording system suitable for a research driven investigation which will be designed prior to, and developed during, the archaeological programme. This system will be described in the Archaeological Operations Manual. The overall objective will be to create a digital archive within the framework of YAT's Intergrated Archaeological Database (IADB) from which high quality web-based publications of both a popular and academic nature can be generated.

Initially, a secure base station will be established on site with a broadband connection and wireless network connected to a number of tablet PC's which will be used for the drawn record and where possible the written record. This approach will not only avoid the costly duplication of effort involved in the digitising of traditional paper archives, but will also allow rapid access to, and assessment, of data as it is recorded. In addition, survey data will be gathered using total station theodolites. Three dimensional plan and survey data will be viewable in CAD software allowing the creation of digital pre- and post-excavation plans in the field. Rectified and computer rectified photography incorporating suitable survey control will be used to create the drawn record of human burials and, where appropriate, structural features such as wall elevations. The survey control will be established using total station theodolites with reflectorless electronic measure capabilities. The necessary detail from these photographs will then be digitised using CAD software and the resulting drawings will be integrated into the digital drawn record.

An important objective of the digital recording system will be to allow access to all interested parties, including scholars and members of the public, who will be able to provide feedback to the project as it proceeds via a dedicated web site (see below).

## **5. METHOD STATEMENT: III Finds and Conservation**

### **5.1 Introduction**

The Hungate site is expected to produce a large number and wide range of finds, both man-made artefacts and biological materials. The most common finds are likely to be pottery, animal bones, building materials and industrial waste (e.g. slag) – these are referred to as bulk finds. In addition objects of glass, copper alloy, iron, bone and other materials are likely to be regularly encountered – these are referred to as small finds.

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.

### **5.2 Retrieval**

Finds of all categories, and of all periods, will be recovered as a matter of routine during the excavation. In addition to hand collection, special techniques will as appropriate used to improve recovery – for example, sieving for small items, and use of electronic detectors for all metals.

The first principal of retrieval is that all the finds from a given context will be kept together and not mixed with finds from other contexts. When retrieved from the ground finds will be kept in a finds tray or appropriate bag and not simply placed on the ground where they can be stepped on, kicked or simply forgotten about. In some circumstances only representative samples will be taken of certain types of finds, usually those which are extremely abundant such as building stone, tile and slag. Decisions on sampling will be a joint decision by the Project Manager, Finds Specialists, Client's Representative and Yorkshire Museum.

In certain ground conditions, for example those affected by waterlogging a wide range of objects in organic materials, such as wood, leather and textile, should survive in a good state of preservation. Advice from the YAT Finds and Conservation Department will be sought before any objects are recovered.

### **5.3 Recording and Labelling**

In the first instance the context number is used to identify and record a find.

Each excavator will, in the first instance, be responsible for ensuring finds are correctly labelled. This will be done by giving each tray of finds two white Tyvek labels on which must be written, with the indelible pen ('magic marker'), the site code, context number and date of excavation.

It will be usual practice to place small finds in an appropriate polythene ('minigrip') bag before placing them in the tray. The find will then be given a small find number and description by the Finds Assistant. Excavators will write the site code and context number on the white panels on the bag with the indelible pen ('magic marker').

Excavators will hand any objects which are delicate, fragile or unstable directly to the Finds Assistant or Project Manager.

#### **5.4 Treatment and storage of finds on site**

Objects in the ground will decay to a point at which they are in equilibrium with the sediments surrounding them. After that point is reached, decay will proceed only very slowly. When the object is removed from its environment this equilibrium ceases, and decay may accelerate unless a new equilibrium is attained. It will be important, therefore, to ensure finds are treated appropriately as soon as they are removed from the ground.

In general terms will be advisable to retain finds within an environment approximating to that from which they have been removed. Finds from damp environments will be kept damp, and finds from desiccated environments will be kept dry. The Project Manager and Finds Assistant will ensure that excavators are aware of any requirements for treatment of finds.

##### *5.4.1 Timber*

Every timber will usually be packaged separately. Two labels (preferably Tyvek™ labels) will be put inside the bag and further information attached to the exterior of the bag, either by writing it on the bag itself or by attaching a label. All bags will contain a small amount of water to keep the timber moist and then be properly sealed (if inadequately sealed the wood may dry out).

##### *5.4.2 Masonry and Brick*

When dismantling masonry or brick structures a strategy will be adopted as appropriate to collect:

- Samples of ceramic building materials i.e. types of brick and tile, and of each different geological stone type
- All architectural pieces, i.e. stones which appear carved or worked and not simply squared or faced.

- A sample of squared and faced stones, especially those with clear stone tooling marks.
- Samples as appropriate of all mortars and renderings.

#### **5.4.3 Human Skeletons**

Skeletons will be lifted as soon as possible after excavation. Ideally the human osteologist should always be consulted before a skeleton is lifted. When dealing with very fragile skeletons the human osteologist should be contacted to assist with excavation.

Bones will be bagged as appropriate and all bags will be properly closed and have a label both inside and outside. Skeletons will be boxed as soon as possible after lifting, even before washing, to minimise crushing. Air will be trapped in with the bones when bagging, to prevent crushing. Infants and juveniles will be kept separately from adult skeletons because they are very fragile.

All skeletal material will be retained unless a decision is made to the contrary by the Project Manager, osteologist, Client's Representative and Yorkshire Museum.

### **5.5 Finds Management**

On recovery all bulk finds and small finds will be logged digitally on the IADB which will allow an audit trail in respect of storage, conservation, recording and analysis for each item or group of items to be established. This will be done under the supervision of the YAT Head of Curatorial Services working in conjunction with the Project Manager.

## **6. METHOD STATEMENT: IV Sampling**

It is envisaged that there will be a major programme of deposit sampling at Hungate 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 York in the 1970s and 1980s; this will involve innovation in the methodology of sampling. The sampling programme will be undertaken in full consultation with the English Heritage Regional Science Advisor, who has also been consulted for this document. .

In some cases deposit samples for wet sieving to various mesh sizes will be taken to ensure the maximum recovery of artefacts which are too small for reliable hand collection such as coins, dress pins, needles etc. However, for the most part deposit samples will be taken for the recovery of organic material which includes plant remains (usually seeds and pollen), animal bones, insect remains and shells.

## 6.1 Environmental and Biological material

Evaluation excavations have shown that there will be good survival of organic-rich deposits on the Hungate site and a wide-ranging sampling programme is envisaged. All sampling for environmental and biological material will take place in accordance with the recommendations contained in the papers *Environmental Archaeology and Archaeological Evaluations*, Association for Environmental Archaeology (1995) and *Environmental Archaeology: A Guide to the Theory and Practice of Methods from Sampling and Recovery to Post-Excavation* (English Heritage 2002).

The sampling regime will be based on five types of deposit sample described below:

- *General Biological Analysis Sample (GBA)*: these are taken as a 10 –20 litre samples, and are wet-sieved on a fine mesh primarily to recover microscopic remains such as seeds, pollen and insects. The GBA will be widely used to recover organic material from deposits of all types.
- *Bulk-sieved Sample (BS)*: usually these samples are 40- 60 litres in size, and may be taken in multiples from particular contexts. They are for recovery of large samples of animal bones and other organic material particularly from waterlogged deposits which have a high degree of organic preservation.
- *Site Riddled Sample (SRS)*: these samples are dry sieved, usually through a mesh of 10-12mm, to recover animal bones, artefacts etc.
- *Spot Sample*: samples taken for those contexts or finds not suited to sieving, such as caches of seeds, pieces of eggshell or any specific finds of organic material. They usually require specialist analysis.
- *Column Sample*: Pollen, diatoms and other microscopic material is normally sub-sampled from an intact column sample of the deposits. Deposits such as buried soils, river silts or natural peats will be column sampled in situ, preferably by a specialist.

Processing of samples during the course of the excavation will take place on site as far as is possible. This is probably an area where community volunteers could get involved under supervision from suitably qualified/competent staff. Spot samples and column samples will be processed by the appropriate specialist.

## 6.2 Archaeometallurgy

In the event of the discovery of any form of hearth or furnace a sampling strategy for recovery of hammer scale and other metallurgical debris will be instituted. Sampling in relation to the site grid might identify location of anvils where hot working of iron or other metallurgical processes took place.

### **6.3 Radiocarbon Dating**

There may be occasions, notably in excavation of naturally deposited alluvial sequences or peat pre-dating intensive human occupation on the site when radiocarbon dating will be required. Samples will be taken in consultation with the appropriate specialist.

### **6.4 Sampling Management**

On site sampling strategy will be the responsibility of the Project Manager working in conjunction with appropriate specialists and the YAT Head of Curatorial Services. On recovery all samples will be logged digitally on the IADB which will allow an audit trail in respect of processing, storage, recording and analysis for to be established.

## **7. ASSESSMENT, ANALYSIS, PUBLICATION AND ARCHIVING**

### **7.1 Assessment**

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).

### **7.2 Analysis and Publication**

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](http://www.yorkarchaeology.co.uk/walmgate/index.htm)) and other sites. 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.

### **7.3 The Archive**

The long term care of the Hungate archive has been provided for in the programme of work. All the original material, and the digital and paper archive will be prepared for deposition with an appropriate institution such as the Yorkshire Museum, which usually receives material from archaeological work in the City of York.

## **8. PUBLIC ACCESS, PARTICIPATION AND EDUCATION**

### **8.1 Introduction**

YAT currently owns three attractions, JORVIK, ARC, and Barley Hall. JORVIK was a ground-breaking archaeological display and continues to be one of the best performing venues on the

national scene. The Chief Executive is a Director of the York Tourist Bureau and an executive Director of the Yorkshire Tourist Board where he represents the private sector.

YAT's achievements in access, education and participation 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), the latter in association with The University of Leeds.
- development of the facilities (space, work areas, resources, lecture area) at the Archaeological Resource Centre (ARC) 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.

## **8.2 Opportunities at Hungate**

YAT has been asked, subject to instruction from and agreement with the client, to put in place a programme to allow access and participation for the general public during the Hungate project. This paper looks at options and solutions to achieve that aim.

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.

This initial plan calls for the focus to be placed on Block H as this should be available for five years and has the easiest access. Blocks A, B, C and D all present problems with both health and safety issues and the relatively limited or constrained nature of the excavations. The potential is probably greatest at Block D where interesting material could be encountered relatively early within the project. Block E has some potential for important discoveries, but the potential of Block F, the former gasworks site, is likely to remain unclear until clearance.

### 8.3 Target Audiences

With over 13 million visitors since inception JORVIK audiences give a useful insight into the visitor profile of York. JORVIK is extensively advertised with, for example, some 350,000 leaflets being issued annually. Given its focus, the pattern of visitors to JORVIK should reflect the likely potential audiences for any archaeological project at Hungate.

#### 8.3.1 JORVIK

JORVIK (visitors by type)

42% adult	20.6% families	11.2% schools
10% seniors	8.3% children	4% groups

JORVIK (visitors by original location)

18% Yorkshire as a whole	66% UK
16% Overseas visitors of which 54% have English as a first language	

#### 8.3.2 The ARC

Unlike JORVIK the pattern for the ARC reflects its emphasis on school children and the north. Local interest is harder to judge.

#### 8.3.3 St Leonard's

In the years 2001-4 YAT has run the St Leonard's training excavation next to the main City Library. The site faces one of the city's main thoroughfares and is advertised by local press articles, web page, leaflets, banners and a single A board. It is thought to capture only about 2.3% of the passing trade. Although a higher hit rate might be achieved by more advertising, it is restricted by planning considerations that might also have an effect at Hungate. We have experimented with free entry and encouraged donation versus a £1 charge at this site. A £1 charge results in around 50-60% less visitors but the donations generate approximately 25% less income per head.

### 8.3.4 Hungate

As a general excavation attraction Hungate will have to work hard to achieve sustained significant local and UK wide interest. To an extent, however, we can take advantage of existing methods, for instance, by adding a Hungate blaze to the 350,000 leaflets issued annually by JORVIK.

The success of Hungate as an exceptional facility are much more difficult to gauge. Over the last 10 years the ability of the attractions and tourism business to project visitor numbers to exceptional attractions has been very poor both in Yorkshire and the UK as a whole (*vide* Millennium Dome, The Deep, Magna etc). The most recent survey information suggests that of non-Yorkshire UK day visitors to York around 40% have come to visit a specific attraction.

Public interest in a site as an exceptional attraction is broadly proportional to the state of preservation of the finds, its uniqueness and its cultural resonance. Until excavations are underway we will not finally know what kind of material exists on site. What we do know is a great deal about tourism and public interest in York as a whole. The ten-fold decrease in visitor numbers between the ARC and JORVIK reveals the importance of position as the former suffers from being outside the general tourist footprint. From two years excavations at St Leonard's next to one of the major throughways we also know that, in itself, excavation has only a limited appeal.

Considering all these factors as a whole it would seem wise to view public access and education at Hungate as consisting of two main elements; education opportunities for school children and the public, and special public access if high value discoveries are made.

What follows outlines the approaches to be taken to these main themes. Firstly, it establishes a general level of provision for the whole life of the site and, secondly, options for additional material if major discoveries are made. It is intended that evaluation of the potential of major discoveries be made by a group consisting of the developer, their agent and a senior representative from YAT.

## 8.4 Hungate: getting the public onto site

### 8.4.1 Awareness

There will be a need to establish awareness of what is available at Hungate. Much of this will be dealt with by our own marketing department using the existing and highly successful JORVIK methods and materials.

A more difficult problem is to achieve 'pathways' from both these sites and adjoining car parks as this will be subject to detailed planning constraints.

#### 8.4.2 Physical access to site

Currently access to the site from the city centre is from the Stonebow down Hungate or Dundas Street to the centre of the site activity. The main publicity for the site *{banner}* should be on the Stonebow frontage with additional directions at the top of Stonebow. This should draw people down Hungate to the site where the information/exhibition portable accommodation unit (see below) should be sited and tours of the site start.

Access from the ARC is via either the top or bottom of St Saviourgate. The currently barred top of Hungate, in front of the ARC tower, will apparently not be available. Access from JORVK is either along Pavement and the Stonebow or via the proposed Walking Tour (see below).

Access from Foss Islands road is via Peasholme Green and up the Stonebow to Hungate. It could also be from the Red Tower coach drop off, along Navigation Rd, across the Foss to the Shambles car park and into the site.

The nearest car park is the Shambles car park (open 8.00-18.30) or public car and coach parks on Foss Islands Road, Jewbury. There is also additional limited multi-storey car parking next to ARC.

Promotional elements to aid the public to visit the site could include:

- banner on Stonebow or in shop window
- banner at site entrance
- promotion leaflets showing map and opportunities to be involved ( see St Leonards as a model)
- planning permission for additional banners and banners to establish pathways
- leaflet distribution costs
- 2 promotion graphic panels at JORVIK
- 2 promotion graphic panels at ARC
- cross banner (e.g. visit Hungate) on JORVIK adverts (350,000 p.a.)
- placement of Hungate on JORVIK/YAT web-site

There would be a small admission charge and/or request for donations.

#### 8.5 Hungate: dispensing information on site

The client has indicated that a portable accommodation unit compound will be available during the project. This would include a staffed portable accommodation unit with 2 entrances and an approach suitable for the disabled. This would serve to sell tickets, give out leaflets, some retail/souvenirs and provide information about the Hungate site.

This would include the history of the site, why we are there, what we expect to find, methodology, training and public involvement opportunities. It would take the form of graphics panels and leaflets together with web pages on our own site (plus the leaflets and 2 panels each at JORVIK and ARC described above).

The information panels and leaflets should be available at the beginning of work on site and the Web site should be up in advance of work beginning.

Updating information panels: these could either be simple white boards with information added by magic marker (as on St Leonard's) or simple A3 laminated sheets attached to fences/buildings which could draw on material prepared for web diary. Numbered/lettered blocks on site could relate on site-features to text descriptions.

Site guides could give talks at advertised, set times throughout the period of excavation.

Elements required to dispense information on site could include:

- Leaflets
- 5 Graphics panels and lecterns en route
- Web pages
- Site guides
- Ability to update information panels

## **8.6 Hungate: public mobility on site**

### *8.6.1 Block H walkway (from 2005 / Week 2)*

Walkway around available parts of Block H (with disabled access) with further changing information panels. This is unlikely to be a complete circuit of Block H at any one time due to digging schedule and need to put in the sheet piling. Initially it might be a ground level fenced walkway and subsequently a more fixed ramped walkway when area H1 has been completed. If it is not possible to provide disabled access to all the walkway as it changes then there should be a well-positioned viewing area with information at appropriate heights and in appropriate formats.

Required elements:

- Walkway and fenced route to include disabled access

## **8.7 Hungate: public involvement on site**

We can offer opportunities for involvement at different levels and on different aspects of the

project. There are skilled and experienced people in the Hungate Community archaeology group and our own team of volunteers, who could assist with supervision, especially on the finds side.

Different elements of the preparation work would need to be based at Cromwell House and the ARC.

#### *8.7.1 Daytime: advance preparation (to 2005 / Week 4)*

We can offer opportunities for involvement in the course of the summer and autumn of 2004 for preparation work including:

- research for the information boards in the exhibition, on the walkways and self-guided routes, leaflets and website
- background research pulling material from the Oral history project, census records, burial accounts etc
- preparation of resource material (handling boxes, worksheet, activities etc) for school and children's activities
- preparation of reference material to have on site (bones, pots, building material etc)
- general clerical/co-ordination work

#### *8.7.2 Evenings and week-ends (from 2005 / Week 4)*

Other, later opportunities will include:

- some of the later stages of finds work including data and image inputting, use of reference collections to identify material.
- site data input
- activities videoed and material gathered for a TV programme on the project
- activities for special needs audiences

These will be dependent on discoveries with more activities on site in summer, in ARC in winter.

### **8.8 Hungate: trainee/volunteer involvement on site**

#### *8.8.1 Trainees*

*Block H* (2006 / Week 26 to 2006 / Week 39, thereafter annually to 2009 / Week 24). This block will be available for the full five years. The intention would be to create a St Leonard's-type training opportunity on this block subject to what is discovered.

The successful St Leonard's approach offers from one to fifteen day courses suited to all ages and abilities ([www.yorkarchaeology.co.uk/yordig](http://www.yorkarchaeology.co.uk/yordig)).

### 8.8.2 *Volunteers and finds work (from 2005 / Week 4 to 2010 / Week1)*

The activities described below should be advertised daily on a white board at the entry and/or exhibition indicating what will happen, where and what time. YAT staff members would supervise groups of volunteers doing the work and make it an opportunity to show and tell to the public/school parties.

#### finds processing

- finds washing, marking, bagging etc with suitable training and supervision from YAT staff and members of HCAG, volunteers etc.
- opportunities will be created for school groups to be involved with this - ie material kept with these groups in mind
- training should include the inputting of data (including images) onto IADB

#### first aid finds conservation

- tied up with finds processing above but focussing on the organic elements
- packaging and storage elements

#### environmental processing

- this will be done daily and visibly with proper training and supervision

#### building material processing, pottery spot-dating and recording and finds assessment

- this will be done regularly and visibly on site to allow for some discard on site

Finds processing will be going on more or less continuously when the site is operating and should be sited somewhere visible (with access to stores, water, drainage etc). We need an indoor and outdoor venue to cater for weather and season. Some activities could happen at the ARC

### 8.8.3 *Associated base level accommodation*

#### Requirements:

- Site offices including a 'clean' cabin for data input
- wet weather/winter - 1 portable accommodation unit for undertaking processing, 1 portable accommodation unit for finds during processing/temporary store
- fine weather/summer - outdoor area for finds processing c.10m x10m with trestle

tables

- under-cover area for outdoor all-season environmental processing 5m x 5m covered.

All details of the above to be specified. With regards to storage:

- Only finds in the course of processing would be stored on site. Other finds would go on a daily basis to the ARC.
- Remote wireless data entry would require use of one office at ARC for data input and other Hungate-related IT over the 5 year period.

### **8.9 Hungate: children's and school's activities (from 2006 Week 20)**

Schools projects aimed at different Key Stages, GCSEs, A and AS levels will be worked up including :

- the concept and the finds from 'town dump' ( and gas container) to explore modern issues of re-cycling, pollution, water quality etc for schools projects.
- environmental evidence from site will 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 modern Hungate.
- the excavated ground plan of part of a terrace of slum housing will 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 whisky jars'), poverty, diet, health etc.

#### **8.9.1 Associated base level accommodation**

Visible finds / environmental processing with selected public access to include finds/ environmental processing, first aid for finds, water source and drains. Site offices including a 'clean' cabin for data input. Details to be specified.

Other base level accommodation requirements include:

- wet weather/winter - 1 portable accommodation unit for undertaking processing, 1 portable accommodation unit for finds during processing/temporary store
- fine weather/summer - outdoor area for finds processing c.10m x10m with trestle tables
- under- cover area for outdoor all-season environmental processing 5m x 5m covered.

- (possibly) 10 x 10m under-cover area for school and other groups with chairs/benches (ie simple marquee) unless this can be done at the ARC (see below) - could be combined with the above

### **8.10 Hungate: Internet (from 2005 / Week 4)**

The web site would become the basis for the main publication and archive for the site. The Internet may be used as a vehicle to connect to:

- web pages including the information which will be on the graphics panels
- community (Oral history/forum) web pages
- an expanded web diary updated each week
- live IADB records so that the database (with images) can be interrogated from the start.
- A picture gallery of site shots/finds images
- on-line school resources/activities tied to activities on site

### **8.11 Hungate: additional Provision**

#### *8.11.1 Background*

The plan outlined above gives access to all elements of the population coupled to a powerful and proven marketing and information system. In any access plan it is essential, however, to be ready to make the most of exceptional interest and in the following section we outline what could be added to the facilities already being provided.

The long history of JORVIK and other attractions within the city shown a clear and consistent annual pattern which we should expect to be mirrored at Hungate. To an extent distortions away from this pattern of more than 10% in any upward trend in visitors to Hungate should indicate exceptional public interest.

It can, however, be difficult to gauge the significance of discoveries both in terms of their educational and visitor appeal. A useful set of criteria appear in Annex 4 of Planning Policy Guidance Note 16 (DoE 1990) which are the Secretary of State's criteria for scheduling ancient monuments. These criteria neatly sum up the archaeological and hence educational potential. More difficult to judge is the direct appeal of the remains themselves. It is clear that some issues not included within the Annex are important in assessing the likely public interest. In terms of attractiveness the better preserved a site and the number of high intrinsic value items or human remains discovered the greater the appeal. There is also some evidence (attendance versus date) that certain periods of remains have higher appeal to the public than others.

It is envisaged that the client, the client's agent, the City Archaeologist and YAT who will form

an Access Team, will monitor the performance of the Access Plan. Critical will be the visitor returns (including surveys) which will be collected in the same way as at JORVIK.

The Access Team will monitor for any unusual upward trend in visitor numbers and for exceptional discoveries. The team will then consider the need for additional facilities and YAT will draw up an appropriate plan for approval drawing on the elements listed below.

#### *8.11.2 Options*

New elements could include:

- specifically tailored viewing platform with cover to allow overview of remains. Extent and type dependent upon circumstances.
- web diary content development
- web camera
- once a month an open evening on site /at ARC to show the finds, discuss progress and invite discussion.
- combined open evenings with JORVIK
- Hungate material installed within JORVIK exhibition space
- additional potential use of ARC; closing ARC in some of the school holidays (especially during the summer) to make it an HQ for Hungate-related activities/ training courses.
- JORVIK Explorer's Club could have their own part of the to work on Saturday mornings and do the whole range of activities involved.
- a schools / YAC Dig

## **9. COST AND TIMETABLE**

Note in this version of the document no cost details are included as they are confidential. What follows is an outline of our approach to costing in relation to timetable

The project has been costed on the basis of information made available to YAT in December 2003 on the date at which and time for which each block and area will be available for archaeological work. It is presently assumed that fieldwork on the Hungate project will begin on January 2<sup>nd</sup> 2005 and last for five years. A summary timetable for each area or block of the fieldwork project is shown in the table below.

In the attached costs data there is:

- A costs summary in which a figure is given for each area or block and for the additional tasks of pre-pile probing, watching briefs, lift shaft excavations and

site services. The site services item includes a project 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 the site services item include finds assistants, finds supervisors, environmental sample processors and conservation staff. Included also under this item are running costs for the 'Barnitt's building', which as of December 2003 the Trust had understood would be available throughout most of the project for use as a headquarters for the site operations. At the time of compilation of this revision of the document it is understood that this will no longer be the case and a 'portable accommodation unit village' is envisaged as providing site accommodation.

- A schedule of costs based on the timetable given above giving a week by week cost for the project through the five years of fieldwork. Annual costs are thereafter given for the completion of the assessment and analysis.

The total cost for the archaeological programme is a fixed price at 2003/4 prices, but it is understood that some revision to take account of annual increases in the retail price index (RPI) will be the subject of further negotiation.

Area or Block	Start - Finish	Duration (weeks)
Sewer	2005/Week 20 - 2006/Week 5	38
Link tunnel Block C-E	2006/Week 35 - 2006/Week 41	7
Block D Evaluation x 3 12m x 12m	2005/Week 4 - 2005/Week 18	15
Block D 25m x 15m	2005/Week 21 - 2005/Week 40	20
Block D Roman Excav. <b>CONTINGENCY</b>	2005/Week 41 - 2006/Week 11	23
Block E 25m x 15m	2006/Week 20 - 2006/Week 29	10
Block F 40m x 12m	2006/Week 23 - 2006/Week 37	15
Block F Car park 30m x 18m	2009/Week 26 - 2009/Week 45	20
Focal Building	2006/Week 23 - 2006/Week 38	16
Block H Stage 1	2005/Week 2 - 2006/Week 24	75
Block H Stage 2, Training weeks	2006/Week 26 - 2009/Week 38	56
Block H Stage 2, Non-training weeks	2006/Week 40 - 2009/Week 52	127
Pre-pile probings	2005/Week 20 - 2006/Week 52	15
Watching Brief	2005/Week 2 - 2006/Week 40	21
Lift shafts excavation	2005/Week 11 - 2006/Week 50	32
Site Services	2005/Week 1 - 2009/Week 52	260

Table 1 Summary timetable for each area or block of the fieldwork project.

## 10. BIBLIOGRAPHY

Brinklow, D., Hall, R.A. Magilton J.R. and Donaghey, S., 1986. *Coney Street, Aldwark and Clementhorpe, Minor Sites and Roman Roads*, The Archaeology of York 6/1

Cranstone, D., 2003. 'From Newby Hall to navy camp', in Manby et al. (eds), 215 – 21

- Deetz, J., 1977. *In Small Things Forgotten* (New York)
- English Heritage, 2002. *Environmental Archaeology: A Guide to the Theory and Practice of Methods from Sampling and Recovery to Post-Excavation*
- FAS 2002. *Archaeological Evaluation : Former Union Gas Works, Palmer Lane*
- Finlayson, R., 2005. *Site of the Former Henly's Garage, Stonebow, York: An Assessment Report on an Archaeological Excavation*, YAT Field Report 2005/13
- Griffiths, M. 2002. *Environmental Statement Hungate, York, Technical Appendix D Archaeological Assessment*
- Hall, R.A., 2003. 'Yorkshire AD 700 – 1066' in Manby et al (eds), 171-80
- Hall A.R. and Kenward, H.K., 1990. *Environmental Evidence from the Colonia: General Accident and Rougier Street*, *The Archaeology of York* 14/6
- Hall, R.A. and Hunter Mann, K., 2002. *Medieval Urbanism in Coppergate: Refining a Townscape*, *The Archaeology of York* 10/6
- Hargrove, W., 1818. *History and Description of the Ancient City of York*
- Jones, R.F.J., 1984. 'The cemeteries of Roman York', in P.V. Addyman and V.E. Black (eds), *Archaeological Papers from York*, 34-42
- Kemp, R.L., 1996. *Anglian Settlement at 46-54 Fishergate*, *The Archaeology of York* 7/1
- Manby, T.G., Moorhouse, S. and Ottaway, P. (eds), 2003. *The Archaeology of Yorkshire: An Assessment at the Beginning of the 21<sup>st</sup> Century*, *Yorkshire Archaeol. Soc. Occ. Pap* 3
- Matthews, K.J., 2003. 'An archaeology of work: the example of 19<sup>th</sup> and 20<sup>th</sup> century Chester', in M. Nevell (ed.) 2003, 51-68
- Nevell, M. (ed.), 2003. *From Farmer to Factory Owner: Models, Methodology and Industrialisation: the Archaeology of the Industrial Revolution in North-west England*, *Archaeology North-west* 16
- Newman, R., 2001. *The Historical Archaeology of Britain*
- Nuttgens, P. (ed.), 2001. *The History of York* (Pickering)
- OS 1988. *Ordnance Survey Map of Anglo-Scandinavian and Medieval York*
- Ottaway, P., 2003. 'Roman Yorkshire: a rapid resource assessment', in Manby et al (eds) 125-149
- Ottaway, P., 2004. *Roman York*

- Ottaway, P. in prep. *Excavations on Blossom Street, at 16-22 Coppergate and Other Sites*, The Archaeology of York 6/2
- Radley, J. and Simms, C., 1970. *Yorkshire Flooding - Some Effects on Man and Nature* (York)
- Richards, J., 2001. *The Vicars Choral at York Minster: The College at Bedern*. The Archaeology of York 10/5
- Richardson, K.M., 1959. 'Excavations in Hungate, York', *Archaeol. J.* 116, 51-114
- Rollason, D.W., 1998. *Sources for York History*, The Archaeology of York 1.
- Rowntree, B. S., 1901. *Poverty : a Study of Town Life* (York)
- Royle, E., 2001. 'Nineteenth century York', in P. Nuttgens (ed.) 2001, 244 - 301
- RCHMY1, 1962. Royal Commission on Historical Monuments for England: *An Inventory of the Historic Monuments in the City of York: 1. Eburacum, Roman York*
- Sinclair, A., 2001. 'Eighteenth century York', in P. Nuttgens (ed.) 2001, 212-43
- Swan, V.G. and McBride, R.M., 2002. 'A Rhineland potter at the legionary fortress of York', in M. Aldhouse-Green and P. Webster, *Artefacts and Archaeology. Aspects of the Celtic and Roman World* (Cardiff), 190 – 234
- Tweddle, D., Moulden, J. and Logan, E. 1999. *Anglian York: A Survey of the Evidence*, The Archaeology of York 7/2
- VCHY Tillott, P.M. (ed.), 1961. *The Victoria County History of Yorkshire: The City of York* (London)
- Walker, J., Nevell, M. and Casella, E., 2003. 'Introduction: models, methodology and industrial archaeology', in M. Nevell (ed.) 2003, 11-16
- Wenham, L.P., 1968. *The Romano-British Cemetery at Trentholme Drive York*, Ministry of Public Buildings and Works Archaeol. Rep. 5

## 11. ACKNOWLEDGEMENTS

Report Production	Russell Marwood
Illustrations	Lesley Collett
Photography	Michael Andrews