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**ARCHAEOLOGICAL
EVALUATION OF LAND AT
STAR LANE, STAMFORD
LINCOLNSHIRE
(SSL03)**



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ARCHAEOLOGICAL
PROJECT
SERVICES

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Highways & Planning
Directorate



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**ARCHAEOLOGICAL
EVALUATION OF LAND AT
STAR LANE, STAMFORD
LINCOLNSHIRE
(SSL03)**

Work Undertaken For

Wilson and Heath Ltd

August 2003

Report Compiled by
Thomas Bradley-Lovekin MA (PIFA)

National Grid Reference: TF 0318 0727

A.P.S. Report No. 122/03


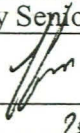
ARCHAEOLOGICAL PROJECT SERVICES



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Iron-smelting slag and associated finds	Jane Cowgill
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Date: 28/08/03	Date: 28-08-03

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1. SUMMARY

An archaeological evaluation was undertaken on land at Star Lane, Stamford, Lincolnshire, in order to assess the likely impact of a proposed residential development on any buried remains.

The development area is archaeologically sensitive as it is located in the heart of the historic town of Stamford, within the area of the Danish burh and close to the proposed site of the medieval church of St. Andrew. An archaeological evaluation of another site, approximately 50m west of the proposed development identified a medieval pit containing metalworking waste and sherds of Late Saxon pottery.

A single evaluation trench, measuring 3 x 1.25m, was excavated within a small yard that lies to the east of three standing buildings, adjacent to the site's frontage with Star Lane.

Safety considerations meant that it was not possible to excavate the evaluation trench down to the level of the natural deposits, due to the depth of the overlying archaeological stratigraphy. Twelve medieval features and deposits were identified, eight of which were associated with iron-smelting, which is of high archaeological potential. Later medieval features included a levelling deposit and a pit. Six post-medieval deposits were identified including a deposit of slate and ceramic roof tiles which were probably related to the demolition of a medieval building.

Although two recent services ran through the evaluation trench, these appear to have caused comparatively little disturbance to the underlying archaeological stratigraphy.

2. INTRODUCTION

2.1 Definition of an Evaluation

An archaeological evaluation is defined as, 'a limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site. If such archaeological remains are present Field Evaluation defines their character and extent, quality and preservation, and it enables an assessment of their worth in a local, regional, national or international context as appropriate' (IFA 1997).

2.2 Planning Background

Archaeological Project Services (APS) was commissioned by Wilson and Heath Ltd to undertake the archaeological evaluation of the site in advance of an intended application for residential development by their client Mr. Malcom Branwood. The evaluation was undertaken in accordance with a specification prepared by APS, based on a brief issued by the South Kesteven Community Archaeologist, Jenny Young. The work was undertaken between the 23rd of June and the 1st of July 2003.

2.3 Topography and Geology

Stamford is situated 63km south of Lincoln and 17km northwest of Peterborough in the South Kesteven District of Lincolnshire (Fig. 1). The site lies within the centre of the town and forms a roughly rectangular plot of approximately 200 square metres fronting on to the west side of Star Lane, between Broad Street and the High Street, centred on National Grid Reference TF 0318 1727 (Fig.3). The site is currently occupied by a row of three disused buildings. The evaluation trench was placed within a

narrow open space between these buildings and the street front (Plate 1).

The site lies at c.36m OD on the south facing slope of the Welland Valley. Soils at the site have not been mapped as the area is urban, but on the basis of surrounding areas are probably Elmton 3 calcareous fine loamy soils over Upper Lincolnshire Limestone (Hodge et al. 1984, 181)

2.4 Archaeological Setting

Although no evidence of prehistoric activity has been identified within Stamford itself, prehistoric sites and artefacts are well documented in other areas of the Welland valley.

Ermine Street, the major Roman road from London to Lincoln, crossed the River Welland just west of Stamford. Although evidence of Roman activity within the town itself is limited, a Roman cemetery and possibly an associated crematorium has been identified (Tann, 2000).

Documentary evidence suggests that there has been a settlement in Stamford since at least the end of the 9th century AD when the town was a Danish settlement, one of the five boroughs of the Danelaw. A reference in 918 indicates that the Danish *burh* lay to the north of the River Welland. Although it has been suggested that the development area lies within the northeast corner of the Danish *burh* (Mahany, 1982,8), this hypothesis was based upon the configuration of Star Lane and Broad Street, and is not currently supported by archaeological evidence.

Previously known as Steanford and Stanford, the place name Stamford is derived from the Old English *stan* and *ford*, meaning 'stony ford'.

Although the Saxon borough extended along both banks of the river, the nucleus of the settlement remained to the north of the river within the area of the former Danish *burh* (Fig.4). During the late Saxon period the site lay within an industrial area, primarily concerned with iron smelting. Excavations on the High Street the 1960's, approximately 80m to the southwest of the site, revealed a working surface, where iron ore was roasted, overlain by two furnaces. The furnaces were sealed by dumps of waste material from other furnaces which presumably lay close-by (Burchard 1982, 105).

The Domesday Survey of 1086 refers Stamford as a Royal Borough and unusually for a town, records that it was split between two counties. The northern five wards lay in Lincolnshire, whilst the sixth lay '*across the bridge*' in Northamptonshire. Following the conquest a royal castle was built in the Lincolnshire part of the town (Cope-Faulkner, 2001).

An evaluation was undertaken by APS of land to the rear of Star Lane in 2001, where a single trench was excavated 50m west of the present site. This revealed deposits of slag and iron ore which immediately overlay natural clay (Snee, 2001). Although the presence of both roasted ore and slag indicates that iron smelting took place on the site, it was not clear, due to truncation of the deposits, whether the material represented *in situ* remains of iron smelting or the dumping of material from elsewhere. Although these deposits were undated, the fact that they were cut by a 13th or 14th century pit suggests that the iron smelting preceded this period.

The medieval town expanded upon the Danish and Late Saxon *burh* and its boundaries were probably formalised by the early 13th century when the town wall was constructed. The development site lay

within the walled area (Fig.5). Although the church of St Andrew stood to the north of the site neither its precise location or the extent of its graveyard are known. The Sites and Monuments Record indicates that the church possibly stood at the junction of Broad Street and Star Lane, approximately 35m to the north of the present site. Although it has been suggested that the church stood to the rear of Star Lane, no trace of it was found during the 2001 evaluation (Hartley and Rogers, 1974 and Snee, 2001). The parish of St Andrews was amalgamated with that of St Michael's in 1546 and the church was demolished after this date.

The earliest known map of Stamford is Speed's plan of c.1600, which clearly shows the junction of Star Lane and Broad Street. Although buildings are depicted standing on the site, it is possible that the map is schematic. Knipe's map of 1833 shows the site as occupied by open ground although a building stood on the St Paul's Street frontage (Cope-Faulkner, 2001).

3. AIMS

The aim of the evaluation was to gather information to establish the presence or absence, extent, condition, character, quality and date of any archaeological deposits in order to enable the archaeological curator to formulate a policy for the management of archaeological resources present on the site

4. METHODS

4.1 Trial Trenching

A single trial trench, measuring 3m x 1.25m was excavated within a small yard, which lies to the east of the building, immediately adjacent to the street front

(Fig. 6). The trench was aligned northwest to southeast. The positioning of the trench was severely constrained by the presence a drain run in the southern portion of the yard and the need to protect the adjacent buildings, which meant that no excavation could take place within a metre of their foundations. Further services, an east-west tar coated pipe (not detected by Cable detector scanner) and a north south ceramic drain, became evident during the initial stages of excavation, limiting investigations within the trial trench to a 2.35 x 1.25m area (Fig. 7). The ceramic drain, which ran through the centre of the trench was left *in situ* (Plate 3).

Due to the limited site access the trench was excavated entirely by hand. Removal of the concrete yard surface was undertaken using a hand operated hydraulic breaker.

Each deposit identified during the evaluation was allocated a unique reference number (context number) with an individual written description. A photographic record was compiled. Sections were drawn at a scale of 1:10 and plans at a scale of 1:20. Recording of deposits encountered was undertaken according to standard Archaeological Project Services practice.

The location of the trial trench was surveyed in relation to fixed points on boundaries and on existing buildings. Datum readings taken during the evaluation were related to a fixed Ordnance Survey benchmark located at No. 21 Broad Street.

4.2 Post-excavation

Following excavation, all records were checked and ordered to ensure that they constituted a complete Level II archive and a stratigraphic matrix of all identified deposits was produced. Artefacts

recovered from excavated deposits were examined and a period date assigned where possible. A list of all contexts and interpretations appears as Appendix 2. Context numbers are identified in the text by brackets. An equals sign between context numbers indicates that the contexts once formed a single layer or feature. Phasing was based on artefact dating and the nature of the deposits and recognisable relationships between them.

5. RESULTS

5.1 Description of the results

Three phases of deposition and activity were identified: Medieval, post-medieval and recent. No natural deposits were exposed as these lay below the level to which the trench could be safely excavated.

Phase 1: Medieval deposits

Phase 2: Post-Medieval deposits

Phase 3: Recent deposits

Archaeological contexts are described below. The numbers in brackets are the context numbers assigned in the field.

5.2 Phase 1: Medieval deposits

Twelve medieval deposits were identified during the investigation, eight of which were derived from iron-smelting activity.

Constraints of the services limited excavation of the iron-smelting deposits to a 1.2 x 0.50m sondage located in the southwest corner of the trench (Fig. 7) (Plate 6).

The earliest deposit identified was a compacted surface of limestone, mortar, fired clay and 20% slag (020) (Fig's 8, 9 and 10) (Plate 7). Predominantly the slag fragments were lying smooth side up and formed a continuous plate, indicating flow

across (020) in a molten state before setting *in situ*. This suggests an iron-smelting furnace in close proximity, possibly just to the south of the evaluation trench (Cowgill, Appendix 4, p4)

A thin lens of loose very dark grey ash (023) was compacted into the northern portion of surface (020) (Fig. 9) and sealed by (022), a 0.21m thick deposit of soft, slag rich, greyish brown sandy silt. This contained slag, pottery of 10th-12th and 13th-15th century date and a fragment of glazed 12th-13th century ridge tile (Appendix 3). A single fragment of 15th to 17th century pottery was also recovered but this is likely to be intrusive.

A shallow, 0.11m deep, scoop ([026]) cut through (022) (Fig. 10, Section 2). It sloped up to the north and contained a compact mixture of slag and greyish brown sandy silt (021) (Fig. 8). Grit-sized fragments of heat effected limestone were also present and the context possibly represents a tapping deposit.

Deposit (021) was sealed by a 0.13m deep layer of loose greyish brown sandy silt (019), rich in ash and slag and containing 10th to 12th century pottery (Appendix 3). Overlying (019) was a 0.36m deep spread of loose, slightly maroon red, roasted ore dust (015) (Plate 6). This material, known as fines, had a course texture, similar to sand (Cowgill *pers comm*) and contained a quantity of 10th to 12th century (Appendix 3). The fines layer was sealed by a 0.12m thick deposit of loose greyish brown ashy silt (018), comprising 30-40% slag. This was sealed by a 0.23m deep deposit of friable pale yellowish brown clayey sand and gravel (012) (Plate 5), possibly representing levelling subsequent to the demise of the iron-working industry, probably during the 13th to 15th centuries.

A friable buff yellowish brown sandy silt clay (011) was recorded in a 0.80m x

0.40m sondage, excavated in the northeast corner of the trench (Fig. 10) (Plate 4). Four fragments of 10th to 13th century pottery were recovered from the deposit, along with a single sherd of intrusive 15th to 17th century pot. Deposit (011) was similar to (012) and it is possible that they represent the same phase of levelling activity.

A flat-based pit [016] cut through (012) (Fig. 10, Section 2), measured 0.65m in diameter, 0.58m in depth and was filled with a mixture light greyish brown sandy silt and pale yellowish brown clayey sand (017), from which 10th to 12th century pottery was recovered.

5.3 Phase 2: Post-medieval deposits

Five post-medieval deposits were identified during the investigation.

Deposit (011) was sealed by a 0.08m thick deposit of soft greyish brown sandy silty clay (025), overlain by a greyish brown silty clay (010). The date of these deposits is unknown, due to the absence of artifacts, and it is possible that they are of medieval date, but more likely of post medieval date. Layer (010) was overlain by (008), a 0.21m thick mixture of greyish brown clayey silt (approx 70%) and broken Collyweston roof tile (30%) (Fig.10) (Plate 2). Fragments of glazed 13th to 14th century ceramic roof tile were found within this rubble along with 10th to 16th century pottery (Appendix 3).

Along the eastern side of the trench, rubble deposit (008), was sealed by a 0.20m thick layer of soft, greyish brown silty clay (007), from which 13th to 17th century pottery was recovered. This was in turn sealed by a 0.30m deep deposit of soft greyish brown silty clay (006), also recorded in the western portion of the trench as (009), at a thickness of 0.53m.

The finds recovered from (006)=(009) date from the 12th to 16th centuries.

5.4 Phase 3: Recent deposits

Four recent services, deposits and surfaces were identified during the investigation.

The latest post-medieval deposit (006=009), was sealed by a 0.23m thick layer of dark greyish brown sandy clay (002) containing 20th century material and lying immediately beneath the present yard surface (001). The thickness of the concrete slabs forming the surface varied from between 0.08 and 0.16m. Two recent services; a north/ south ceramic drain (004) and an east/ west tar coated pipe (003) were cut through (002). The tar coated pipe was not detected by the Cable detector scanner, but may have contained a disconnected electricity cable.

6. DISCUSSION

Well preserved deeply stratified medieval and post-medieval urban deposits survive within the area of the proposed development, to a depth of 1.24m within the evaluation trench. Post-medieval deposits occur at 35.27m O.D, 0.37m below the level of the present yard surface. The surface of the medieval deposits lay at 34.80m O.D, 0.76m below present ground level. Medieval iron-smelting deposits extended below the lower limit of the excavation at 34.03m O.D, 1.43m below present ground level.

Archaeological deposits were found to be largely unaffected by recent services as these lay only 0.57 to 0.75m below the present yard surface. However, it is likely that the archaeological deposits are truncated to a greater degree elsewhere in the site, most notably by the foundation trenches for the standing buildings to the west and within the vicinity of a drain

cover, located approximately 1.5m south of the trench.

The date of the earliest occupation of the site is unknown as safety considerations prevented investigation of the archaeological sequence to the depth of the natural deposits. However, the quantity and quality of the 10th to 12th century pottery recovered, indicates that occupation was established by this period. Although most of the artefacts recovered from the iron-smelting deposits date to the 10th to 12th century, three of the finds recovered from (022) were of later date. Two of these finds, a fragment of 12th – 13th century ceramic roof tile and a sherd of 13th to 15th century pot, may be *insitu*. However, it is extremely unlikely that the 15th to 17th century pot sherd relates to this context suggesting a limited degree of stratigraphic disturbance, perhaps beneath the recent drain (004). The iron-working deposits were sealed by a make up deposit (012), dated to the 12th-15th century, suggesting the final phases of iron working on the site occurred during the 13th century.

Although, Stamford is known to have had an extensive iron industry during the Late Saxon and medieval period, our understanding of it is derived largely from deposits of slag waste, often found during archaeological investigations in the town. It is believed that only one furnace has been recorded during a controlled archaeological investigation in Stamford, excavated approximately 40m to the southwest of the proposed development at 32-34 High Street in 1963-4 (Burchard, 1982).

The High Street furnace had a D-shaped form, unique in the country, as most were circular in plan. The furnace cut through natural clay and was sealed by layers of roasted ore dust (fines) and ashy charcoal, similar to the deposits encountered in this

evaluation, the main fines layer being uppermost in the sequence on both sites (Cowgill, Appendix 4). Fragments of furnace structure were also recovered during the evaluation from contexts (012, 017 and 018). This suggests that an iron-smelting furnace stood within the development area, possibly just to the south of the evaluation trench.

For a more detailed review of iron-smelting slag recovered from these deposits please refer to Jane Cowgill's catalogue and report (Appendix 4)

Although it has been suggested that the church of St Andrew stood to the rear of Star Lane (Hartley and Rogers, 2001), no trace of it was found during either this or the 2001 evaluation (Snee, 2001). Indeed, given the presence of iron-smelting activity, it is unlikely that the church stood in this area.

Stamford is known to have been a major centre for pottery production during the Saxo-Norman (10th to 12th century) period. Analysis of the pottery assemblage has revealed a high proportion of rouletted 10th to 12th century Stamford ware rims. None of the pieces are obvious wasters, although these are often not obvious in Stamford wares, but neither do these rouletted rims exhibit signs of use. It is possible that they derive from a kiln in the vicinity that specialised in roulette decorated forms (Taylor, Appendix 3). Previous research on the Stamford pottery industry indicates that certain kilns specialised in certain styles of product. It is therefore possible that pottery manufacture took place within the vicinity of the proposed development during the Saxo-Norman period.

The spread of collapsed roofing material (008), recorded in the eastern portion of the trench and evidently extending beyond it, contained fragments of both Collyweston slate and glazed ceramic roof

tiles. The ceramic tiles were produced in South Lincolnshire (Bourne) and Northamptonshire (Stanion-Lyveden) and date from the 12th to 14th century, although pottery recovered from (008) was mostly of 15th -16th century date. Although no evidence of structures were identified within the limited area of the evaluation trench it is unlikely that (008) was spread to far from it's source. It is therefore likely that a medieval stone roofed structure stood within the immediate vicinity of the site, the presence of glazed ridge tiles indicates that it had relatively high status. The pottery evidence suggests that the building was demolished during the 15th or 16th centuries.

7. ASSESSMENT OF POTENTIAL

For assessment of significance the Secretary of State's criteria for scheduling of ancient monuments has been used (DoE 1990, Annex 4; Appendix 4)

i. Period

Deeply stratified deposits and features of medieval and post-medieval date were identified. These included clear evidence of iron-smelting on the site during the medieval period.

ii. Rarity

Evidence of early iron-working is rare nationally. Evidence for medieval iron working is more common in Stamford and it is clear that iron smelting was a major industry within and around the town. It has been suggested that the Stamford industry developed to an extent that is not paralleled in any other town in England (Cowgill, Appendix 4, p4). The fact that only a single atypical furnace has been excavated in Stamford, increases the rarity value of any furnace that may be located within the proposed development area.

iii. Documentation

A number of archaeological investigations, both field and desk based, have previously been undertaken and reported. Additionally records of archaeological sites and finds made in the Stamford area are kept in the Lincolnshire Sites and Monuments Record and the files of the Community Archaeologist for South Kesteven.

iv. Group value

Considered in isolation the iron-smelting deposits identified during this evaluation are of low group value as they are likely to relate to a single phase of activity and usage. The group value may increase however, if they are considered in relation to other iron-smelting deposits known within the Stamford area.

v. Survival and condition

The medieval deposits, particularly those associated with iron-smelting lay below the level of the services and appeared to be well preserved. The post-medieval deposits were largely undisturbed by the recent services, although later post-medieval deposits may have been truncated by the current yard surface. However, it has to be recognised that the evaluation was restricted by the presence of recent services and standing buildings. It likely that away from the area of the evaluation trench, the archaeological deposits are disturbed by these features. The nature and extent of this truncation could not be investigated on safety grounds.

vi. Fragility/ Vulnerability

All archaeological features are fragile and vulnerable to any groundworks penetrating the soil. However the vulnerability of the deposits on this site is dependent upon the nature and extent of the groundworks required by the proposed development. Within the evaluation trench, the upper levels of the iron-smelting deposits lay at

34.42m O.D. 1.04m below the pre-development ground surface.

vii. Diversity

Surfaces and deposits relating to iron-smelting activity were identified along with evidence of possible pottery manufacture within the area. Later demolition and make-up deposits indicate that a stone-built medieval building stood within the vicinity. However no evidence of *in situ* domestic occupation was found within the trench. Functional diversity is therefore moderate to high.

viii. Potential

The iron-smelting deposits offer an opportunity to investigate a well preserved stratified sequence of deposits and artefacts using modern techniques of excavation and scientific analysis. This has the potential to provide information on the organisation, duration, the technological processes associated with production, and the metallurgical composition of both the product (iron) and waste (slag). Analysis of raw materials such as iron ore and charcoal may cast light on the manner and organisation of their supply. The iron smelting deposits are therefore of high archaeological potential.

The post-medieval demolition and make-up deposits are common on stratified urban sites and are therefore of moderate to low archaeological potential.

The moderately large collection of medieval and post-medieval pottery is of moderate to high local potential and significance. Analysis of the 10th-12th century pottery assemblage suggests that pottery production may have taken place the vicinity.

8. CONCLUSIONS

Evaluation of the proposed development site was undertaken to assist the determination of a planning application as the site was of archaeological significance, located within the suggested area of the Danish *burh*, which later became the core of both the late Saxon borough and the medieval town. Previous investigations within the vicinity of Star Lane have shown that that industrial activity, primarily iron smelting, took place there during the late Saxon period.

Safety considerations prevented excavation to the level of the natural deposits, due to the depth of the overlying archaeological stratigraphy.

Twelve medieval features and deposits were identified, eight of which were associated with iron-smelting. The iron-smelting deposits included a working surface and a dump of iron ore, crushed and prepared for use. Later medieval features included a levelling deposit and a pit.

Six post-medieval deposits were identified, including a deposit of slate and ceramic roof tiles that were probably associated with the demolition of a medieval building.

Although four recent services, deposits and surfaces were identified, these appear to have caused comparatively little disturbance to the underlying archaeological stratigraphy.

9. ACKNOWLEDGEMENTS

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provided assistance. The project was coordinated by Dale Trimble; the report was edited by Tom Lane.

10. PERSONNEL

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CAD Illustration: Thomas Bradley-Lovekin and Paul Cope-Faulkner
Post-excavation Analyst: Thomas Bradley-Lovekin

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12. ABBREVIATIONS

APS Archaeological Project Services
IFA Institute of Field Archaeologists
SMR Sites and Monuments Record

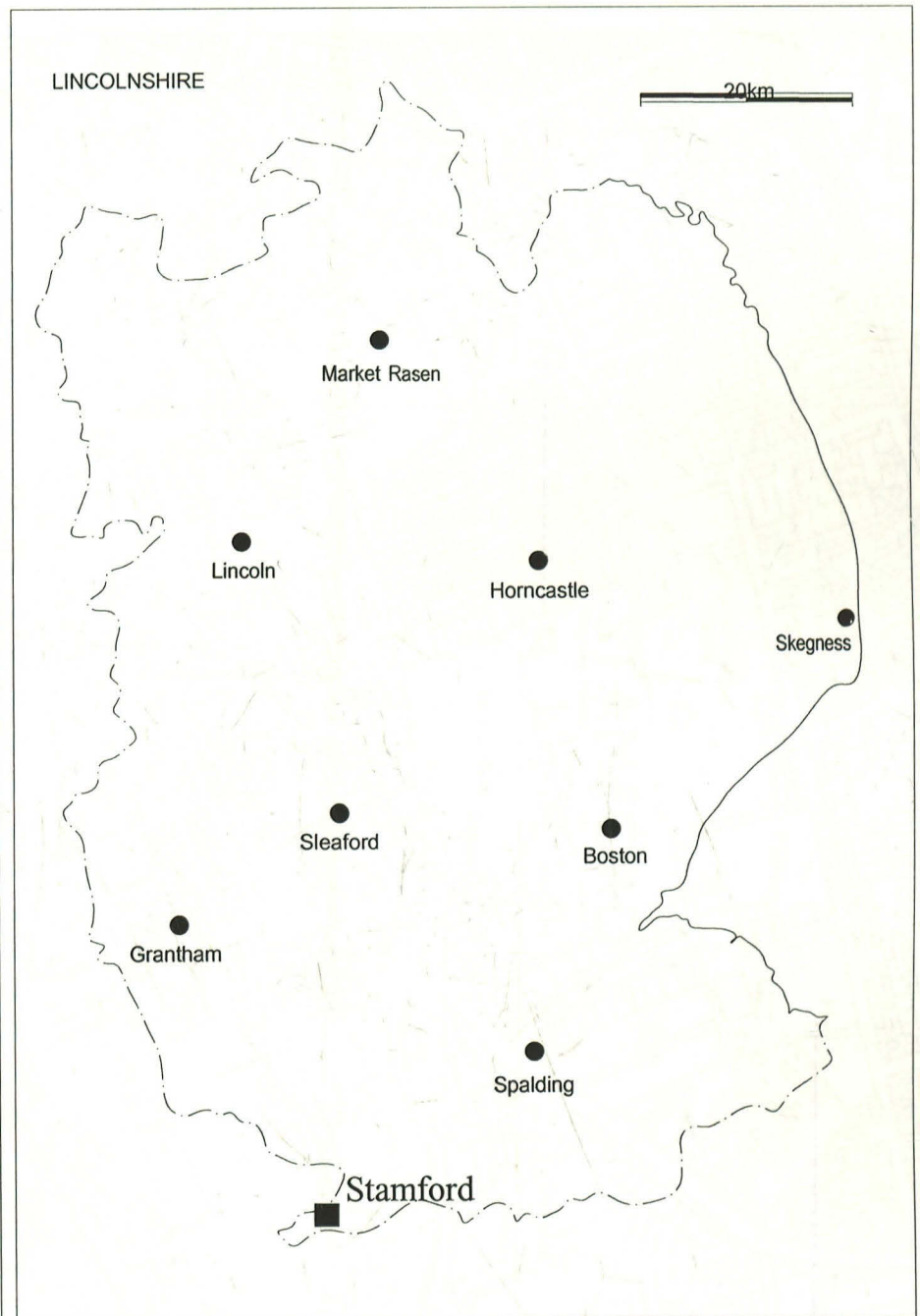
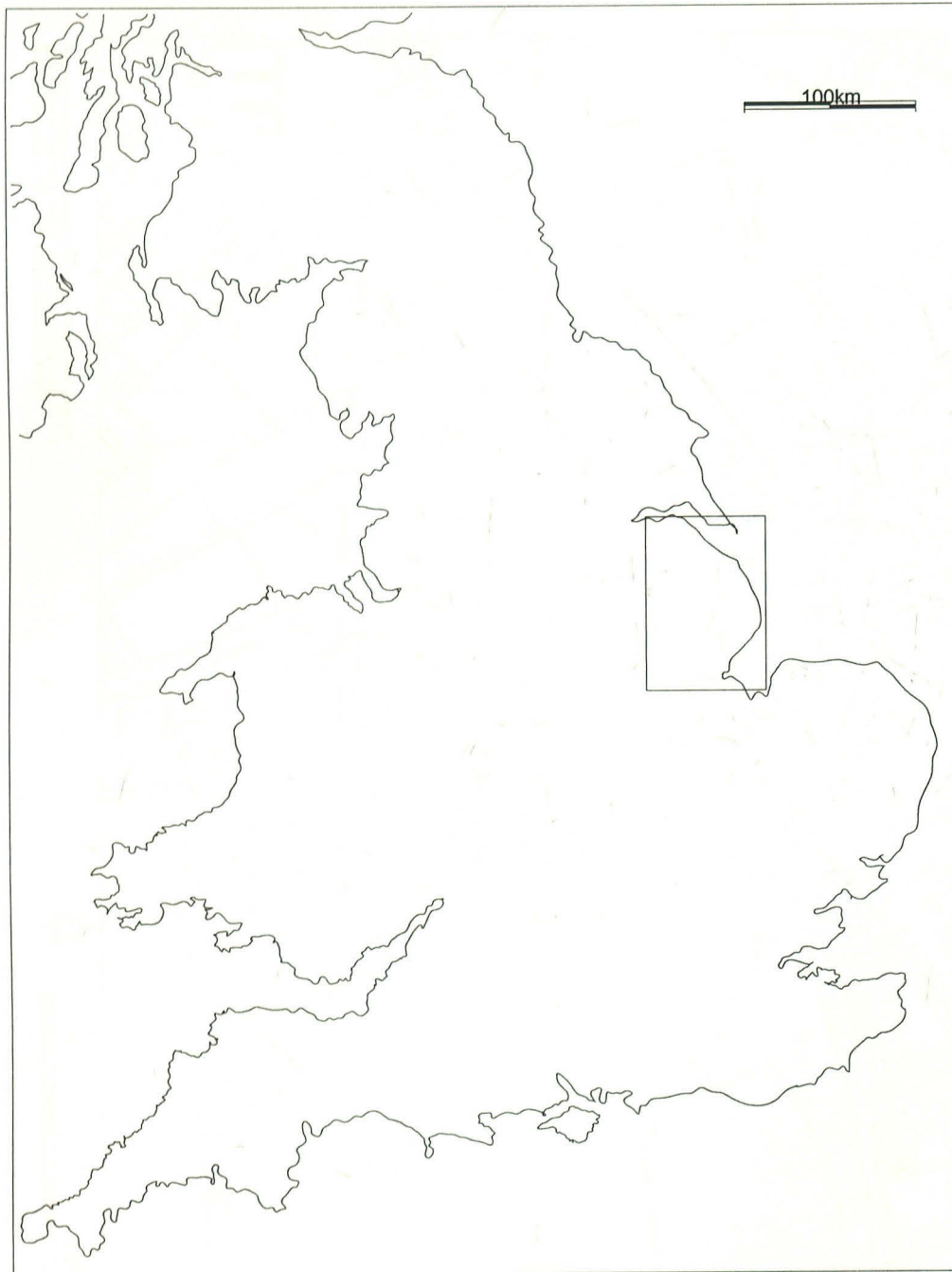
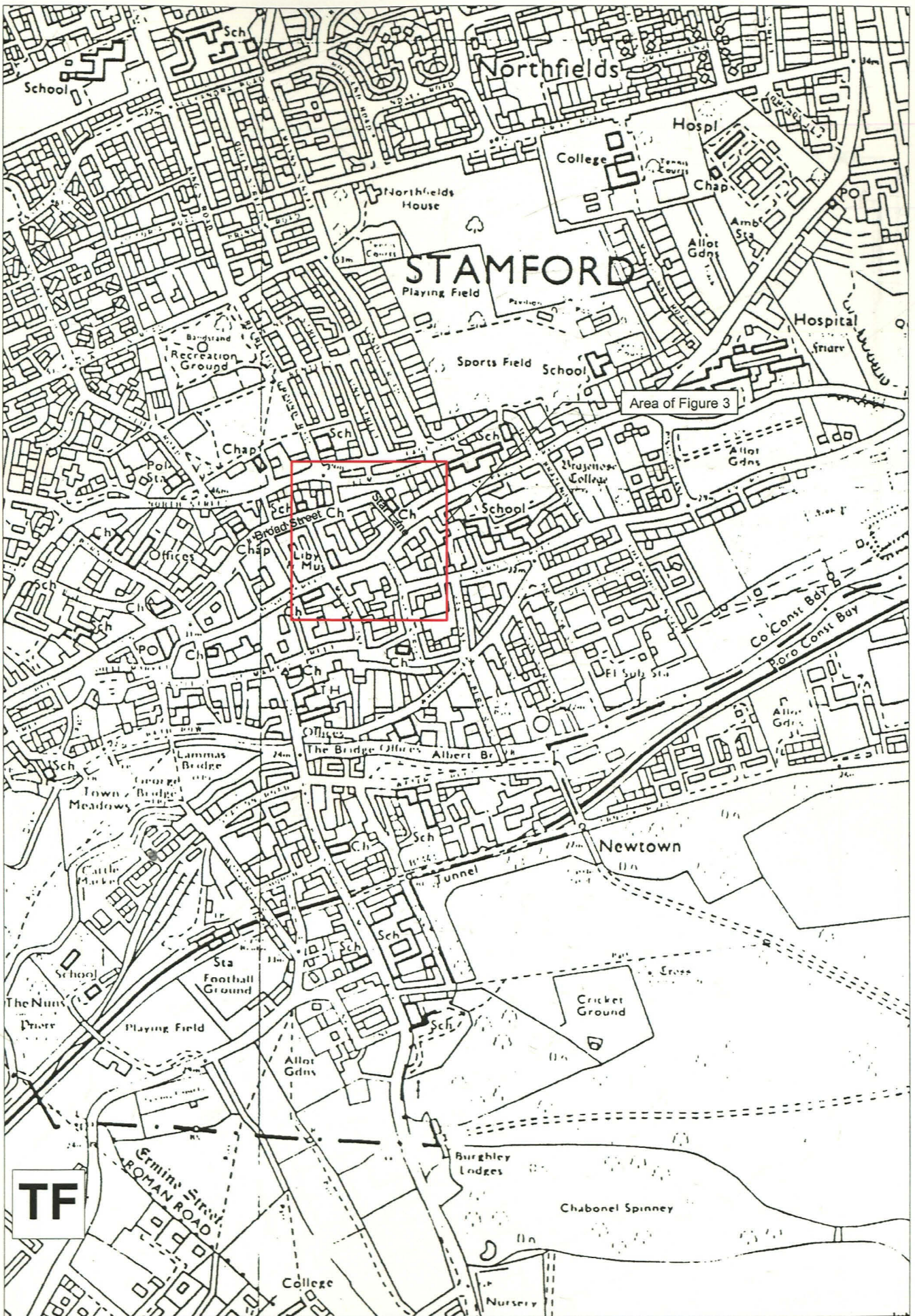


Figure 1 - General Location Plan.



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Figure 2 Site location plan

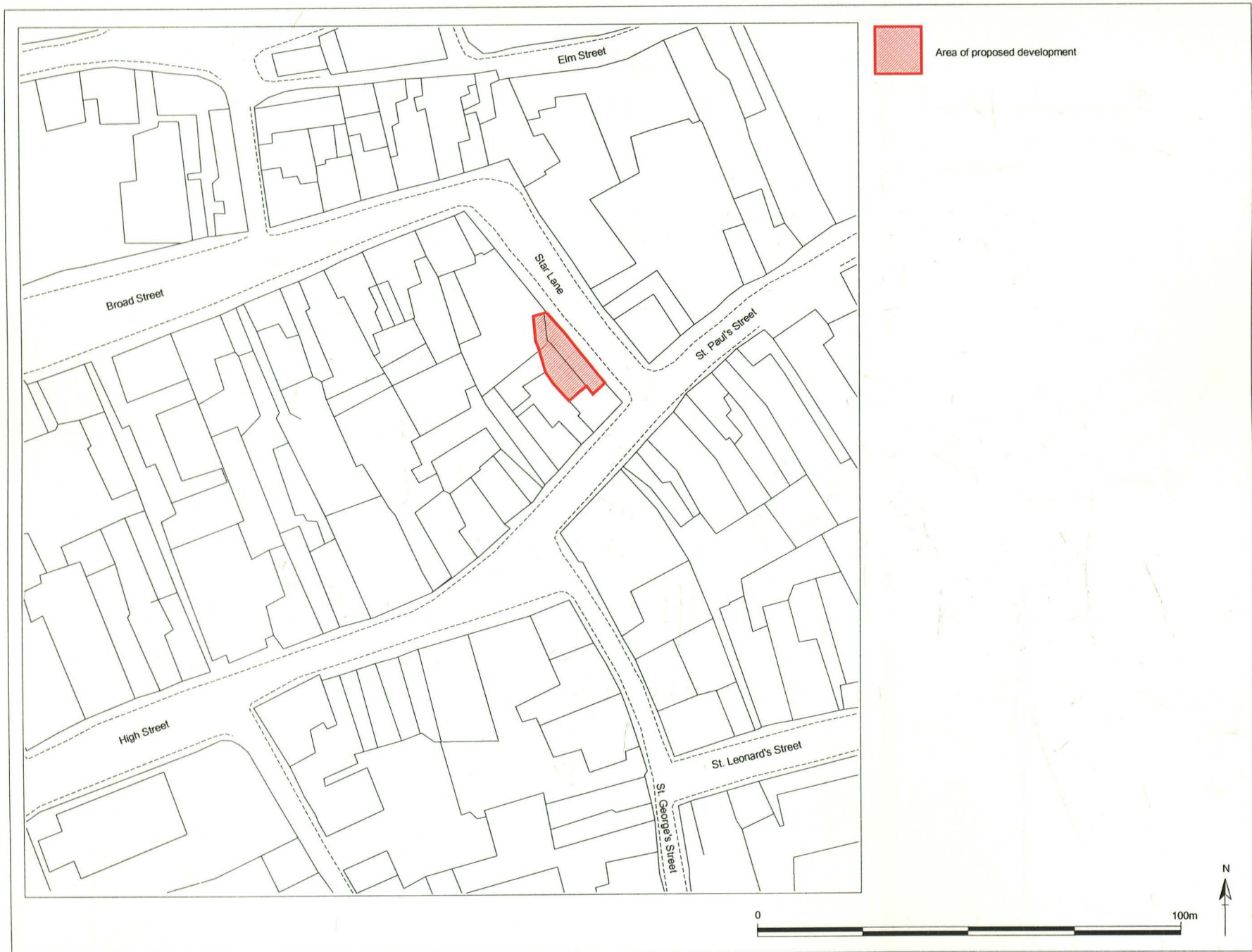


Figure 3 - The location of the proposed development

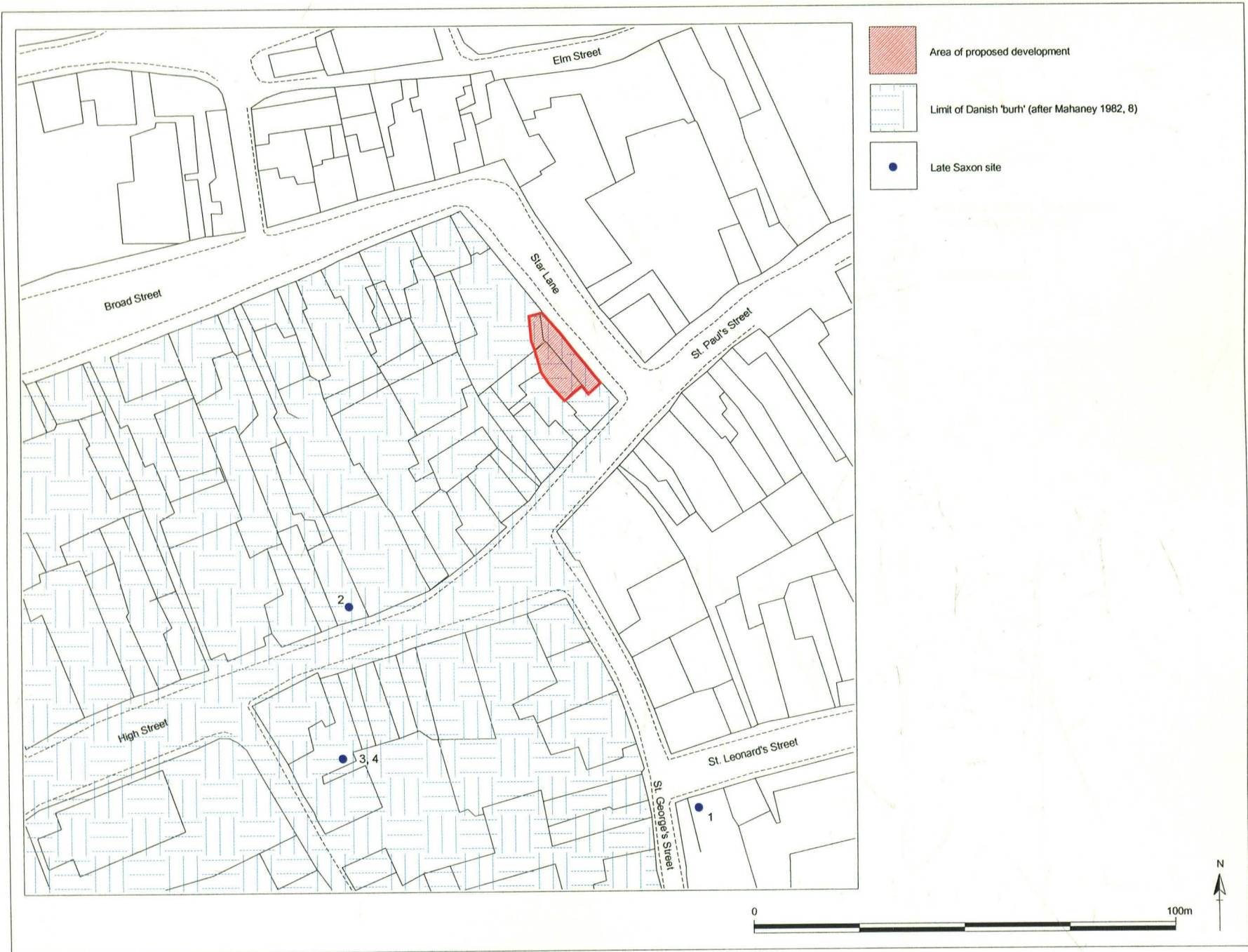


Figure 4 - Plan showing Late Saxon archaeology, known or conjectured, within vicinity of the site.

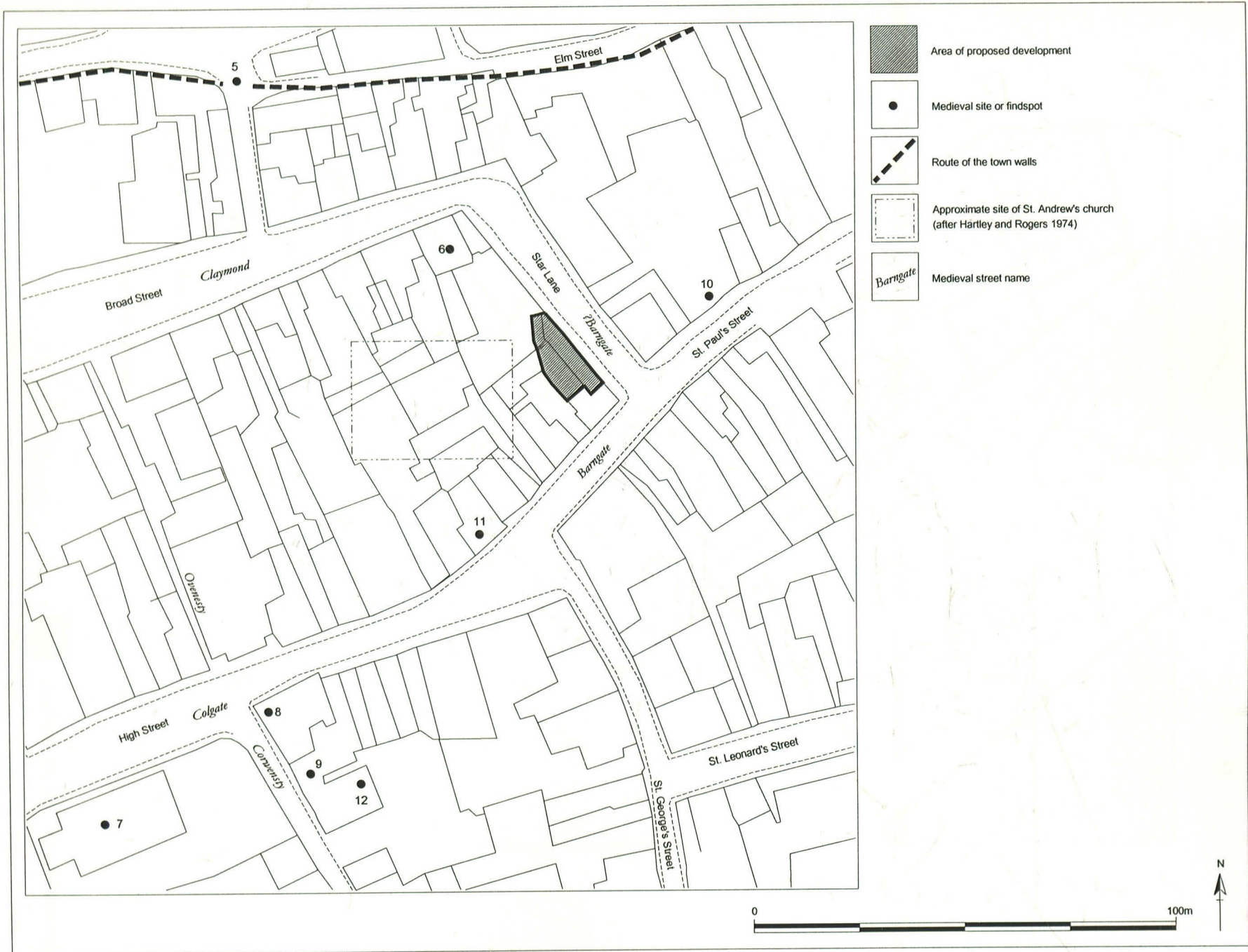
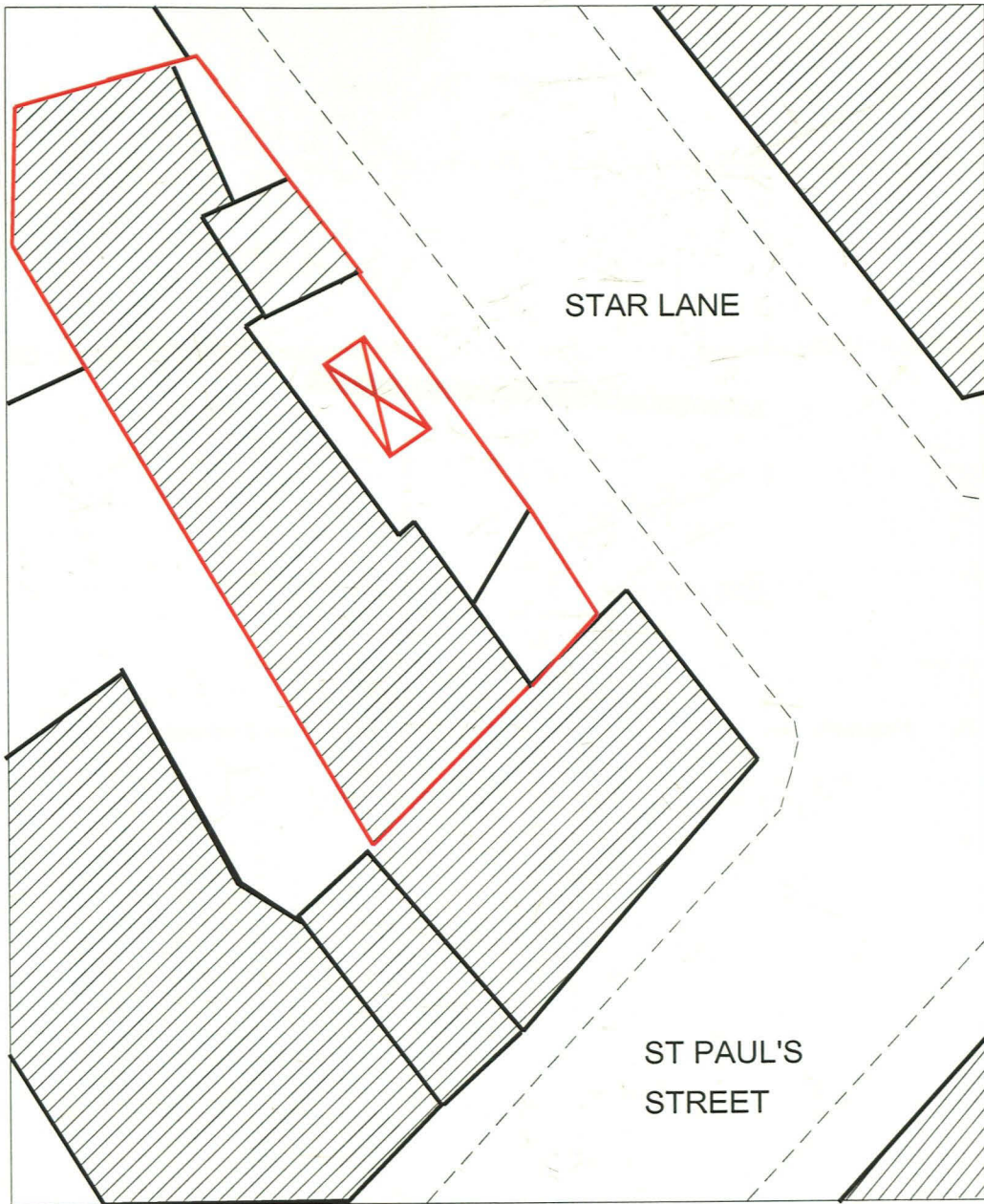


Figure 5 - Plan showing medieval archaeology, known or conjectured, within vicinity of site



-  Existing buildings
-  Evaluation Trench
-  Proposed development area



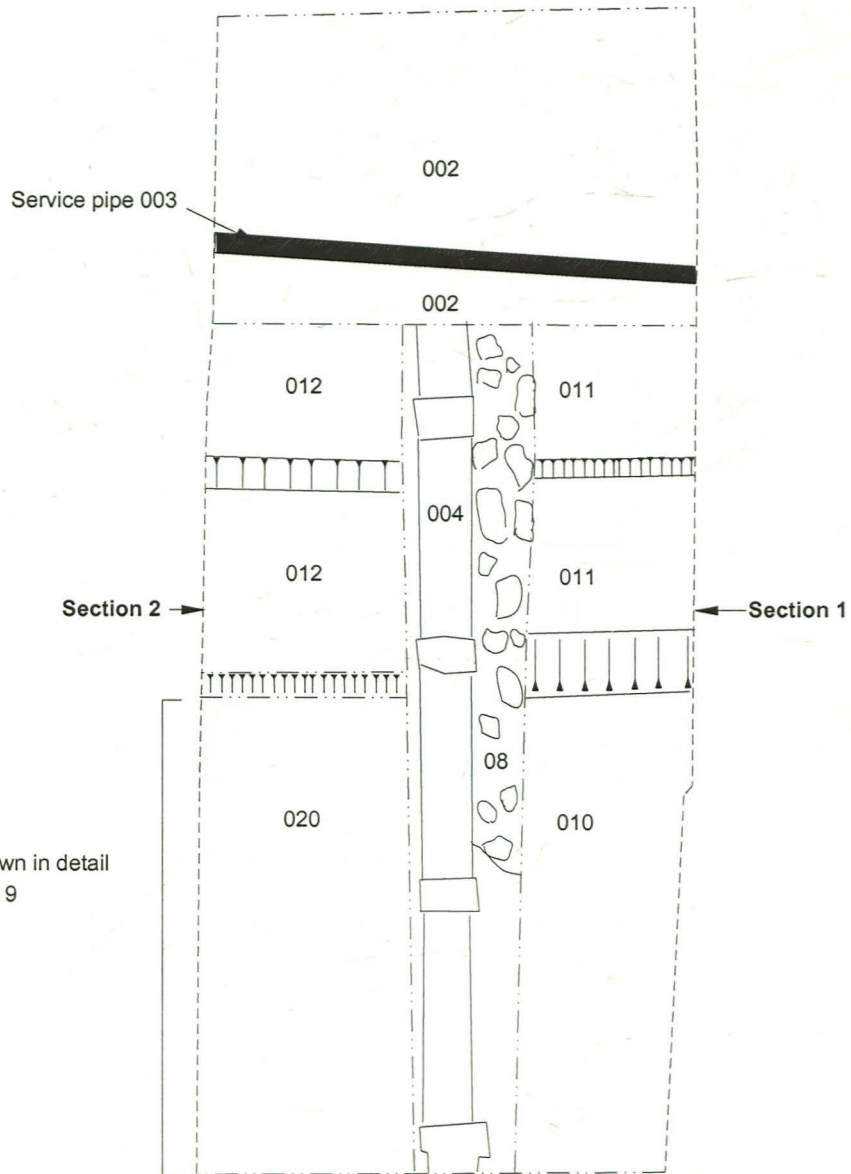
Archaeological Project Services

Project Name: Stamford Star Lane SSL 03

Scale 1:200

Drawn by: TBL Report No: 122/03

Figure 6. Trench location plan



Sondage shown in detail
in Fig's 8 and 9



Archaeological Project Services

Project Name: Stamford Star Lane SSL03

Scale 1:20

Drawn by:TBL

Report No:122/03

Figure 7. Plan of the evaluation trench

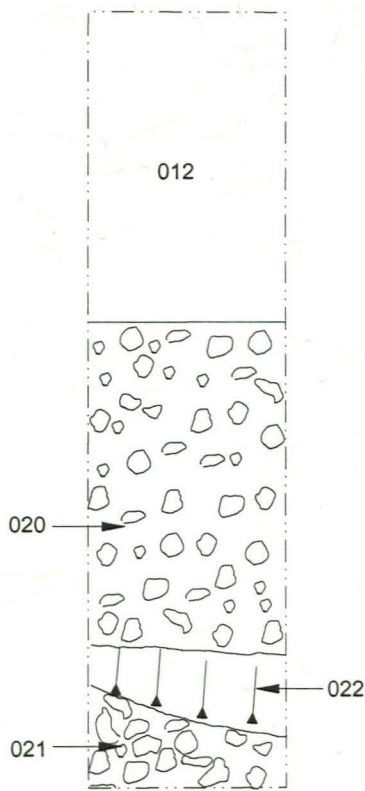


Figure 8



Figure 9



Archaeological Project Services

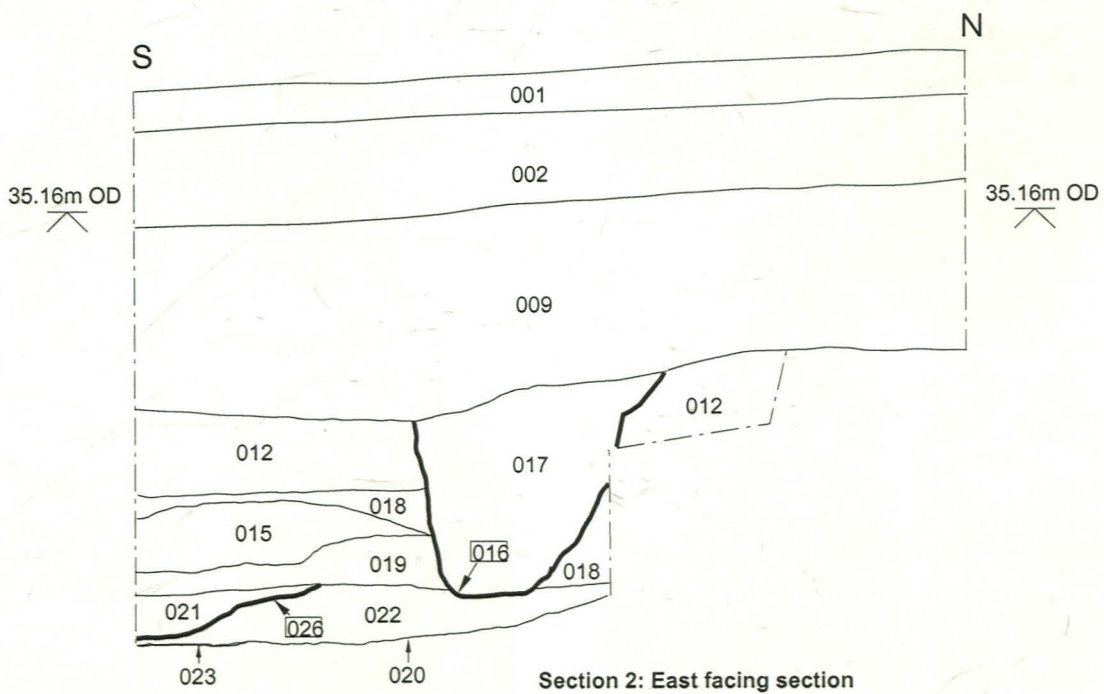
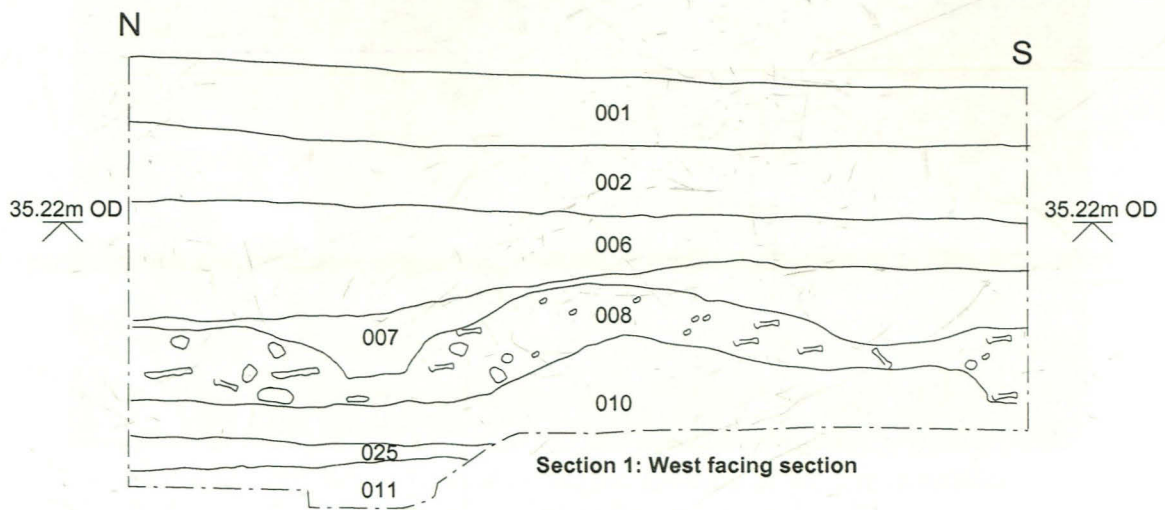
Project Name: Stamford Star Lane SSL03

Scale 1:20

Drawn by: TBL

Report No: 122/03

Figure's 8 and 9 Plans of sondage in SW corner of trench



Archaeological Project Services

Project Name: Stamford Star Lane SSL 03

Scale 1:20

Drawn by: TBL Report No: 122/03

Figure 10 Sections 1 and 2



Plate 1 South facing view, showing the location of the site in relation to Star Lane and St Paul's Street.

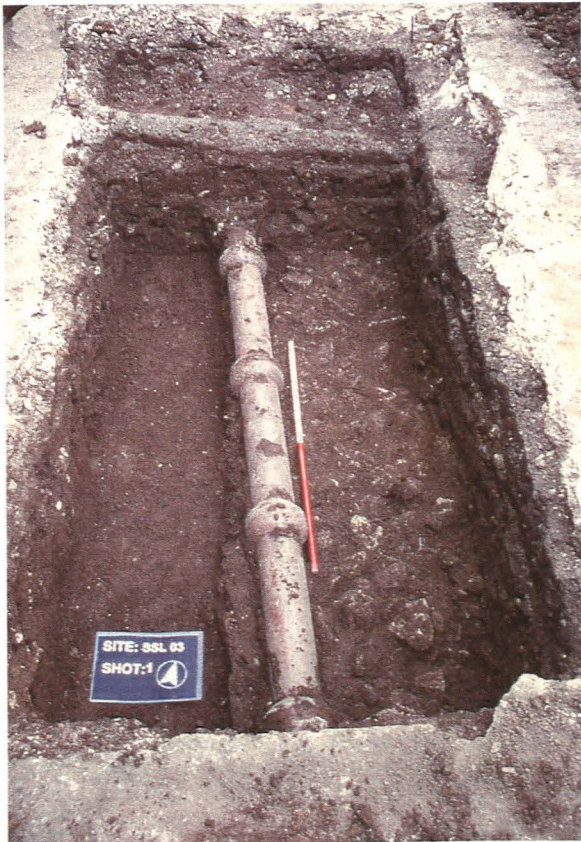


Plate 2 North facing view, showing rubble deposit (008).



Plate 3 North facing view, showing evaluation trench during final stage of excavation.



Plate 4 Section 1, (West facing view)



Plate 5 Section 2, East facing view



Plate 6 Detail of sondage extension to Section 2, showing iron-working deposits (015), (019) and (020).



Plate 7 South facing view of sondage, showing tap slag deposit (020).

Appendix. 1

Specification for an archaeological evaluation at Star Lane, Stamford, Lincolnshire

Prepared by Dale Trimble, Project Manager, APS

1 SUMMARY

- 1.1 *This document comprises a specification for the archaeological field evaluation of land at Star Lane, Stamford, Lincolnshire.*
- 1.2 *The area is archaeologically sensitive, situated in the heart of the historic town of Stamford, within the area of the Danish burh and close to the proposed site of the medieval church of St Andrew.*
- 1.3 *An archaeological evaluation is required to assess the impact of the proposed development on any buried remains which may be present on the site. This will provide the archaeological curator with detailed information to design an appropriate archaeological mitigation strategy which may be implemented as a planning condition.*
- 1.4 *On completion of the fieldwork a report will be prepared detailing the findings of the investigation. The report will consist of a text describing the nature of the archaeological deposits located and will be supported by illustrations and photographs.*

2 INTRODUCTION

- 2.1 This document comprises a specification for the archaeological field evaluation of land at Star Lane, Stamford, Lincolnshire. The site is located at National Grid Reference TF 0318 0727.
- 2.2 The document contains the following parts:
 - 2.2.1 Overview
 - 2.2.2 The archaeological and natural setting
 - 2.2.3 Stages of work and methodologies to be used
 - 2.2.4 List of specialists
 - 2.2.5 Programme of works and staffing structure of the project

3 SITE LOCATION

- 3.1 Stamford is located 63km south of Lincoln and 17km northwest of Peterborough in the southwest corner of Lincolnshire. The site lies within the centre of the town and forms a roughly rectangular plot of approximately 200 square metres fronting on to the west side of Star Lane, between Broad Street and the High Street, centred on National Grid Reference TF 0318 1727. Currently a disused row of three buildings occupies the site although there is an open space in front of these where a trial trench may be placed.

4 PLANNING BACKGROUND

- 4.1 An archaeological evaluation is required to provide adequate information to aid the curatorial archaeologist for South Kesteven District Council in the design of an appropriate mitigation strategy which may be implemented as a planning condition of the proposed development. The proposed development will entail demolition of the two northernmost buildings of the row, although the area occupied by the flat roofed garage at the north end will form a parking area. The house at the south end of the row will be refurbished. As currently proposed the development will disturb the open space between the buildings and the pavement.

5 SOILS AND TOPOGRAPHY

- 5.1 The site lies at c. 36m OD on the south facing slope of the Welland valley. Soils at the site have not been mapped as the area is urban, but on the basis of surrounding areas are probably Elmton 3 calcareous fine loamy soils over Upper Lincolnshire Limestone (Hodge et al. 1984, 181).

6 ARCHAEOLOGICAL OVERVIEW

- 6.1 Documentary evidence suggests that there has been settlement in Stamford since at least the end of the 9th century AD when it was settled by the Danes and later by the Saxons. The site lies within the limits of the Danish burh, the defences of which ran south along Star Lane just to the east.
- 6.2 Desk-top assessment of the archaeological potential of a nearby site was undertaken by APS (Cope-Faulkner 2001). The medieval St Andrew's Church lay somewhere just to the north of the site. Neither its location nor the extent of its graveyard are precisely known and may fall within the area of the development. Other archaeological finds and deposits in the vicinity include the site of a 9th-12th century iron smelting furnace and finds of Saxo-Norman and later pottery.
- 6.3 An archaeological evaluation of a site approximately 50m west of the proposed development identified a medieval pit containing metalworking waste and sherds of residual late Saxon pottery (Snee, 2001).

7 **AIMS AND OBJECTIVES**

- 7.1 The aim of the work will be to gather sufficient information for the archaeological curator to be able to formulate a policy for the management of the archaeological resources present on the site.
- 7.2 The objectives of the work will be to:
- 7.2.1 Establish the type of archaeological activity that may be present within the site.
 - 7.2.2 Determine the likely extent of archaeological activity present within the site.
 - 7.2.3 Determine the spatial arrangement of the archaeological features present within the site.
 - 7.2.4 Determine the extent to which the surrounding archaeological features extend into the application area.
 - 7.2.5 Establish the way in which the archaeological features identified fit into the pattern of occupation and land-use in the surrounding landscape.
 - 7.2.6 Determine the date and function of the archaeological features present on the site.

8 **LIAISON WITH THE ARCHAEOLOGICAL CURATOR**

- 8.1 Prior to the commencement of the trial trenching the arrangement of the interventions (excavations) will be agreed with the archaeological curator to ensure that the proposed scheme of works fulfils their requirements.

9 **TRIAL TRENCHING**

- 9.1 Reasoning for this technique
- 9.1.1 Trial trenching enables the *in situ* determination of the sequence, date, nature, depth, environmental potential and density of archaeological features present on the site.
 - 9.1.2 The trial trenching will consist of the excavation of a single trench of 4m² placed in the open area at the front of the row of building currently occupying the site. The trench will be stepped-in should archaeological deposits extend below 1.2m depth. Augering may be used to determine

the depth of the sequence of deposits present.

9.2 General Considerations

- 9.2.1 All work will be undertaken following statutory Health and Safety requirements in operation at the time of the investigation.
- 9.2.2 The work will be undertaken according to the relevant codes of practice issued by the Institute of Field Archaeologists (IFA). *Archaeological Project Services* is an IFA Registered Archaeological Organisation (No. 21).
- 9.2.3 Any and all artefacts found during the investigation and thought to be 'treasure', as defined by the Treasure Act 1996, will be removed from site to a secure store and promptly reported to the appropriate coroner's office.
- 9.2.4 Excavation of the archaeological features exposed will only be undertaken as far as is required to determine their date, sequence, density and nature. Not all archaeological features exposed will necessarily be excavated. However, the investigation will, as far as is reasonably practicable, determine the level of the natural deposits to ensure that the depth of the archaeological sequence present on the site is established.
- 9.2.5 Open trenches will be marked by hazard tape attached to road irons or similar poles. Subject to the consent of the archaeological curator, and following the appropriate recording, the trenches, particularly those of excessive depth, will be backfilled as soon as possible to minimise any health and safety risks.

9.3 Methodology

- 9.3.1 Removal of the topsoil and any other overburden will be undertaken by hand by Archaeological Project Services. On completion of the removal of the overburden, the nature of the underlying deposits will be assessed by hand excavation before any further mechanical excavation that may be required. Thereafter, the trenches will be cleaned by hand to enable the identification and analysis of the archaeological features exposed.
- 9.3.2 Investigation of the features will be undertaken only as far as required to determine their date, form and function. The work will consist of half- or quarter-sectioning of features as required and, where appropriate, the removal of layers. Should features be located which may be worthy of preservation *in situ*, excavation will be limited to the absolute minimum, (*ie* the minimum disturbance) necessary to interpret the form, function and date of the features.

- 9.3.3 The archaeological features encountered will be recorded on Archaeological Project Services pro-forma context record sheets. The system used is the single context method by which individual archaeological units of stratigraphy are assigned a unique record number and are individually described and drawn.
- 9.3.4 Plans of features will be drawn at a scale of 1:20 and sections at a scale of 1:10. Should individual features merit it, they will be drawn at a larger scale.
- 9.3.5 Throughout the duration of the trial trenching a photographic record consisting of black and white prints (reproduced as contact sheets) and colour slides will be compiled. The photographic record will consist of:
- the site before the commencement of field operations.
 - the site during work to show specific stages of work, and the layout of the archaeology within individual trenches.
 - individual features and, where appropriate, their sections.
 - groups of features where their relationship is important.
 - the site on completion of field work
- 9.3.6 Should human remains be encountered, they will be left *in situ* with excavation being limited to the identification and recording of such remains. If removal of the remains is necessary the appropriate Home Office licences will be obtained and the local environmental health department informed. If relevant, the coroner and the police will be notified.
- 9.3.7 Finds collected during the fieldwork will be bagged and labelled according to the individual deposit from which they were recovered ready for later washing and analysis.
- 9.3.8 The spoil generated during the investigation will be mounded along the edges of the trial trenches with the top soil being kept separate from the other material excavated for subsequent backfilling.
- 9.3.9 The precise location of the trenches within the site and the location of site recording grid will be established by an EDM survey.

10 ENVIRONMENTAL ASSESSMENT

- 10.1 If appropriate, during the investigation specialist advice will be obtained from an environmental archaeologist. The specialist will visit the site and will prepare a report detailing the nature of the environmental material present on the site and its potential for additional analysis should further stages of archaeological work be required. The results of the specialist's assessment will be incorporated into the final report

11 POST-EXCAVATION AND REPORT

11.1 Stage 1

11.1.1 On completion of site operations, the records and schedules produced during the trial trenching will be checked and ordered to ensure that they form a uniform sequence constituting a level II archive. A stratigraphic matrix of the archaeological deposits and features present on the site will be prepared. All photographic material will be catalogued: the colour slides will be labelled and mounted on appropriate hangers and the black and white contact prints will be labelled, in both cases the labelling will refer to schedules identifying the subject/s photographed.

11.1.2 All finds recovered during the trial trenching will be washed, marked, bagged and labelled according to the individual deposit from which they were recovered. Any finds requiring specialist treatment and conservation will be sent to the Conservation Laboratory at the City and County Museum, Lincoln.

11.2 Stage 2

11.2.1 Detailed examination of the stratigraphic matrix to enable the determination of the various phases of activity on the site.

11.2.2 Finds will be sent to specialists for identification and dating.

11.3 Stage 3

11.3.1 On completion of stage 2, a report detailing the findings of the investigation will be prepared. This will consist of:

- A non-technical summary of the results of the investigation.
- A description of the archaeological setting of the site.
- Description of the topography and geology of the investigation

area.

- Description of the methodologies used during the investigation and discussion of their effectiveness in the light of the results.
- A text describing the findings of the investigation.
- Plans of the trenches showing the archaeological features exposed. If a sequence of archaeological deposits is encountered, separate plans for each phase will be produced.
- Sections of the trenches and archaeological features.
- Interpretation of the archaeological features exposed and their context within the surrounding landscape.
- Specialist reports on the finds from the site.
- Appropriate photographs of the site and specific archaeological features or groups of features.
- A consideration of the significance of the remains found, in local, regional, national and international terms, using recognised evaluation criteria.

12 ARCHIVE

- 12.1 The documentation, finds, photographs and other records and materials generated during the investigation will be sorted and ordered into the format acceptable to the City and County Museum, Lincoln. This sorting will be undertaken according to the document titled *Conditions for the Acceptance of Project Archives* for long term storage and curation.

13 REPORT DEPOSITION

- 13.1 Copies of the investigation report will be sent to: the client, Mr Branwood; the client's agent, Mr Branwood; the Community Archaeologist, South Kesteven District Council; South Kesteven District Council Planning Department; and the Lincolnshire County Sites and Monuments Record.

14 PUBLICATION

- 14.1 A report of the findings of the investigation will be published in Heritage Lincolnshire's annual report and an article of appropriate content will be submitted for inclusion in the journal Lincolnshire History and Archaeology.

Notes or articles describing the results of the investigation will also be submitted for publication in the appropriate national journals: *Medieval Archaeology* and *Journal of the Medieval Settlement Research Group* for medieval and later remains, and *Britannia* for discoveries of Roman date.

15 **CURATORIAL MONITORING**

15.1 Curatorial responsibility for the project lies with Community Archaeologist, South Kesteven District Council. As much written notice as possible, ideally at least seven days, will be given to the archaeological curator prior to the commencement of the project to enable them to make appropriate monitoring arrangements.

16 **VARIATIONS TO THE PROPOSED SCHEME OF WORKS**

16.1 Variations to the scheme of works will only be made following written confirmation from the archaeological curator.

16.2 Should the archaeological curator require any additional investigation beyond the scope of the brief for works, or this specification, then the cost and duration of those supplementary examinations will be negotiated between the client and the contractor.

17 **SPECIALISTS TO BE USED DURING THE PROJECT**

17.1 The following organisations/persons will, in principle and if necessary, be used as subcontractors to provide the relevant specialist work and reports in respect of any objects or material recovered during the investigation that require their expert knowledge and input. Engagement of any particular specialist subcontractor is also dependent on their availability and ability to meet programming requirements.

<u>Task</u>	<u>Body to be undertaking the work</u>
Conservation	Conservation Laboratory, City and County Museum, Lincoln.
Pottery Analysis	Prehistoric: Dr D Knight, Trent and Peak Archaeological Trust Roman: B Precious, independent specialist Anglo-Saxon: J Young, independent specialist Medieval and later: G Taylor, APS in consultation

	with H Healey, independent archaeologist
Other Artefacts	J Cowgill, independent specialist; or G Taylor, APS
Human Remains Analysis	R Gowland, independent specialist
Animal Remains Analysis	Environmental Archaeology Consultancy; or P Cope-Faulkner, APS
Environmental Analysis	Environmental Archaeology Consultancy
Radiocarbon dating	Beta Analytic Inc., Florida, USA
Dendrochronology dating	University of Sheffield Dendrochronology Laboratory

18 PROGRAMME OF WORKS AND STAFFING LEVELS

18.1 Fieldwork is expected to be undertaken by 2 staff, a supervisor and 1 assistants, and to take four (2) days.

18.2 Post-excavation analysis and report production is expected to take 5 person-days within a notional programme of 10 days. A project officer or supervisor will undertake most of the analysis, with assistance from the finds supervisor and CAD illustrator. Two half-days of specialist time are allotted in the project budget.

18.3 Contingency

18.3.1 Contingencies have been specified in the budget. These include: environmental sampling/analysis of waterlogged remains; pump (not expected as no evidence of waterlogging previously identified in this area); Roman pottery (small amounts allowed for); Anglo-Saxon pottery (small amounts allowed for); Medieval pottery - large quantities (moderate amount expected and allowed for); faunal remains -large quantities (moderate amounts expected and allowed for); Conservation and/or Other unexpected remains or artefacts.

18.3.2 Other than the pump, the activation of any contingency requirement will be by the archaeological curator (South Kesteven Community Archaeologist), not Archaeological Project Services.

19 INSURANCES

- 19.1 Archaeological Project Services, as part of the Heritage Trust of Lincolnshire, maintains Employers Liability insurance to £10,000,000. Additionally, the company maintains Public and Products Liability insurances, each with indemnity of £5,000,000. Copies of insurance documentation can be supplied on request.

20 COPYRIGHT

- 20.1 Archaeological Project Services shall retain full copyright of any commissioned reports under the *Copyright, Designs and Patents Act 1988* with all rights reserved; excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in the Project Specification.
- 20.2 Licence will also be given to the archaeological curators to use the documentary archive for educational, public and research purposes.
- 20.3 In the case of non-satisfactory settlement of account then copyright will remain fully and exclusively with Archaeological Project Services. In these circumstances it will be an infringement under the *Copyright, Designs and Patents Act 1988* for the client to pass any report, partial report, or copy of same, to any third party. Reports submitted in good faith by Archaeological Project Services to any Planning Authority or archaeological curator will be removed from said Planning Authority and/or archaeological curator. The Planning Authority and/or archaeological curator will be notified by Archaeological Project Services that the use of any such information previously supplied constitutes an infringement under the *Copyright, Designs and Patents Act 1988* and may result in legal action.
- 20.4 The author of any report or specialist contribution to a report shall retain intellectual copyright of their work and may make use of their work for educational or research purposes or for further publication.

21 BIBLIOGRAPHY

Cope-Faulkner, P. 2001 *Desk-top Assessment of the Archaeological Implications of Proposed Development at Star Lane, Stamford*, Lincolnshire. Unpublished APS report 93/01

Hodge, CAH, Burton, RGO, Corbett, WM, Evans, R, and Seale, RS, 1984 *Soils and their use in Eastern England*, Soil Survey of England and Wales 13

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Specification: Version 1, 19th June 2003

Appendix 2

Context Descriptions

Context	Description	Depth	Interpretation
001	Concrete slab yard surface	0.08-0.16m	Modern surface
002	Friable dark greyish brown sandy clay	0.23m	Make-up deposit
003	E/W tar coated tube	0.45m (diam)	Modern service
004	N/S ceramic drainpipe	0.14m (diam)	Modern service
005	Cut for 004	-	Modern service
006	Soft greyish brown sandy silt clay	0.30m	Make up deposit
007	Soft greyish brown silty clay	0.20m	Make-up deposit
008	Soft greyish brown clayey silt. 20-30% fragmented Collyweston limestone roof tile, mortar and ceramic roof tile fragments	0.21m	Demolition deposit
009	Friable light greyish brown sandy silty clay.	0.53m	Make-up deposit
010	Soft greyish brown silty clay	0.25m	Make-up deposit
011	Friable buff yellowish brown sandy silt clay.	0.13m	Possible levelling deposit
012	Friable pale yellowish brown clayey sand.	0.23m	Possible levelling deposit
013	Not a feature	-	
014	Same as 009	-	
015	Loose red, slightly maroon iron ore	0.36m	Ground iron ore deposit.
016	0.65m diameter flat based pit cut	0.58m	Pit cut
017	Friable. Mottled light greyish brown sandy silt/ pale yellowish brown clayey sand	0.58m	Fill of 016
018	Loose greyish brown ashy silt. 30-40% slag	0.12m	Make-up deposit
019	Loose greyish brown sandy silt	0.13m	Make-up deposit
020	Compacted reddish brown / black limestone and fired clay surface. 20% slag	Not excavated	Working surface
021	Compact greyish brown mixture of slag (sandy silt) and sandy silt.	0.11m	In-situ slag deposit
022	Soft greyish brown sandy silt	0.21m	Make-up deposit
023	Loose/ dark grey black ash	<0.01m	Ash lense
024	Unstratified material from 019, 020, 021, 022	-	Unstratified
025	Soft greyish brown sandy silt clay	0.08m	Make-up deposit.

026	Shallow cut or depression. Cut through 022, filled with 021	0.11m	Shallow cut
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Appendix 3

THE FINDS

by Paul Cope-Faulkner, Rachael Hall, Hilary Healey, Gary Taylor and Jane Young

Recording of the pottery was undertaken with reference to guidelines prepared by the Medieval Pottery Research Group (Slowikowski *et al.* 2001) and the pottery was quantified using the chronology and coding system of the Lincolnshire ceramic type series. A total of 109 fragments of pottery weighing 1224g was recovered from 13 separate contexts. In addition to the pottery, a large quantity of other artefacts, mostly building materials and industrial residue, comprising 112 items weighing a total of 4906g, was retrieved. Faunal remains were also recovered.

The excavated animal bone assemblage comprises 4 stratified fragments weighing 34g. The animal bone was identified by reference to published catalogues. No attempt is made to sex or age animals represented within the assemblage, although where this is readily apparent is noted in the comments column.

Provenance

The material was recovered from stratified urban deposits associated with iron -smelting and the demolition of a medieval building. The recent material was recovered from overlying garden soils.

Most of the pottery was made in close or moderate proximity to Stamford, including in the town itself, at Bourne 13km to the northeast, and in the Stanion-Lyveden area of northeast Northamptonshire, about 22km to the southwest. Similarly, most of the roof tile was made at Bourne though a few are Stanion-Lyveden products.

Range

The range of material is detailed in the tables.

Table 1: Pottery

Context	Fabric Code	Description	No.	Wt (g)	Context Date
002	LPM	White glazed tableware with blue paint and sponging, 19 th -early 20 th century	2	13	20 th century
	LPM	Plant pot, 20 th century	5(2 link)	56	
	BL	Red painted earthenware, black glazed, 18 th century	3	82	
	BL	Blackware, drinking vessels, 17 th century	2	5	
	LONS/RAER?	Salt glazed stoneware jug, London/Germany, 17 th century	1	12	
	BOU	Bourne D ware, 1 abraded, 16 th -17 th century	12	230	
	STANLY	Stanion-Lyveden ware, 1 abraded and burnt, mid 12 th -mid 13 th century	4(2 link)	71	
	DST	Developed Stamford ware, mid 12 th -mid 13 th century	2	4	
006	BOU	Bourne D ware, incl. jug, 16 th -17 th century	12(3 link)	149	17 th century
	GRE	Glazed red earthenware, 17 th century	1	11	
	STANLY	Stanion-Lyveden ware, 2 abraded, mid 12 th -mid 13 th century	4	12	

Context	Fabric Code	Description	No.	Wt (g)	Context Date
	BOUA	Bourne A/B ware, very abraded, 12 th -14 th century	1	3	
	ST	Stamford ware, 10 th -12 th century	2	5	
	DST	Developed Stamford ware, mid 12 th -mid 13 th century	1	4	
	MISC	Unidentified, possibly Bourne D ware, burnt, encrusted internally, late medieval-early post-medieval	1	10	
007	BOU	Bourne D ware, 16 th -17 th century	1	3	16 th -17 th century
	STANLY	Stanion-Lyveden ware, sooted externally, no link but same vessel, mid 12 th -mid 13 th century	2	24	
008	BOU	Bourne D ware, jug, no link but same vessel, abraded, 15 th -16 th century	2	23	15 th -16 th century
	ST	Stamford ware, 10 th -12 th century	1	5	
009	STANLY	Stanion-Lyveden ware, 1 sooted externally, mid 12 th -mid 13 th century	3	11	15 th -17 th century, possibly 17 th century
	ST	Stamford ware, 10 th -12 th century	5	17	
	BOUA	Bourne A/B ware, sooted externally, limy encrustation internally, 12 th -14 th century	1	16	
	NSP?	Nottingham ware, splash glazed ware?, 12 th -mid 13 th century	2	11	
	BOU	Bourne D ware, 15 th -17 th century	2	31	
	GRE?	Glazed red earthenware, 17 th century?	1	4	
011	STANLY	Stanion-Lyveden ware, 1 sooted externally, mid 12 th -mid 13 th century	2	44	15 th -17 th century
	BOU	Bourne D ware, 15 th -17 th century	1	9	
	ST	Stamford ware, 10 th -12 th century	1	3	
	DST	Developed Stamford ware, jug, mid 12 th -mid 13 th century	1	6	
012	ST	Stamford ware, 10 th -12 th century	2	10	12 th -15 th century
	MED	Unidentified medieval ware, 12 th -15 th century	1	7	
014	ST	Stamford ware, jar with rouletted rim	1	36	10 th -12 th century
015	ST	Stamford ware	2	11	10 th -12 th century
017	ST	Stamford ware	5	40	10 th -12 th century

Context	Fabric Code	Description	No.	Wt (g)	Context Date
019	ST	Stamford ware, incl rouletted rim of large, straight-sided bowl	6	85	10 th -12 th century
022	BOU	Bourne D ware, 15 th -17 th century	1	17	15 th -17 th century
	POTT	Potterhanworth ware, 13 th -15 th century	1	7	
	ST	Stamford ware, incl jar with rouletted rim, 10 th -12 th century	4(3 link)	46	
024	ST	Stamford ware, 1 sooted externally, incl rouletted rims of 3 separate jars	8(2 link)	91	10 th -12 th century

As might be expected in Stamford, the locally made Stamford ware pottery dominates the assemblage, providing 41 of the total of 109 sherds in the assemblage (37.6%). However, most of the pieces are body sherds or indeterminate cooking pot or jar forms, though there is at least one identifiable jug in Developed Stamford ware. A total of 10 rim sherds were retrieved but these are mostly sheared off at the rim-wall junction and do not readily indicate their specific form. There is, however, one substantial fragment of a wall and rouletted rim of Kilmurry's Form 1, a large, straight-sided bowl (Kilmurry 1980, 15).

Notably, eight of the fragments (almost 20% of the Stamford ware aspect of the assemblage) are rouletted rims, and there is also a rouletted body sherd. This appears to be a significant over-representation of this type, perhaps emphasised by the fact that there are only two further rim sherds that lack rouletting. None of the pieces are obvious wasters, although even at kiln sites, wasters are often not obvious in Stamford wares, but neither do these rouletted rims exhibit signs of use. It seems possible that they derive from a kiln in the vicinity that specialized in roulette-decorated forms and all but one of them are in the same Stamford ware sub-fabric, fabric A (the remaining piece being in fabric G). Previous research on the production and use of Stamford ware has identified specialisms at kilns, with one of the Castle site kilns making red painted wares, the School kiln manufacturing jugs and the Wharf Road production site generating wares of which 5% were rouletted (Kilmurry 1980).

Pottery types of high medieval date, covering the 13th-15th centuries, are not very abundant, supplying only about 20% of the total assemblage. Moreover, most, if not all, of these could have been in use concurrently with the latest Stamford wares in the 12th-early 13th century. It seems likely that the material indicates medieval settlement on the site or in close proximity, though the intensity of activity may not have been great.

Post-medieval wares constitute almost half the total assemblage. These appear to be generally domestic in nature and reflect occupation of the site from the 16th-18th centuries. There is little early modern, 19th-20th century, material but the largest part of this aspect of the collection is in the form of plant pots, suggesting the area was latterly used for gardening.

Table 2: Other Artefacts

Context	Material	Description	No.	Wt (g)	Comments
002	CBM	Glazed ridge tile, Bourne, 13 th -14 th century	2	44	19 th -20 th century
	CBM	Glazed ridge tile, Stanion-Lyveden, 12 th -13 th century	2	65	
	CBM	Roof tile, mostly reduced cores, medieval	4	113	
	CBM	Pantile, 19 th -20 th century	1	12	
	Stone	Collyweston slate roof tile, 7mm thick, fairly even surface, post-medieval	1	22	
	Clay pipe	Stem, bore 5/64", 18 th century	1	2	

Context	Material	Description	No.	Wt (g)	Comments
	Glass	Bottle, neck with string rim, much iridescence, 19 th century	1	22	
	Glass	Window glass, 2 with iridescence, undated	3	3	
	Glass	Small body sherd of pale blue rectangular bottle	1	2	
	Glass	Colourless vessel glass, 20 th century	1	2	
006	Copper alloy	Lace tag, 44mm long, 15 th -17 th century	1	1	15 th -17 th century
	Copper alloy	Book clasp or buckle plate, 15 th -16 th century	1	8	
	CBM	Roof tile, reduced cores, 4 glazed, 3 link, 13 th -14 th century	6(3 link)	175	
	CBM	Roof tile, Stanion-Lyveden, 12 th -13 th century	1	18	
007	CBM	Glazed ridge tile, Bourne, several linking pieces, 13 th -14 th century	16	625	13 th -14 th century
	CBM	Glazed ridge tile, Stanion-Lyveden, 12 th -13 th century	3(2 link)	135	
008	CBM	Glazed ridge tile, Bourne, several linking pieces, 13 th -14 th century	18	1149	13 th -14 th century
	CBM	Glazed ridge tile, Stanion-Lyveden, 12 th -13 th century	2	65	
	CBM	Roof furniture – louvre? medieval	6(2 link)	370	
	Stone	Collyweston slate roof tile, 10-12mm thick, 2 with fairly even surface, 1 with rough surface, drilled pegholes 10-12mm dia, medieval	3	236	
011	Fired clay	Fired clay	3	43	
015	CBM	Brick/tile	2	39	
017	Slag	Iron smelting slag	23	1397	Not burnt to firmness
	Clay	Scorched clay	3	24	
	Stone	Burnt stone	2	80	
019	Stone	Burnt limestone	3	200	
022	CBM	Glazed ridge tile, Stanion-Lyveden, crest	1	33	12 th -13 th century
024	Stone	Collyweston slate roof tile, 5mm thick, even surface	1	21	Post-medieval

Note: CBM = Ceramic Building Material

Some of the flat roof tiles are of stone, relatively local Collyweston slate, quarried only 5km to the southwest. Previously identified late medieval tiles are generally about 20mm thick, with uneven surfaces and a drilled peghole about 10mm in diameter. Post-medieval tiles are much thinner and with smaller pegholes, upto 7mm in diameter (RCHME 1984, xlvi). Consequently, there appear to be both medieval and post-medieval tiles in the assemblage. The association of some of the stone slates with the glazed ridge tiles suggests that the late medieval buildings at the site had roofs of these materials in combination.

Glazed ridge tiles are abundant and there are parts of further roof furniture, probably a louvre. Such items were

generally restricted to higher status buildings and consequently indicate the moderate affluence of medieval occupants of the site.

The lace tag from (006) does not have a rivet hole. Rivet holes appears to signify a medieval date on previously discovered examples from Northampton. Rather, examples lacking retaining rivets, like the current find, have been recovered from mid 16th to 17th century deposits at Northampton (Oakley and Webster 1979, 262-3). However, a very similar lace tag of comparable size was recovered from a 15th century context at Beverley (Goodall 1991, 151-2). Such laces were used to fasten clothing, chiefly of leather.

An incomplete book clasp or buckle plate was also recovered from (006). Similar book clasps have been recovered from 15th-16th century deposits at Beverley (*ibid.* 150-1), while buckle plates that are also comparable have been found in 15th century levels at Northampton (Oakley and Webster 1979, 252-4).

A quantity of iron smelting slag, indicative of industrial activity, was recovered. Further iron slag was recovered from the site and is reported separately (Cowgill, Appendix 4).

Table 3: The Faunal Remains

Context	Species	Bone	No.	Wt (g)	Comments
017	cattle	rib	1	9	fragment only
	cattle sized	?humerus	1	8	
	deer	pelvis	1	15	
	sheep sized	rib	1	2	

The presence of a fragment of a deer pelvis is informative. Deer are normally associated with manorial rights and the control of deer would generally not make it available as a food item to the lower echelons of society.

Condition

All the material is in good condition and presents no long-term storage problems. Archive storage of the collection is by material class.

Documentation

There have been numerous previous archaeological investigations at Stamford. Additionally, there has been reported study of the archaeological and historical evidence for the town and its vicinity. Details of archaeological sites and discoveries in the area are maintained in the files of the South Kesteven Community Archaeologist and the Lincolnshire County Council Sites and Monuments Record.

Potential

The moderately large collection of medieval and post-medieval pottery fragments is of moderate-high local potential and significance. The quantity of 10th-12th century ceramics indicates occupation of that period at the site. However, this occupation may not necessarily be domestic and the assemblage gives some indications of pottery production of this period in the vicinity.

The later medieval pottery is of moderate local potential, though the greatest significance of this aspect of the collection is the reduced quantity, compared to earlier and later material, which suggests some reduction in the intensity of settlement at the site during the high medieval period.

Post-medieval ceramics are more abundant and this is of moderate local potential and indicates resurgence of settlement activity from about the 16th century.

Ceramic building materials, particularly roof tile, is abundant. Moreover, much of this is provided by glazed crested ridge tiles that usually derive from, and imply the presence of, higher status medieval structures. This is of high local potential and significance. The louvre fragments and deer bone that were recovered also supplement the evidence for affluent medieval occupants of the site.

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Appendix. 4

Catalogue and report on the iron-smelting slag and associated finds from the evaluation at Star Lane, Stamford (SSL 03). Jane Cowgill©, July 2003.*Introduction.*

A small evaluation trench was excavated by Archaeological Project Services in advance of the site being developed for housing. The site is located near the centre of town within the Pre-Conquest Borough and the area defined as the Saxo-Norman town (Mahany *et al* 1982, 7-8). More importantly the site is very close to the 'Co-op' site excavated in 1963-4 where the D-shaped furnace was uncovered (Burchard 1982). The small trench contained a large ceramic service pipe running through the centre of it making only a very limited area, on either side of it, available for excavation.

Methodology.

Seven samples were taken (Table 1) and they have been processed in the following manner. The samples were weighed and the volume measured prior to being washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.3 mm mesh and an internal wet-sieve of 0.5 mm mesh for the residue (to contain any hammerscale). Both the flot and residue were dried and the residues subsequently re-floated to ensure the efficient recovery of charred material. The dry volume of the flot was measured, and the volume and weight of the residue recorded.

The dried sample residues were sieved through 7 and 2mm meshes and the larger fractions were sorted by eye. Archaeological and environmental finds were picked out and bagged separately after being recorded on a sample assessment sheet. A magnet was run through all the residues for the extraction of magnetic material, in particular hammerscale and prill. The flots were examined by eye and the presence of environmental finds was briefly noted by the author (who has limited experience in dealing with charred or environmental material). The flot was then bagged and they, with the environmental and industrial finds, have been kept and constitute the material archive.

Table 1: The samples taken for analysis.

Sample No	Context	Volume	Weight	Residue volume	Residue weight	Context description
1	012	20ltr	23kg	6.5ltr	8.9kg	Yellow gravelly sand
2	017	20ltr	23kg	8ltr	10.8kg	Fill of 016
3	018	10ltr	14kg	5.7ltr	8.25kg	Slag/ash overlying ore 015
5	019	1ltr	2.3kg	0.7ltr	1.1kg	Slag/ ashy silt below ore 015
6	020	c.1.5ltr	2.2kg	1.2ltr	1.5kg	Surface with <i>in situ</i> tap slag
7	021	c.1.5ltr	2.2kg	1.35ltr	1.6kg	Tap slag deposit
8	022	1ltr	1.5kg	0.2ltr	265g	Slag/ dark grey ash deposit

The hand collected slag and any associated debris was received washed. The slags and associated debris from the excavation and samples were identified solely on morphological grounds, by visual examination, sometimes with the aid of a x10 binocular microscope. It was then recorded on *pro forma* recording sheets and the information entered into a Microsoft Access database using the following encoded fields: Context; Sample number, Material; Count; Weight; Craft, Fuel type, Comments. A note of fuel type was recorded when fragments were incorporated within the slags or imprints identifiable. The catalogue of the slags and related material forms Appendix 1.

The samples.

The finds from the samples are listed in Table 2 along with the size and content of the flots (recorded after only a brief scan), while the quantity of slag and related material is given in Table 3. The samples were taken as whole earth samples meaning that no finds had been extracted from them. A few uncharred seeds are present indicating some low levels of contamination.

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Table 2: Non-industrial finds from the samples.

Samp	Cont	Residue volume	Flot volume	Pot \$/∓	Glass \$/∓	Bone	Fish bone#	Marine shell#	Char'd grain#	Chaff #	Char'd seed#	Egg shell#	Snail #	Comments on the residues and <i>flot in italics</i> .
1	012	6.5ltr	20mls	5/6	2/<1*	3g		1	2	1	1		2	Oyster, mussell, <i>most comminuted charcoal, some small twigs, grain wheat, ?oats.</i>
2	017	8ltr	40mls	25/25	2/1*	2g	2	1	2	1	1	1	1	1xpot sherd intrusive, mussell, cockle, oyster, pig tooth, vole incisor; 3 small + 1 medium fish vertebra, herring? chicken and ?goose eggshell, <i>most comminuted charcoal, some small twigs, grain wheat, ?oats, legume.</i>
3	018	5.7ltr	35mls	12/14	1/<1*	8g	1	1	2	1	1			Mussell, oyster, sheep/goat tibia, small fish vertebra, <i>most comminuted charcoal, some small twigs, grain wheat, ?oats, legume.</i>
5	019	0.7ltr	10mls	4/10		2g	1	1	2		1	1		Mussell, cockle, sheep/goat mandible, small mammal bone, small fish vertebra and scale, ?chicken eggshell, <i>most comminuted charcoal, some small twigs, grain wheat.</i>
6	020	1.2ltr	1ml			2g					1			<i>Most comminuted charcoal, some small twigs, grain wheat, ?oats, legume.</i>
7	021	1.35ltr	3mls			1g			2	1	1			<i>Most comminuted charcoal, some small twigs, grain wheat, oats.</i>
8	022	0.2ltr	10mls			3g			2		1			<i>Most comminuted charcoal, some small twigs, grain wheat, oats.</i>

\$/∓ Count/weight (g) # Abundance: 1= 1-10, 2= 11-100, 3= 101-250 items *Intrusive

Table 3: Slag and related finds recovered from the samples.

Samp	Cont	Smelting debris				Smithing debris?			Uncertain/Other				
		Furnace structure \$/∓	Roasted ore \$/∓	Slag \$/∓	Tap slag \$/∓	Hammerscale @		Slag \$/∓	Fired clay \$/∓	Iron \$/∓	Magnetic Matter (g)	Slag \$/∓	Unroasted ore \$/∓
1	012	3/2	18/49	4/4	163/1112	+++ P few S			3/9		110	59/190	28/48
2	017	19/140	40/194	4/2	667/3166	+ ratio 50:50 P:S		5/46	24/73	31/71	419	187/176	14/30
3	018	33/139	65/235	15/61	610/3387	++ P few S		9/159			1169	551/436	11/83
5	019		15/22		130/625	+++ P few S				5/32	68	18/9	4/45
6	020		7/10		170/996	+ very few P				4/25	107	25/29	4/6
7	021		4/18		130/1270	+ v occasional P rare S					124	7/32	
8	022				69/59	++ few P and S; ratio 4:1? P:S					43	2/2	18/27

\$/∓ Count/weight (g) @ Frequency + 1-10; ++ 11-25; +++ 26-50 fragments P: Plate hammerscale S: Spheroidal hammerscale

Description of the slag.

Only a small subsample of the slag present on the site was hand collected, the samples therefore constitute the majority of the recovered assemblage. All of the slag is in a fresh condition and the majority are probably from primary, rather than secondary dumps. The majority are tap slags, generated during the production of metallic iron from ore. Most of these slags are fragments of tap plates, generally c. 20 - 25mm thick, although it is evident that some are upper layers and therefore the depth of the plates forming in the tapping pit would have been somewhat thicker. The tops of the plate pieces are flattish but generally composed of multiple, often quite small flows, and with again fairly flat bases sometimes with sand and /or ore attached. Some of the tap has quite a bubbly core but most of these fragments were recorded as slag rather than tap (for example the 11 pieces from context 018, weight 38g). There is only one possible piece of channel-tap slag (context 008) and one possible tapering finger slag (context 009). It is thought that the latter may form in the furnace air hole. No furnace slag was positively identified. This is the slag that forms and cools within the furnace base and is characterized by the size of the charcoal inclusions incorporated within it.

Table 4: The total quantity of slag and associated material from each context (excluding types of material recovered solely from the samples).

		Smelting debris				Smithing debris?	Uncertain/ Other			
Cont.	Samp.	Furnace structure \$/∆	Roasted ore \$/∆	Slag \$/∆	Tap slag \$/∆	Slag \$/∆	Fired clay \$/∆	Iron \$/∆	Slag \$/∆	Unroasted ore \$/∆
002	No				2/14					
006	No				2/30					
008	No				2/31					
009	No			1/16	35/1048				1/99	
011	No				22/420			1/3		
012*	Yes	3/2	18/49	4/4	163/1112		3/9		59/190	28/48
014	No				15/495				4/103	
015	No				9/542					
017*	Yes	21/215	40/194	4/2	667/3166	5/46	24/73	31/71	187/176	14/30
018*	Yes	33/139	65/235	15/61	610/3387	9/159			551/436	11/83
019	Yes		15/22		220/4637			5/32	19/75	4/45
020*	Yes		7/10		170/996			4/25	25/29	4/6
021*	Yes		4/18		130/1270				7/32	
022*	Yes				69/59				2/2	18/27
024	No				5/257					

\$/∆ Count/weight (g)

* No hand collected slag

There is a small quantity of possible smithing slag in the form of some very small proto-hearth bottoms (context 018) and possible pieces of secondary smithing slags (contexts 014, 017, 018, 021 and 022), but both these categories are small and some of the material is magnetic. There is only a small quantity of hammer scale from most of the samples (the most is from context 012), material generated in some quantity during iron smithing, which suggests that only a limited amount of the primary smithing of the bloom into iron stock was occurring at this site. There is quite a large assemblage of very small knobbly rusty brown and black slag, some of which is magnetic. It is uncertain what part of the smelting or smithing process these may be a by-product of. They could have been generated by primary smithing but equally could have formed in the furnace and be some sort of equivalent of furnace slag.

The majority of the pieces of furnace structure are reduced fired (iron production is a reduction process) and most show little evidence for slag attack, but a few pieces show signs of having been repaired (context 017).

Both roasted and unroasted ore was recovered from the samples. This is likely to be Northamptonshire ironstone, which outcrops around Stamford, and was the ore used for smelting at the 'Co-op' site (Burchard 1982).

Charcoal was the only fuel type noted within or adhering to the slags. No large pieces or imprints were noted. A good assemblage of wood charcoal has been recovered from the samples and is present in the sample flots.

Conclusion.

The sequence encountered during the 2003 evaluation at Star Lane is very similar to that found at the 'Co-op' site at 32-34 High Street, some 40m to the south-west, except for the thick dump layer L7 found there (Burchard 1982). Layers of roasted ore dust (fines) with ashy charcoal rich lenses were found at both sites, with the main fines layer upper most in the sequence. The D-shaped furnace was found below these layers cut into the natural clays but unfortunately the basal deposits at Star Lane could not be examined for health and safety reasons. The limit of excavation was 'working layer' 020, a compacted reddish brown/ black limestone and fired clay surface with an *in situ* slag flow that appeared to have come from a ?furnace just to the south of the trench. It was not, however, in a tapping pit and therefore may be a large plate (although quite thin) that had been discarded from a furnace nearby. The trench was very narrow at this point but also could not be extended to the south because of the presence of electricity cables.

All the slag recovered from the 'Co-op' site were described as tap slag and no smithing slags or hammerscale was recorded (although the latter was sought for). The previous evaluation conducted in Star Lane in 2001, when a single 10 litre sample was examined, also found very little evidence for iron smithing (Cowgill 2001). Therefore at all three of these smelting sites in this part of Stamford evidence for iron smelting dominates the assemblage with very limited evidence for iron smithing. This differs from another recently excavated and recorded assemblage from Saint George's Street, Stamford, where convincing evidence for both iron smelting and smithing was recovered (Cowgill 2001), although the quantity of smithing debris was quite low. At Saint George's Street the range of smelting slags was also very limited with few furnace slags and again the majority of the individual pieces of slag was small, leading to a suggestion that the slag was fracturing upon cooling rather than due to mechanical damage after it had formed.

The location of this evaluation trench, in close proximity to the excavated D-shaped furnace, and with a sequence of smelting debris very reminiscent of that found in the 1963-4 excavations (Burchard 1982), makes this development area of very great interest and significance. It has long been clear that iron smelting and pottery production were major industries within and around the town of Stamford, perhaps to an extent that is not paralleled in any other town in England. The furnaces are within the proposed town walls (Mahany *et al* 1982) and it is evident that some authority (Church or Crown?) was closely controlling them and probably making a substantial income from them. The value and economic importance of iron production to institutions between the 10th and 12th centuries is a much under-explored theme. The fact that it was felt necessary to bring the industry into the town, against all other logistical sense (requiring the importation of the clay, iron ore and above all charcoal) means that tight control of it was deemed essential, and the output of great value.

Although deposits of slag are frequently found in the town, often probably primary deposits, the furnaces in which these slags were generated remain illusive, and as far as the author is aware the 'Co-op' furnace is the only one to have been recorded by a controlled archaeological excavation. It's D-shaped form is unique in this country, most iron-smelting furnaces being circular in plan. It is

therefore unknown whether this type was operating alongside the more commonly encountered circular shaft furnaces, perhaps producing a different type of iron, or if it is a regional/local form preferred by the iron masters of Stamford.

The location of this development area, so close to a known furnace site, therefore gives an unrivalled opportunity to investigate an area using modern techniques, where there is a high likelihood of iron-smelting furnaces being found.

Recommendations.

If it is not possible to further investigate the site the following recommendations are suggested to complete the archive of the evaluation.

The charcoal assemblage from the samples should be identified to species and where possible the number of rings counted and heartwood recorded if oak is present. This will identify whether specific species were being selected for conversion to charcoal for the iron smelting and may establish the coppicing regime that produced the wood. Smelting requires large pieces of charcoal and often oak heartwood is found to be present at smelting sites, which suggests the conversion of timber, eminently suitable for building purposes, is being coaled for iron production.

Some of the pieces that have tentatively been identified as iron should be X-radiographed. These are from contexts 011, 017, 018, 019 and 020. The presence of iron would add to the significance of the assemblage as a research tool to further understand the industry in Stamford. The results of the analyses of the nodule from the 'Co-op', conducted by Tylecote, suggests that a heterogeneous iron was being produced but with quite a high carbon content (most between 0.4 and 0.8%).

In the light of these results the report should be amended.

If the site is excavated it is important to ensure that the trench is either large enough for the basal deposits to be reached in case there is a furnace on the site or that shoring is included in the budget. An adequate sampling policy will also be required with a sample size for the industrial samples of c. 10 litres. A sum for metallurgical analysis should also be included in the tenders.

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Jane Cowgill©
July 2003

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APPENDIX 1. CATALOGUE OF ALL THE SLAG AND RELATED FINDS FROM STAR LANE, STAMFORD (SSL03).

Contex	Sample	Type	No	Weight	Craft	Fuel	Comments
2	0	TAP	2	14	FESMELT		FLAWS
6		TAP	2	30	FESMELT		PLATE FRAGS
8	0	TAP	2	31	FESMELT		1 X CHANNEL? WIDTH 32MM; TH 20MM
9	0	SLAG	1	16	FESMELT		VIT FURNST
9	0	SLAG	1	99	FEWKING		PROB TAP BUT COULD BE PRIMARY SMITHING; LOTS VOIDS
9	0	TAP	1	10	FESMELT		SMALL FRAG BUT PART LIKE FURNACE SLAG
9	0	TAP	1	89	FESMELT		LOTS ORE INCORPORATED AND ON TOP AND BASE
9	0	TAP	11	182	FESMELT		FLAWS - I POSSIBLY A TAPERING FINGER SLAG
9	0	TAP	22	767	FESMELT		PLATE FRAGS; MANY WITH LOTS OF ORE ON BASE; ALL THIN; MOST MULTIPLE FLOWS
11	0	IRON?	1	3	FEWKING		MAG; IRON? SLAG? XRAY TO CONFIRM IDENTIFICATION
11	0	TAP	3	35	FESMELT		FLAWS
11	0	TAP	19	385	FESMELT		PLATE FRAGS; ORE AND FURNST ON SOME; AVERAGE TH C. 20 - 25MM
12	1	FIRE	3	9			OXIDIZED; 1 SMOOTH SURFACE
12	1	FURNST	3	2	FESMELT		REDU
12	1	MAGMAT	0	27			>7MM; 1 X TAP; 2 X ORE; 1 X IRON/SLAG
12	1	MAGMAT	0	39	FESMITH		<2MM; 10ML=12G; MEDIUM NUMBER P FEW S
12	1	MAGMAT	0	44	FESMITH		2-7MM; 20ML=25G; 2XS 1XP FEW PRILL; MOST SLAG/ORE
12	1	ORE	18	49	FESMELT		ROASTED
12	1	ORE	28	48			UNROASTED
12	1	SLAG	1	143	FEWKING	CHARC	SOME FLOWED TAP; LARGE AREA BROWN/RUSTY COLOURED; LOTS SMALL VOIDS
12	1	SLAG	4	4	FESMELT		VERY DENSE; GLASSY; VITRIFIED FURNST
12	1	SLAG	26	28	FEWKING	CHARC	BROWN FRAGMENTS; FREQUENT VOIDS; KNOBBLY
12	1	SLAG	32	19	FEWKING		BLACK FRAGMENTS
12	1	TAP	163	1112	FESMELT		MOST SMALL; DENSE; MOST FLATTISH; FEW LAYERED; SANDY BASES; MAX TH 50MM
14	0	SLAG	1	2	FEWKING		BUBBLY; LOTS OF ORE; GLASSY
14	0	SLAG	1	16	FEWKING		COMPLETE PIECE; PART MAG; SSL?
14	0	SLAG	2	85	FEWKING		PROB TAP BUT VERY BUBBLY; ALMOST FROTHY
14	0	TAP	1	27	FESMELT		FLOW; ORE INCLUSIONS; SOME BUBBLY
14	0	TAP	2	86	FESMELT		FLAWS
14	0	TAP	12	382	FESMELT		DENSE PLATE FRAGS; MASS SMALL FLOWS
15	0	TAP	1	7	FESMELT		SLIGHTLY BUBBLY
15	0	TAP	8	535	FESMELT	CHARC	SOME FURNST ON BASE; 1 X LAYERED; SAND/ORE ON BASE; 1 X CHARC ON BASE
17	2	FIRE	10	22			OXIDIZED PINK; AS BELOW
17	2	FIRE	14	51			REDU WHITE/GREY; CHALKY; 4 WITH SURFS - AT LEAST 1 WITH 2 LAYERS
17	2	FURNST	1	6	FESMELT		YELLOW + MAG SLAG ATTACHED
17	2	FURNST	1	14	FESMELT		REDU; MOST VIT; GLASSY; VIT PART DENSE
17	2	FURNST	1	15	FESMELT		REDU; SLAG + VIT; SLAG MAG AND RUSTY COLOURED
17	2	FURNST	16	105	FESMELT		LAYERED; NO TEMPER; REDU; 6XFLAT SURFS; 1 WITH VIT SURF AND EXTERNAL REPAIR
17	2	IRON	2	34	FEWKING		MAG; XRAY TO CONFIRM IDENTIFICATION
17	2	IRON	29	37	FEWKING		MAG LUMPS; XRAY TO CONFIRM IDENTIFICATION
17	2	MAGMAT	0	65			>7MM; ORE FEW IRON? FEW TAP
17	2	MAGMAT	0	161	FESMITH		<2MM; 10ML=14G; RARE HAMMS RATIO PROB 50:50 P/S

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17	2	MAGMAT	0	193	FESMITH		2-7MM; 20ML=23G; 3XP 2XS; MOST SLAG/ORE RARE PRILL
17	2	ORE	1	17	FESMELT		MAG; SLAGGED
17	2	ORE	14	30			UNROASTED
17	2	ORE	39	177	FESMELT		ROASTED
17	2	SLAG	4	2	FESMELT		VIT FURNST
17	2	SLAG	5	46	FESMITH?		COMPLETE PIECES; SSL?
17	2	SLAG	9	7	FEWKING		BLACK; FREQUENT VOIDS; MAG; FRAGS BUBBLY TAP?
17	2	SLAG	68	66	FEWKING		BLACK; FREQUENT VOIDS; FRAGS OF BUBBLY TAP?
17	2	SLAG	110	103	FEWKING		BROWN FRAGS; FREQUENT VOIDS; KNOBBLY
17	2	TAP	31	4	FESMELT		BALLS, DRIBBLES AND FLOWS
17	2	TAP	636	3162	FESMELT		MAINLY VERY SMALL PIECES - FEW LARGE
17	2	VITHL	2	75	FEWKING		THICK COATING IRON SLAG; 1 WITH RIM/EDGE; BLACK BACK
18	3	FURNST	33	139	FESMELT		8 WITH SURFS; 3 OXIDIZED REST REDU
18	3	MAGMAT	0	159			>7MM; MOST SLAG/IRON; SOME ORE
18	3	MAGMAT	0	365	FESMITH		<2MM; 10ML=14G; OCCASIONAL HAMMS; MOST P LESS S; DUSTY
18	3	MAGMAT	0	645			2-7MM; 20ML=27G; 1XBLOB; NO HAMMS; MOST SLAG/IRON; SOME ORE; RARE PRILL
18	3	ORE	11	83			UNROASTED
18	3	ORE	65	235	FESMELT		ROASTED
18	3	PROTOHB	2	28	FESMITH?		MAG; 25X35X10MM; 30X35X15MM; BOTH BROWN
18	3	SLAG	1	5	FEWKING		BROWN; MAG; SSL? XRAY TO CONFIRM IDENTIFICATION
18	3	SLAG	1	60	FESMITH?		HB? TOTALLY ENCRUSTED; 50X50X20MM
18	3	SLAG	3	23	FEWKING	CHARC	LIKE MINI FURNACE SLAG; WHOLE; LOTS LARGE CHARC IMPRINTS
18	3	SLAG	4	23	FESMELT		VIT FURNST
18	3	SLAG	6	71	FESMITH?		ALL BROWN; SSLS? 1XPROTOHB?
18	3	SLAG	11	38	FESMELT	CHARC	PROB FROTHY TAP FROM MIDDLE OF PIECES; MASS VOIDS; LOTS CHARC IMPRINTS
18	3	SLAG	75	57	FEWKING		MAG; SMALL FRAGS; BROWN; SOME IRON?
18	3	SLAG	178	146	FEWKING		BROWN; KNOBBLY; ALL VERY SMALL
18	3	SLAG	294	205	FEWKING		
18	3	TAP	50	18	FESMELT		BALLS; BLOBS AND DRIBBLES
18	3	TAP	560	3369	FESMELT		MOST SMALL; MOST THIN PLATES
19	0	SLAG	1	1			GREY/FAWN
19	0	SLAG	1	66	FEWKING		NO SURFS; SLIGHTLY BUBBLY; SOME FURNST
19	0	TAP	1	41	FESMELT		LOTS ORE INCLUSIONS
19	0	TAP	1	233	FESMELT		PLATE; MAG LUMP ATTACHED - IRON/SLAG?
19	0	TAP	5	200	FESMELT		FLOWS
19	0	TAP	83	3538	FESMELT		PLATE; SOME LAYERED; MOST LARGE FLOWS; BASE SAND/ORE
19	5	IRON	5	32	FEWKING		2 WITH TAP ATTACHED; XRAY TO CONFIRM IDENTIFICATION
19	5	MAGMAT	0	20	FESMITH		<2MM; 10ML=15G; MEDIUM QUITE LGE P; SOME S; FEW PRILL
19	5	MAGMAT	0	48	FESMITH		2-7MM; 20ML=27G; 2XS 5XP; MOST SLAG/IRON; RARE ORE
19	5	ORE	4	45			UNROASTED
19	5	ORE	15	22	FESMELT		ROASTED
19	5	SLAG	9	4	FEWKING		SMALL BROWN FRAGS
19	5	SLAG	9	5	FEWKING		SMALL BROWN FRAGS; MAG
19	5	TAP	1	23	FESMELT		PARTIALLY MAG
19	5	TAP	6	3	FESMELT		BALLS AND DRIBBLES

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19	5 TAP	123	599 FESMELT	MOST FRAGS
20	6 IRON?	4	25 FEWKING	MAG LUMPS; 1 X TAP ATTACHED; XRAY TO CONFIRM IDENTIFICATION
20	6 MAGMAT	0	27	>7MM; MOST IRON/SLAG; 1XTAP
20	6 MAGMAT	0	34 FESMITH	<2MM; 10ML=13G; VERY OCCASIONAL P; DUSTY
20	6 MAGMAT	0	46 FESMITH	2-7MM; 20ML=24G; 2XP 1XS 1XBLOB; MOST IRON/SLAG
20	6 ORE	4	6	UNROASTED
20	6 ORE	7	10 FESMELT	ROASTED
20	6 SLAG	11	16 FEWKING	SMALL BROWN FRAGS
20	6 SLAG	14	13 FEWKING	MAG; BROWN FRAGS
20	6 TAP	2	1 FESMELT	DRIBBLES
20	6 TAP	17	7 FESMELT	BALLS; BLOBS AND DRIBBLES
20	6 TAP	151	988 FESMELT	MOST FRAGS; FLAT PLATES
21	7 MAGMAT	0	33 FESMITH	<2MM; 10ML=12G; VERY OCCASIONAL P RARE S
21	7 MAGMAT	0	45	>7MM; MOST IRON/SLAG; SOME TAP
21	7 MAGMAT	0	46 FESMITH	2-7MM; 20ML=22G; 1X LARGE P; 1XBLOB
21	7 ORE	4	18 FESMELT	ROASTED
21	7 SLAG	7	32 FEWKING	MAG; IRON? SSL?
21	7 TAP	1	35 FESMELT	HB SHAPED
21	7 TAP	7	4 FESMELT	BLOBS AND DRIBBLES
21	7 TAP	122	1231 FESMELT	MORE LARGER PIECES; MOST C. 25MM TH; PLATE FRAGS
22	8 MAGMAT	0	21 FESMITH	2-7MM; 15ML=17G; 2XP?
22	8 MAGMAT	0	22 FESMITH	<2MM; 16ML=20G; SOME P AND S RATIO 4:1 P/S
22	8 ORE	18	27	UNROASTED
22	8 SLAG	2	2 FEWKING	BROWN FRAGS; LARGEST = SSL?
22	8 TAP	1	2 FESMELT	LIGHT GREY; BUBBLY
22	8 TAP	7	1 FESMELT	BALLS; BLOBS AND DRIBBLES
22	8 TAP	61	56 FESMELT	VERY SMALL BITS
24	0 TAP	5	257 FESMELT	SAND AND FURNST ON BASE

CODES USED IN THE ABOVE CATALOGUE.

CHARC	Charcoal.
FESMELT	Iron smelting slag.
FESMITH	Iron smithing slag.
FEWKING	Iron smelting or smithing.
FIRE	Fired clay.
FRAG	Fragment.
FURNST	Fired and vitrified clay that has usually been severely slag attacked and may be from an iron furnace structure.
HAMMS	Hammerscale.
HB	Plano-convex slag accumulations (commonly known as hearth bottoms).
INCL	Inclusions.
MAG	Magnetic.

MAGMAT	Magnetic matter extracted from the samples with a magnet.
MAX	Maximum.
P	Plate hammerscale.
REDU	Reduced.
S	Spheroidal hammerscale.
SSL	Smithing-slag lumps.
SURF	Surface.
TAP	Smelting tapped slag.
TH	Thickness.
VIT	Vitrified.
VITHL	Thick pieces of vitrified or slag attacked clay (possible pieces from a furnace structure).

Appendix 5

GLOSSARY

Anglo-Saxon	Pertaining to the period when Britain was occupied by peoples from northern Germany, Denmark and adjacent areas. The period dates from approximately AD 450-1066.
Bronze Age	A period characterised by the introduction of bronze into the country for tools, between 2250 and 800 BC.
Context	An archaeological context represents a distinct archaeological event or process. For example, the action of digging a pit creates a context (the cut) as does the process of its subsequent backfill (the fill). Each context encountered during an archaeological investigation is allocated a unique number by the archaeologist and a record sheet detailing the description and interpretation of the context (the context sheet) is created and placed in the site archive. Context numbers are identified within the report text by brackets, <i>e.g.</i> [004].
Cropmark	A mark that is produced by the effect of underlying archaeological or geological features influencing the growth of a particular crop.
Cut	A cut refers to the physical action of digging a posthole, pit, ditch, foundation trench, <i>etc.</i> Once the fills of these features are removed during an archaeological investigation the original 'cut' is therefore exposed and subsequently recorded.
Domesday Survey	A survey of property ownership in England compiled on the instruction of William I for taxation purposes in 1086 AD.
Fill	Once a feature has been dug it begins to silt up (either slowly or rapidly) or it can be back-filled manually. The soil(s) that become contained by the 'cut' are referred to as its fill(s).
Furnace	Firing chamber within which iron ore is smelted.
Iron Age	A period characterised by the introduction of Iron into the country for tools, between 800 BC and AD 50.
Iron-smelting	The production of iron, through the melting of iron ore within a furnace
Layer	A layer is a term used to describe an accumulation of soil or other material that is not contained within a cut.
Medieval	The Middle Ages, dating from approximately AD 1066-1500.
Mesolithic	The 'Middle Stone Age' period, part of the prehistoric era, dating from approximately 11000 - 4500 BC.
Natural	Undisturbed deposit(s) of soil or rock which have accumulated without the influence of human activity
Neolithic	The 'New Stone Age' period, part of the prehistoric era, dating from approximately 4500 - 2250 BC.
Old English	The language used by the Saxon (<i>q.v.</i>) occupants of Britain.
Palaeolithic	The 'Old Stone Age' period, part of the prehistoric era, dating from approximately 500000 - 11000 BC in Britain.

Posthole	The hole cut to take a timber post, usually in an upright position. The hole may have been dug larger than the post and contain soil or stones to support the post. Alternatively, the posthole may have been formed through the process of driving the post into the ground.
Post-medieval	The period following the Middle Ages, dating from approximately AD 1500-1800.
Prehistoric	The period of human history prior to the introduction of writing. In Britain the prehistoric period lasts from the first evidence of human occupation about 500,000 BC, until the Roman invasion in the middle of the 1st century AD.
Ridge and Furrow	The remains of arable cultivation consisting of raised rounded strips separated by furrows. It is characteristic of open field agriculture.
Romano-British	Pertaining to the period dating from AD 43-410 when the Romans occupied Britain.
Saxo-Norman	This term is used to define the transition from the Anglo-Saxon to the Medieval period which occurred between approximately AD 850-1150. The Domesday Survey was compiled towards the end of this period in AD 1086.
Transformed	Soil deposits that have been changed. The agencies of such changes include natural processes, such as fluctuating water tables, worm or root action, and human activities such as gardening or agriculture. This transformation process serves to homogenise soil, erasing evidence of layering or features.

Appendix 6

THE ARCHIVE

The archive consists of:

26	Context records
5	Scale drawings
1	Photographic record sheet
2	Boxes of finds
1	Stratigraphic matrix

All primary records and finds are currently kept at:

Archaeological Project Services
The Old School
Cameron Street
Heckington
Sleaford
Lincolnshire
NG34 9RW

The ultimate destination of the project archive is:

Lincolnshire City and County Museum
12 Friars Lane
Lincoln
LN2 1HQ

The archive will be deposited in accordance with the document titled *Conditions for the Acceptance of Project Archives*, produced by the Lincolnshire City and County Museum.

Lincolnshire City and County Council Museum Accession Number:
Archaeological Project Services Site Code:

LCNCC: 2003:97
SSL03

The discussion and comments provided in this report are based on the archaeology revealed during the site investigations. Other archaeological finds and features may exist on the development site but away from the areas exposed during the course of this fieldwork. *Archaeological Project Services* cannot confirm that those areas unexposed are free from archaeology nor that any archaeology present there is of a similar character to that revealed during the current investigation.

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