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**LAND SOUTH EAST OF SCANIA WAY, KING'S LYNN,
NORFOLK**

AN ARCHAEOLOGICAL EVALUATION

| | | | |
|-------------------------|--|----------------------|--|
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| NGR: TF 6349 1857 | | Report No. 4020 | |
| District: King's Lynn | | Site Code: ENF127497 | |
| Approved: C Halpin MIfA | | Project No. 3261 | |
| Signed: | | Date: February 2012 | |

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OASIS SUMMARY SHEET

| | | | |
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| Project details | | | |
| Project name | <i>Land South East of Scania Way, King's Lynn, Norfolk.</i> | | |
| Project description | | | |
| <p><i>In December 2011 and January/February 2012, Archaeological Solutions (AS) undertook an archaeological trial trench evaluation at land south east of Scania Way, King's Lynn, Norfolk (NGR TF 6349 1857). The evaluation was carried out in compliance with a planning condition attached planning permission for a new Sainsbury's superstore with associated cold store and parking facilities (Planning Ref. 09/00216/OM).</i></p> <p><i>It is probable that Hardwick saw transitory prehistoric activity and possible Roman industrial activity in the vicinity of the site. There is a dearth of Anglo-Saxon remains but the medieval village of Hardwick is documented in the historical record from 1242 AD. The location of the deserted medieval village is unknown but cropmarks within and close to the site boundary indicate that medieval activity in relation to the village may lie close to the site. Early cartographic sources also indicate that the site may lie on the outskirts of a medieval green. The site was agricultural in character from the post-medieval period with the presence of Firs Farm on the site up until the early 20th century. Industrial development from the 1960's is likely to have truncated a large proportion of the site although isolated pockets of land in the centre of the site may lie undisturbed indicating a potential for producing well preserved remains in those areas.</i></p> <p><i>Nine trenches were excavated and significant archaeology was recorded in Trenches 3 and 4. A very large pit (F1041) in excess of 22m across contained numerous tips of large quantities of 13th/14th century tile wasters and layers of pure brown clay. This pit was probably the result of quarrying the clay used for the manufacture of roof tiles in the immediate vicinity.</i></p> | | | |
| Project dates (fieldwork) | <i>13.12.2011- 19.12.2011, 16th Jan – 1st Feb 2012,</i> | | |
| Previous work (Y/N/?) | <i>N</i> | Future work (Y/N) | <i>TBC</i> |
| P. number | <i>3261</i> | Site code | <i>ENF 127497</i> |
| Type of project | <i>Archaeological Evaluation</i> | | |
| Site status | <i>None</i> | | |
| Current land use | <i>Cold store and parking</i> | | |
| Planned development | <i>Superstore</i> | | |
| Main features (+dates) | <i>Medieval (14th C) quarry pit backfilled with roof tile wasters</i> | | |
| Significant finds (+dates) | <i>Medieval (14th C) roof tile wasters</i> | | |
| Project location | | | |
| County/ District/ Parish | <i>Norfolk</i> | <i>King's Lynn</i> | <i>North Runcton</i> |
| HER/ SMR for area | <i>Norfolk Historic Environment Service</i> | | |
| Post code (if known) | <i>PE30 4LR</i> | | |
| Area of site | <i>5.085ha</i> | | |
| NGR | <i>TF 6349 1857</i> | | |
| Height AOD (max/ min) | <i>c. 3-5m</i> | | |
| Project creators | | | |
| Brief issued by | <i>Norfolk County Council Historic Environment Service</i> | | |
| Project supervisor/(PO) | <i>T. Schofield, C. Leonard, G Barlow</i> | | |
| Funded by | <i>Riley Consulting</i> | | |
| Full title | <i>Land South East of Scania Way, King's Lynn, Norfolk. An Archaeological Evaluation.</i> | | |
| Authors | <i>Leonard, C. and Barlow, G.</i> | | |
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| Date (of report) | <i>February 2012 (Revised January 2013)</i> | | |

LAND SOUTH EAST OF SCANIA WAY, KING'S LYNN, NORFOLK

ARCHAEOLOGICAL EVALUATION

SUMMARY

In December 2011 and January/ February 2012, Archaeological Solutions (AS) undertook an archaeological trial trench evaluation at land south east of Scania Way, King's Lynn, Norfolk (NGR TF 6349 1857). The evaluation was carried out in compliance with a planning condition attached planning permission for a new Sainsbury's superstore with associated cold store and parking facilities (Planning Ref. 09/00216/OM).

It is probable that Hardwick saw transitory prehistoric activity and possible Roman industrial activity in the vicinity of the site. There is a dearth of Anglo-Saxon remains but the medieval village of Hardwick is documented in the historical record from 1242 AD. The location of the deserted medieval village is unknown but cropmarks within and close to the site boundary indicate that medieval activity in relation to the village may lie close to the site. Early cartographic sources also indicate that the site may lie on the outskirts of a medieval green. The site was agricultural in character from the post-medieval period with the presence of Firs Farm on the site up until the early 20th century. Industrial development from the 1960's is likely to have truncated a large proportion of the site although isolated pockets of land in the centre of the site may lie undisturbed indicating a potential for producing well preserved remains in those areas.

Nine trenches were excavated and significant archaeology was recorded in Trenches 3 and 4. A very large pit (F1041) in excess of 22m across contained numerous tips of large quantities of 13th/14th century tile wasters and layers of pure brown clay. This pit was probably the result of quarrying the clay used for the manufacture of roof tiles in the immediate vicinity.

1 INTRODUCTION

1.1 In December 2011 and January/February 2012, Archaeological Solutions (AS) undertook an archaeological trial trench evaluation at land south east of Scania Way, King's Lynn, Norfolk (NGR TF 6349 1857; Figs. 1 & 2). The evaluation was carried out in compliance with a planning condition attached planning permission for a new Sainsbury's superstore with associated cold store and parking facilities (Planning Ref. 09/00216/OM).

1.2 The archaeological evaluation was undertaken according to a brief issued by Norfolk County Council Historic Environment Service (dated 22/06/11), and a specification prepared by AS (dated 23/06/11) and approved by NCC HES. It adhered to *Standards for Field Archaeology in the East of England* (Gurney 2003) and the Institute for Archaeologists' (IFA) Code of

Conduct (revised 2010) and *Standard and Guidance for Archaeological Field Evaluation* (revised 2008).

1.3 The aim of the archaeological evaluation was to determine, as far as was possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development.

1.4 The principal research objective of the evaluation was to identify any evidence associated with the medieval settlement of Hardwick.

Planning policy context

1.5 The report was undertaken in conjunction with the relevant planning policies, which apply to the effect of development with regard to cultural heritage. Of particular relevance was Planning Policy Statement 5 (PPS5, 2010), which is widely applied by local authorities. PPS5 states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets. The Planning Policy Statement aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. It aims to conserve England's heritage assets in a manner appropriate to their significance. It states that opportunities to capture evidence from the historic environment and to contribute to our knowledge and understanding of our past, and to make this publicly available, should be taken, particularly where a heritage asset is to be lost.

2 DESCRIPTION OF THE SITE

2.1 The site is located in West Norfolk, 2km south-east of King's Lynn (centre), adjacent to the Hardwick Roundabout within the 1960's development of Hardwick Industrial Estate. The city of Norwich lies 60km to the east.

2.2 The site lies between the A149 main road and Hardwick Road, to the north of the large roundabout named after the area. The hamlet of Hardwick may have medieval origins and it is thought that a deserted medieval village may be located nearby. The site lies within the eastern part of the Hardwick Industrial Estate with industrial structures surrounding the northern and western site border. Agricultural land extends east from the site and Hardwick Farm lies south-east of the site on the opposite side of the A149.

3 THE EVIDENCE

3.1 Topography, geology and soils

3.1.1 Hardwick Road lies at an elevation of 5m AOD and is relatively level across the site with land rising to the south-east towards the village of North Runcton. The solid geology of the area is chalk of the Upper Jurassic close to the eastern edge of the lower cretaceous series (British Geological Survey). The drift geology has sediments of the Kimmeridge clay series above which are marine and river alluvium deposits. The soils of the central parts of King's Lynn remain unsurveyed. The site lies on the border of unsurveyed soils and soils of the Wallasea 2 association (SSEW 1983). These consist of deep stoneless clayey soils which are calcareous in some places (SSEW 1983). Traditionally these soils support winter cereals and arable crops (SSEW 1983).

3.2 Archaeological Background

3.2.1 An archaeological desk-based assessment has been completed for the project (Ungar & Newton 2008). It concluded:

It is probable that Hardwick saw transitory prehistoric activity and possible Roman industrial activity in the vicinity of the site. There is a dearth of Anglo-Saxon remains but the medieval village of Hardwick is documented in the historical record from 1242 AD. The location of the deserted medieval village is unknown but cropmarks within and close to the site boundary indicate that medieval activity in relation to the village may lie close to the site. Early cartographic sources also indicate that the site may lie on the outskirts of a medieval green. The site was agricultural in character from the post-medieval period with the presence of Firs Farm on the site up until the early 20th century. Industrial development from the 1960's is likely to have truncated a large proportion of the site although isolated pockets of land in the centre of the site may lie undisturbed indicating a potential for producing well preserved remains in those areas.

4 METHODOLOGY

4.1 Nine linear trial trenches were excavated using a mechanical excavator fitted with a toothless ditching bucket (Fig. 3). The trenches were located in the areas of the proposed car park, filling station and cold store. The footprint of the proposed store is currently occupied by the existing Pinguin building. Where trenches were excavated below a safe working depth the sides were stepped to ensure safe working practices.

4.2 The overburden was removed stratigraphically under close archaeological supervision using a mechanical 360° excavator fitted with a 1.90m toothless ditching bucket. Thereafter, all further investigation was undertaken by hand. Exposed surfaces were cleaned as appropriate and examined for archaeological features and finds. Deposits were recorded

using *pro forma* recording sheets, drawn to scale and photographed. Excavated spoil was checked for finds and the trenches were scanned by metal detector.

5 DESCRIPTION OF RESULTS

Individual trench descriptions are presented below

Trench 1 (Figs. 3 & 4)

| | | |
|--|-------|--|
| Sample Section 1A (DP2) Northwest end, southwest facing. 0.00= 5.22m AOD | | |
| 0.00- 0.35m | L1005 | Topsoil. Loose, dark greyish brown, clay silt. |
| 0.35- 0.58m | L1006 | Made ground. Compact, mid yellowish brown, clay silt. |
| 0.58-0.65m | L1007 | Made ground. Compact, light brownish yellow, silty sand. |
| 0.65-1.16m | L1008 | Made ground. Compact, mid greyish brown, clay silt. |
| 1.16-1.44m | L1009 | Made ground. Firm, mid blue grey sandy silt. |
| 1.44m+ | L1004 | Natural. Mid greyish orange sand and gravel with mid grey silt lenses. |

| | | |
|--|-------|------------------------|
| Sample Section 1B Southeast end, southwest facing. 0.00= 5.17m AOD | | |
| 0.00- 0.33m | L1005 | Topsoil. As above. |
| 0.33-0.47m | L1006 | Made ground. As above. |
| 0.47-0.60m | L1007 | Made ground. As above. |
| 0.60-0.94m | L1008 | Made ground. As above. |
| 0.94-1.22m | L1009 | Made ground. As above. |

Description: Trench 1 contained three linear features (F1010, F1012 and F1014), all of which contained modern CBM.

Ditch F1010 was linear in plan (1.9+ x 1.05 x 0.24m), orientated northeast/southwest. It had irregular sides and a concave base. Its fill, L1011, was a compact, dark brownish grey, clay silt with occasional small, sub rounded flints. Animal bone (144g) and CBM (500g) were recovered from the fill.

Ditch F1012 was linear in plan (3.2+ x 0.6 x 0.24m), orientated east/west. It had steep sides and a concave base. Its fill, L1013, was a compact, dark brownish grey, clay silt with occasional small, rounded flints. CBM (147g) and glass (6g) were recovered from the fill.

Ditch F1014 was linear in plan (3.6+ x 0.85 x 0.18m), orientated east/west. It had gently sloping sides and a flat base. Its fill, L1015, was a loose, dark brownish grey, clay silt with frequent small, rounded flints. Post-medieval (Late 18th – late 19th century) pottery (159g), animal bone (8g) and CBM (1114g) were recovered from the fill.

Trench 2 (Figs. 3 & 4)

| | | |
|--|-------|--|
| Sample Section 2A Northwest end, southwest facing. 0.00= 4.59m AOD | | |
| 0.00- 0.06m | L1016 | Tarmac car park surface. |
| 0.06- 0.21m | L1017 | Made ground. Friable, mid orange yellow, sand. |
| 0.21- 0.51m | L1006 | Made ground. As above, Tr.1 |
| 0.51- 0.67m | L1023 | Concrete layer. |
| 0.67- 0.91m | L1007 | Made ground. As above, Tr.1 |
| 0.91- 1.22m | L1008 | Made ground. As above, Tr.1 |
| 1.22-1.76m | L1009 | Made ground. As above, Tr.1 |
| 1.76m+ | L1004 | Natural. As above, Tr.1 |

| | | |
|--|-------|------------------------------|
| Sample Section 2B Southeast end, southwest facing. 0.00= 4.30m AOD | | |
| 0.00- 0.08m | L1016 | Tarmac car park surface. |
| 0.08- 0.28m | L1017 | Made ground. As above. |
| 0.28- 0.59m | L1006 | Made ground. As above, Tr.1. |
| 0.59- 0.67m | L1007 | Made ground. As above, Tr.1. |
| 0.67- 1.29m | L1008 | Made ground. As above, Tr.1. |
| 1.29- 1.59m | L1009 | Made ground. As above, Tr.1. |
| 1.59m+ | L1004 | Natural. As above, Tr.1. |

Description: Trench 2 contained an undated linear ditch (F1018).

Ditch F1018 was linear in plan (2.55+ x 0.7 x 0.13m), orientated north/south. It has steep sides and a gradual break of slope to a concave base. Its fill, L1019, was a compact, dark greyish brown, clay silt with occasional small, rounded flints. No finds were present within the fill.

Test Pits 1 & 2 (Figs. 3 & 6)

Two test pits cut at the southern end of the initial proposed location of Trench 3 were recorded on 20th January 2011 (the location of Trench 3 was subsequently moved to the north). The actual excavation of these pits was not observed.

| | | |
|--|-------|--|
| Section TP1 Northwest facing. 0.00 = 4.42m AOD | | |
| 0.00 – 0.20m | L1030 | Topsoil. |
| 0.20 – 0.45m | L1033 | Fill of modern service Trench F1032. Firm, mid grey brown sandy silt with thin layers of pale yellow brown sand and occasional small and medium angular and sub-angular flints. |
| 0.45 – 1.25m | L1031 | Modern made ground. Mixed lenses of firm, mid orange brown (c.50%) and mid grey brown (c.50%) sandy silt with occasional-moderate small and medium angular and sub-angular flints. |
| 1.25m+ | L1004 | Natural deposits. As Trench 1. |

Description: Test Pits 1 and 2 contained no archaeological features or finds. Test Pit 1 contained entirely modern service trenches and modern made ground. Test Pit 2 was cut solely into the fill of a modern gas main trench.

Trench 3 (Fig. 3)

Due to Test Pits 1 and 2 revealing such a large number of services and the high probability of encountering more along its length, Trench 3 was relocated from its original proposed location, adjacent to the effluent treatment plant, further to the north so as to be entirely within the current car park. Even here services dictated that the trench was divided into two. The bulk of the trench (Tr. 3A) lying to the north of a current live drain, and a short trench (Tr. 3B) to the south. The dimensions of Trench 3B were restricted by further services on its eastern and southern sides.

| | | |
|---|-------|---|
| Sample Section 3A (DP9) North end, west facing. 0.00= 3.78m AOD | | |
| 0.00 – 0.08m | L1068 | Tarmac layer. Extant car park surface. |
| 0.08 – 1.10m | L1067 | Modern made ground. Friable, mid brownish orange sand with occasional large and very large sub-rounded sandstone. |
| 1.10m+ | L1080 | Firm, dark brownish grey silty clay with frequent tile fragments. It contained medieval tiles. |

| | | |
|---|-------|--|
| Sample Section 3B South end, west facing. 0.00= 3.33m AOD | | |
| 0.00 – 0.09m | L1068 | Tarmac layer. As above. |
| 0.09 – 1.00m | L1067 | Modern made ground. As above. |
| 1.00 – 1.18m | L1084 | Modern made ground. Firm, mid-dark blue grey silty clay. |
| 1.18m+ | L1080 | Layer. As above. It contained medieval tiles. |

| | | |
|--|-------|--|
| Sample Section 3C (DP12) South end, west facing. 0.00= 3.31m AOD | | |
| 0.00 – 0.08m | L1068 | Tarmac layer. As above. |
| 0.08 – 0.66m | L1067 | Modern made ground. As above. |
| 0.66 – 0.86m | L1085 | Modern made ground. Firm, mid brownish grey silty clay. |
| 0.86 – 0.95m | L1086 | Modern made ground. Loose, crushed Tarmac. |
| 0.95m+ | L1081 | Layer. Firm, pale greenish grey silty clay. It contained medieval tiles. |

Description: Trench 3 contained two layers (L1080 & L1081), extending its full length, which contained medieval tile waster fragments. Six test pits were excavated through these layers; no notable variation in their depths was recorded and no test pit sections are illustrated herein. Augering through the base of Test Pit 3 revealed that these in turn overlay two natural clay layers (L1082 & L1083) with the natural sand and gravel (L1004) encountered below these.

L1080 was present only in Trench 3A. It was a 0.20 – 0.35m thick layer of firm, dark brownish grey silty clay with frequent 14th century tile waster fragments (12860g). Due to the large quantity of fragments only a sample was retained for analysis.

L1081 was present in both Trench 3A and 3B. It was a 0.38 – 0.75m thick layer of firm, pale greenish grey silty clay. It contained 14th century tile waster fragments (4300g).

L1082 was present in both Trench 3A and 3B. It was a 0.20m thick layer of firm, pale-mid grey very sandy clay.

L1082 was only revealed by the auger test in Test Pit 3. It was a 0.25m thick layer of firm, pale-mid grey brown clay overlying the natural sand and gravel (L1004).

Trench 4 (Figs. 3 & 5)

Trench 4 was cut through a large feature (F1041) that extended the full length of the trench, and beyond the south-western end. F1041 was cut by two post-medieval or modern ditches (F1060 & F1062). Due to the size of F1041 two slots (2.00x1.00m at the south-western end and 2.10x1.70m at the north-eastern end of the trench), were excavated by hand; the remainder was excavated largely by machine. A single continuous section was recorded (Fig. 5).

Overlying F1041, F1060 and F1062 was the extant black Tarmac car park surface (L1068) 0.10m thick. Below this was a 0.58-1.02m thick layer of modern made ground (L1067) consisting of a friable mid brownish orange sand, with occasional large and very large sub-rounded sandstone rocks. It contained no finds.

L1066 was a 0.30m thick layer of made ground consisting of a compact, mid brownish grey silty clay, with moderate small angular and rounded flints, infilling a depression overlying Ditches F1060 and F1062, and the portion of Pit F1041 exposed to the west of Ditch F1060. It did not continue to the east of these ditches. It contained CBM rubble and redeposited 14th century tile.

F1041 was a large pit (22.00+ x 2.00+ x 1.50m) of undetermined shape extending beyond the north-western, south-western, and south-eastern trench sides. The bulk of the feature appeared to be beyond the north-western trench baulk. The north-eastern side of the feature was gently sloping and the base was flat. It has been bisected by a post-medieval or modern ditch (F1060) and the fills either side of this ditch are tabulated below.

| Fill | Description | Thickness | Finds |
|-----------------|--|-----------|---|
| L1059 | Compact, mid grey brown clay, with occasional sub-angular and sub-rounded flint. | 0.18m | 14 th century tile (38g) |
| L1058 | Compact, mid orange brown clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.20m | 14 th century tile (585g) |
| L1057 | Compact, mid yellow grey clay, with occasional small sub-angular and sub-rounded flint. | 0.15m | 14 th century tile (133g) |
| L1056 | Compact, dark grey clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.56m | 14 th century tile (15519g), fired clay (128g) |
| L1055 (=L1052?) | Compact, mid yellow grey clay, with occasional small sub-angular and sub-rounded flint. | 0.25m | 14 th century tile (2562g) |
| L1054 (=L1051?) | Compact, mid orange brown clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.10m | 14 th century tile (4512g) |
| L1053 (=L1050?) | Compact, mid grey brown clay, with occasional sub-angular and sub-rounded flint. | 0.20m | 14 th century tile (287g) |

Table 1: Fills of Pit F1041 to west of Ditch F1062

| Fill | Description | Thickness | Finds |
|-----------------|---|-----------|--------------------------------------|
| L1052 (=L1055?) | Compact, mid brownish grey clay, with occasional small sub-angular and sub-rounded flint. | 0.30m | 14 th century tile (824g) |
| L1051 (=L1054?) | Compact, mid brownish grey clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.20m | 14 th century tile (442g) |
| L1050 (=L1053?) | Compact, mid grey brown clay, with occasional sub-angular and sub-rounded flint. | 0.25m | 14 th century tile (740g) |
| L1049 | Compact, mid grey brown clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.30m | 14 th century tile (950g) |
| L1048 | Compact, mid grey brown clay, with very occasional sub-angular and sub-rounded flint. | 0.40m | 14 th century tile (485g) |
| L1047 | Compact, mid grey brown clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.30m | 14 th century tile (418g) |
| L1046 | Compact, mid grey brown clay, with very occasional small sub-angular and sub-rounded flint. | 0.45m | 14 th century tile (370g) |
| L1045 | Compact, mid orange brown clay, with very frequent medium and large tile fragments and occasional small sub-angular and sub-rounded flint. | 0.14m | 14 th century tile (730g) |
| L1044 | Mixed dumps of mid grey silty clay and mid orange sand, with frequent medium sub-angular and sub-rounded | 0.28m | 14 th century tile (389g) |

| | | | |
|-------|--|-------|--------------------------------------|
| | flint. | | |
| L1043 | Compact, mid brownish grey silty clay, with moderate small and medium sub-angular and sub-rounded flint. | 0.10m | 14 th century tile (398g) |
| L1042 | Compact, dark grey sandy clay, with moderate small angular flints. | 0.10m | None |

Table 2: Fills of Pit F1041 to east of Ditch F1062

| Fill | Description | Thickness | Finds |
|-------|---|--------------|---------------------------------------|
| L1079 | Friable, pale brownish yellow fine sand with occasional small sub-angular flint. | 0.16m | None |
| L1078 | Compact, dark brownish grey silty clay with very frequent tile fragments. | 0.22m | 14 th century tile (1150g) |
| L1077 | Alternating leaves of friable, pale brownish yellow and pale brownish orange sand (50/50) with occasional small angular flints. | 0.17m | None |
| L1076 | Very firm, mid brownish grey silty sand with moderate small angular flints. | 0.15m | None |
| L1075 | Very firm, mid brownish orange silty coarse sand with occasional small angular flints. | 0.19m | None |
| L1074 | Friable, mid orange brown coarse sand with frequent angular and sub-rounded flint gravel. | 0.05 – 0.26m | 14 th century tile (159g) |

Table 3: Fills of Pit F1041 in Slot B

It is likely that Pit F1041 was a quarry pit for the extraction of clay for the manufacture of roof tiles. Un-quarried clay was present immediately to the west, in Trench 3. Thereafter the pit was used to dispose of the waste from this process. As this pit contained a vast quantity of 14th century tile only a sample from each fill was retained.

F1060 was a ditch (2.50+ x 0.70 x 0.72m) orientated northeast/southwest. It cut Pit F1041 and was cut on its western side by Ditch F1062. It had steep sides and a shallow concave base. Its fill (L1061) was a compact, mid grey brown clay silt with occasional small sub-angular and sub-rounded flint. It contained CBM (471g).

F1062 was a ditch (2.50+ x 3.20 x 1.40m) orientated northeast/southwest. It cut completely through Pit F1041 and also cut Ditch F1060 on its eastern side. It had been recut by Ditch F1064. Its fill (L1063) was a compact, mid grey brown clay silt, with occasional small sub-angular and sub-rounded flint. It contained CBM (909g) and animal bone (53g).

F1064 was a recut (2.50+ x 1.05 x 0.70m) of Ditch F1062. Its fill (L1065) was a compact, mid orange brown clay silt. It contained re-deposited 14th century tile. A land drain had been placed almost at the base of this ditch suggesting that this may be an oversize trench cut for this drain rather than a ditch in its own right.

Trench 5 (Fig. 3)

| | | |
|---|-------|--|
| Sample Section 5A (DP20) Northeast end, northwest facing. 0.00= 4.98m AOD | | |
| 0.00- 0.16m | L1000 | Topsoil. Loose, dark greyish brown, sandy silt. |
| 0.16- 0.39m | L1001 | Made ground. Firm, dark greyish orange, sandy silt. |
| 0.39- 0.63m | L1002 | Buried topsoil. Compact, dark greyish brown, sandy silt. |
| 0.63- 0.82m | L1003 | Buried subsoil. Firm, mid orange grey, sandy silt. |
| 0.82m+ | L1004 | Natural. As above, Tr.1. |

| | | |
|---|-------|---------------------------|
| Sample Section 5B Southwest end, northwest facing. 0.00= 4.77m AOD | | |
| 0.00- 0.16m | L1000 | Topsoil. As above. |
| 0.16- 0.34m | L1001 | Made ground. As above. |
| 0.34- 0.44m | L1002 | Buried topsoil. As above. |
| 0.44- 0.64m | L1003 | Buried subsoil. As above. |
| 0.64m+ | L1004 | Natural. As above, Tr.1. |

Description: Trench 5 contained no archaeological features or finds.

Trench 6 (Fig. 3)

| | | |
|--|-------|--|
| Sample Section 6A Northwest end, southwest facing 0.00 = 4.40m AOD | | |
| 0.00 – 0.12m | L1070 | Tarmac. Extant yard surface. |
| 0.12 – 0.25m | L1071 | Modern made ground. Firm, pale orange brown silty coarse sand. |
| 0.25 – 0.41m | L1072 | Modern made ground. Very firm, pale brownish grey silty sand with frequent crushed concrete. |
| 0.41 – 0.72m | L1073 | Modern made ground. Compact, darkish brownish grey silty sand, with occasional-moderate small and medium angular and sub-angular flints. |
| 0.72m+ | L1004 | Natural deposits. As above, Tr. 1. |

| | | |
|--|-------|--|
| Sample Section 6B Southeast end, southwest facing 0.00 = 4.42m AOD | | |
| 0.00 – 0.13m | L1070 | Tarmac. Extant yard surface. |
| 0.13 – 0.25m | L1071 | Modern made ground. Firm, pale orange brown silty coarse sand. |
| 0.25 – 0.38m | L1072 | Modern made ground. Very firm, pale brownish grey silty sand with frequent crushed concrete. |
| 0.38 – 0.68m | L1073 | Modern made ground. Compact, darkish brownish grey silty sand, with occasional-moderate small and medium angular and sub-angular flints. |
| 0.68m+ | L1004 | Natural deposits. As above, Tr. 1. |

Description: Trench 6 contained no archaeological features or finds.

Trench 7 (Fig. 3)

| | | |
|---|-------|---|
| Sample Section 7A Southwest end, southeast facing. 0.00 = 4.30m AOD | | |
| 0.00 – 0.10m | L1024 | Tarmac. Extant yard surface. |
| 0.10 – 0.20m | L1028 | Modern made ground. Compact, pale yellow grey sand and crushed concrete. |
| 0.20 – 0.36m | L1029 | Modern made ground. Compact, black crushed Tarmac. |
| 0.36 – 0.64m | L1026 | Modern made ground. Compact, pale blue grey concrete rubble with some veins of dark red brown silty sand. |
| 0.64 – 1.10m | L1027 | Modern made ground. Compact, red brick (frogged) rubble with dark red brown sandy silt, |
| 1.10m+ | L1004 | Natural deposits. As above, Tr. 1. |

| | | |
|--|-------|------------------------------------|
| Sample Section 7B Centre, southeast facing. 0.00 = 4.27m AOD | | |
| 0.00 – 0.13m | L1024 | Tarmac. As above. |
| 0.13 – 0.49m | L1026 | Modern made ground. As above. |
| 0.49 – 0.82m | L1027 | Modern made ground. As above. |
| 0.82m+ | L1004 | Natural deposits. As above, Tr. 1. |

| | | |
|--|-------|-----------------------------------|
| Sample section 7C Centre, northwest facing. 0.00 = 4.27m AOD | | |
| 0.00 – 0.09m | L1024 | Tarmac. As above. |
| 0.09 – 0.23m | L1025 | Poured pale yellow grey concrete. |
| 0.23 – 0.46m | L1026 | Modern made ground. As above. |
| 0.46 – 0.64m | L1027 | Modern made ground. As above. |
| 0.64m+ | L1004 | Natural deposits. As Trench 1. |

| | | |
|---|-------|---|
| Sample section 7D Northeast end, southeast facing. 0.00 = 4.24m AOD | | |
| 0.00 – 0.13m | L1024 | Tarmac. As above. |
| 0.13 – 0.26m | L1037 | Modern made ground. Firm, pale orange brown silty coarse sand. |
| 0.26 – 0.40m | L1038 | Modern made ground. Very firm, pale brownish grey silty sand with frequent crushed concrete. |
| 0.40 – 0.61m | L1039 | Modern made ground. Compact, darkish brownish grey silty sand (c90%) with leaves of very dark brownish grey silty sand (c10%), and occasional-moderate small and medium angular and sub-angular flints. |
| 0.61 – 0.70m | L1040 | Possible buried soil. Very firm, mid grey brown silty sand with occasional-moderate small and medium angular and sub-angular flints. |
| 0.70m+ | L1004 | Natural deposits. As Trench 1. |

Description: Trench 7 contained no archaeological features or finds. L1040 was patchy and only present in the north eastern half of the trench. It may represent a remnant of an undated buried soil or simply patches of different material at the base of the made ground.

Trench 8 (Fig. 3)

| | | |
|---|-------|---|
| Sample Section 8A South end, east facing. 0.00= 3.27m AOD | | |
| 0.00- 20m | L1020 | Topsoil. Loose, dark greyish brown, sandy silt. |
| 0.20- 0.35m | L1021 | Subsoil. Loose, mid orange brown, sandy silt. |
| 0.35m+ | L1022 | Natural. Light yellowish grey, sand and gravel. |

| | | |
|---|-------|--------------------|
| Sample Section 8B North end, east facing. 0.00= 3.24m AOD | | |
| 0.00- 0.20m | L1020 | Topsoil. As above. |
| 0.20-0.35m | L1021 | Subsoil. As above. |
| 0.35m+ | L1022 | Natural. As above. |

Description: Trench 8 contained no archaeological features or finds. A linear feature was observed in Trench 8, following the contours of a deposit of modern building materials seen in Trench 9. The linear feature contained modern cultural material, including plastic bags within its backfill, and was not excavated.

Trench 9 (Fig. 3)

| | | |
|--|-------|--------------------------|
| Sample Section 9A West end, north facing. 0.00= 3.67mAOD | | |
| 0.00- 0.28m | L1020 | Topsoil. As above, Tr.8. |
| 0.28- 0.54m | L1021 | Subsoil. As above, Tr.8. |
| 0.54m+ | L1022 | Natural. As above, Tr.8. |

Description: Trench 9 contained no archaeological features or finds. The eastern length of 26.68m of this trench was excavated through a large deposit of material covered by turf. The deposit contained modern building material including steel bars for reinforced concrete and plastic. At the east end of the trench, the top of the deposit was 2.74m above the level of the natural.

6 CONFIDENCE RATING

6.1 The trenches were excavated piecemeal, Test Pits 1-3 were recorded after their excavation, and groundwater was present in some of the trenches. These factors did not inhibit the recognition of archaeological features or finds during the evaluation.

7 DEPOSIT MODEL

7.1 The deposit model varied greatly across the site. At the southern end (Trenches 1 & 2) of the site, to the east the Topsoil (L1005) was a 0.35m thick layer of loose, dark greyish brown, clay silt. Beneath this were four layers of

modern made ground. L1006 was a compact, mid yellowish brown, clay silt layer (0.23m thick). Below this was L1007, a compact, light brownish yellow, silty sand layer (0.07m thick). Below this was L1008, compact, mid greyish brown, clay silt layer (0.51m thick). Below this and overlying the natural deposits (L1004) was L1009, a firm, mid blue grey sandy silt layer (0.28m thick). The natural deposits (L1004), consisting of mid greyish orange sand and gravel with mid grey silt lenses were encountered at a depth of 1.44m.

7.2 To the west the current surface consisted of a Tarmac layer (L1016; 0.08m thick) which overlay a made ground layer (L1017; 0.15m thick) consisting of friable, mid orange yellow, sand. Beneath this was a 0.30m thick layer of L1006. Below this was a 0.16m thick concrete layer (L1023). Below this concrete the model was similar to the above with L1007 (0.24m), over L1008 (0.31m), over L1009 (0.54m), with the natural deposits (L1004) at the base of the sequence encountered at a depth of 1.76m.

7.3 In the car park area on the western side of the site (Trenches 3, 4 & 5), the car park surface (L1068) was a 0.10m thick layer of Tarmac overlying a made ground layer (L1067) of between 0.45 and 1.02m thick consisting of friable, mid brownish orange sand, with occasional large and very large sub-rounded sandstone rocks. In Trench 4 the natural deposits (L1004) were encountered at a depth of 0.45m, whilst in Trench 3 to the extreme west, L1067 overlay a further layer of modern made ground (L1084) 0.18m thick consisting of firm, mid-dark blue grey silty clay. Below this was a 0.30m thick layer (L1080) of firm, dark brownish grey silty clay with frequent 14th century tile fragments. Below this was a 0.31m thick layer (L1081) of firm, pale greenish grey silty clay that also contained 14th century tile fragments. Below this was a 0.20m thick layer (L1082) of firm, pale-mid grey very sandy clay. Below this was a 0.25m thick layer (L1083) of firm, pale-mid grey brown clay. Finally, the natural deposits (L1004) were encountered at a depth of 2.50m.

7.4 A grassed area on the eastern side of the car park (Trench 5) had a 0.16m thick layer (L1000) of topsoil consisting of a loose, dark greyish brown, sandy silt. Beneath this was a 0.23m thick layer (L1001) of made ground consisting of firm, dark greyish orange, sandy silt. This was on top of a buried topsoil (L1002) 0.24m thick consisting of compact, dark greyish brown, sandy silt, overlying a 0.19m thick layer of buried subsoil (L1003) consisting of firm, mid orange grey, sandy silt. The natural deposits (L1004) were encountered at a depth of 0.82m.

7.5 In the centre of the site (Trenches 6 & 7) the extant yard surface (L1024 = L1070) was a 0.12m thick layer of Tarmac. In the northern half this was overlying a 0.13m thick layer (L1037 = L1071) of firm, pale orange brown silty coarse sand made ground. Below this was a 0.15m thick layer (L1038 = L1072) of very firm, pale brownish grey silty sand with frequent crushed concrete. Below this was a made ground layer (L1039 = L1073) varying between 0.21m and 0.31m thick consisting of compact, darkish brownish grey silty sand (c90%) with leaves of very dark brownish grey silty sand (c.10%), and occasional-moderate small and medium angular and sub-angular flints. In Trench 7 only there was then an intermittent layer (L1040), 0.09m thick, of

possible buried soil consisting of very firm, mid grey brown silty sand with occasional-moderate small and medium angular and sub-angular flints. At the base of the sequence were the natural deposits (L1004) at a depth of 0.70m.

7.6 In the southern half of this area the Tarmac (L1024) was overlying a 0.10m thick layer (L1028) of compact, pale yellow grey sand and crushed concrete made ground. Below this was a 0.16m thick layer (L1029) of compact, black crushed Tarmac. Below this was a 0.28m thick layer (L1026) of compact, pale blue grey concrete rubble with some veins of dark red brown silty sand. Below this was a 0.46m thick layer (L1027) of compact, red brick (frogged) rubble with dark red brown sandy silt made ground. At the base of the sequence were the natural deposits (L1004) at a depth of 1.10m.

7.7 In the north eastern corner of the site (Trenches 8 & 9) the topsoil (L1020) was a 0.20 – 0.28m thick layer of loose, dark greyish brown, sandy silt overlying the subsoil (L1021). This subsoil consisted of a layer of loose, mid orange brown, sandy silt between 0.15m and 0.26m thick. The natural deposits (L1022) consisting of light yellowish grey, sand and gravel were encountered at a depth of between 0.35m and 0.54m.

8 DISCUSSION

8.1 Seven features and two layers were identified in Trenches 1 - 3 & 4. Trenches 5 – 9 contained no archaeological features or finds. Of the identified features six were post-medieval or modern ditches (F1010, F1012, F1014, F1018, F1060, & F1062) and one (F1041) was a large 13th/14th century quarry pit. The two layers in Trench 3 (L1080 & L1081) were also of 13th/14th century date.

8.2 The excavated features are tabulated:

| Trench | Context | Description | Spot date |
|--------|---------|----------------------|--|
| 1 | F1010 | Ditch | Post medieval or modern |
| 1 | F1012 | Ditch | Post medieval or modern |
| 1 | F1014 | Ditch | Post medieval or modern |
| 2 | F1018 | Ditch | Undated |
| 3 | L1080 | Layer | 13 th /14 th century |
| 3 | L1081 | Layer | 13 th /14 th century |
| 4 | F1041 | Quarry pit/Tile dump | 13 th /14 th century |
| 4 | F1060 | Ditch | Post medieval or modern |
| 4 | F1062 | Ditch | Post medieval or modern |

8.3 Chronologically the features divide into two phases. The most recent features were recorded in Trenches 1 & 2 in the southernmost area of the site and comprised of four ditches (F1010, F1012, F1014, & F1018). Of these, F1010, F1012, and F1014 were post-medieval or modern, while F1018 was undated. The proximity of these features to the site of 'The Firs' farm buildings recorded on the 1839 Tithe map and the 1st and 2nd edition OS maps, now under the southern end of the cold store, suggest they may be associated with this farm. Two post-medieval or modern ditches (F1060 & F1062), orientated

northeast/ southwest, were recorded in Trench 4. The larger (F1062), on a very slightly different alignment, cut the smaller (F1060). Ditch F1062 must have gone out of use as a boundary because a field drain (F1064) had been inserted rather than the ditch being re-cut/cleaned out. These ditches may correspond to one shown on the 1st and 2nd edition OS maps but had disappeared by the time of the 1968 OS map.

8.4 The earliest features were recorded in Trenches 3 and 4, located in the car park on the western side of the site. Trench 3 contained two layers (L1080 & L1081) dated to the 13th/14th century. The uppermost of these two layers (L1080) consisted of a firm, dark brownish grey silty clay with frequent 13th/14th century tile waster fragments. It may represent a made ground layer over the clay (L1081) beneath or possibly the base of a dump/mound of waste material long since levelled. It extended beyond the northern end of the trench but was not present in the southern end (Trench 3B). Below this was a layer (L1081) of firm, pale greenish grey silty clay. This looked like it was a natural deposit but it too contained 13th/14th tile fragments throughout its depth. It seems possible then that this may be redeposited, perhaps quarried but found to be of insufficient quality. It overlay a layer (L1082) of much sandier clay clearly of no use.

8.5 Close by to the east Trench 3 contained a very large pit (F1041) in excess of 22m across that contained numerous tips of large quantities of 13th/14th century tile wasters and layers of pure brown clay. This pit was probably the result of quarrying the clay used for the manufacture of roof tiles in the immediate vicinity. The pit, once quarried out it, was used for the disposal of the wasters and other waste from this process. It was used entirely for this purpose; there was almost no evidence of any domestic or demolition waste, e.g. pottery, bricks and animal bone.

8.6 The CBM report (below) concludes that the high concentration of CBM contained in Pit F1041 and the significant distribution of smaller fragments in Layers L1080 and L1081 clearly represent waster deposits from a medieval tile kiln in the immediate vicinity. The primary products of this tile kiln were plain peg tiles, although splash-glazed ridge tiles may also have been produced. Low quantities of 'waster' CBM in ditches suggests that their may have been contemporary enclosures open around the area of the kilns, although there is no indication waster material was directly dumped into them. Sparse bricks in the assemblage may have formed part of the kilns or associated industrial structures but were not produced on the site. The fabrics and forms of the roof tile and brick in this assemblage suggest this kiln may have been active in the late 13th to 14th centuries, possibly into the 15th century. Roof tiles would have been produced for relatively high status medieval buildings, of which there would have been a significant number in the mercantile town of Kings Lynn, as evidenced by excavations in the town. Although an actual kiln was not recorded, this assemblage represents the first medieval kiln producing roof tile recorded in the vicinity of the town (CBM Report below).

9 DEPOSITION OF ARCHIVE

9.1 Archive records, with an inventory, will be deposited with the finds from the site, at Norwich Castle Museum. The archive will be quantified, ordered, indexed, cross-referenced and checked for internal consistency. In addition to the overall site summary, it will be necessary to produce a summary of the artefactual and ecofactual data.

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APPENDIX 1 CONCORDANCE OF FINDS BY FEATURE

| Feature | Context | Trench | TP | Description | Spot Date | Pottery | CBM (g) | A. Bone (g) | Other |
|---------|---------|--------|-----|-------------|---------------------|-----------|---------|-------------|-------------------|
| U/S | U/S | | | | | | 1343 | | |
| 1010 | 1011 | 1 | | Ditch | | | 500 | 144 | |
| 1012 | 1013 | 1 | | Ditch | | | 147 | | Glass (3) - 6g |
| 1014 | 1015 | 1 | | Ditch | Late 18th late 19th | (11) 159g | 1114 | 8 | |
| 1041 | 1043 | 4 | | Pit | | | 398 | | |
| | 1044 | | | | | | 389 | | |
| | 1045 | | | | | | 730 | | |
| | 1046 | | | | | | 370 | | |
| | 1047 | | | | Late 12th - 14th | (1) 142g | 418 | | |
| | 1048 | | | | | | 485 | | |
| | 1049 | | | | | | 950 | | |
| | 1050 | | | | | | 740 | | |
| | 1051 | | | | | | 442 | | |
| | 1052 | | | | | | 824 | | |
| | 1053 | | | | | | 287 | | |
| | 1054 | | | | | | 4512 | | |
| | 1055 | | | | | | 2562 | | |
| | 1056 | | | | | | 15519 | | Fired Clay - 128g |
| | 1057 | | | | | | 133 | | |
| | 1058 | | | | | | 585 | | |
| | 1059 | | | | | | 38 | | |
| 1060 | 1061 | 4 | | Ditch | | | 471 | | |
| 1062 | 1063 | 4 | | Ditch | | | 909 | 53 | |
| 1041 B | 1074 | 4 | | | | | 159 | | |
| | 1078 | | | | | | 1150 | | |
| 1080 | | 3 | TP1 | Layer | | | 1882 | | |
| | | | TP3 | | | | 8232 | | |
| | | | TP4 | | | | 2090 | | |

| | | | | | | | | | | |
|------|---|--|-----|-------|--|--|--|--|------|--|
| 1081 | | | TP5 | | | | | | 656 | |
| | 3 | | TP1 | Layer | | | | | 470 | |
| | | | TP2 | | | | | | 744 | |
| | | | TP3 | | | | | | 946 | |
| | | | TP4 | | | | | | 1629 | |
| | | | TP5 | | | | | | 123 | |
| | | | TP6 | | | | | | 388 | |

APPENDIX 2 SPECIALIST REPORTS

The Pottery

Peter Thompson

The evaluation recovered 11 abraded sherds weighing 265g from two features.

Pit F1041 (L1047) contained a sagging base sherd (135g) with thumb frilling decoration from a medieval jug or possibly a jar. The underside of the base has concretions adhering and may have a slight splash of glaze. The sandy fabric with grey core and grey-brown surfaces is similar to Grimston coarseware.

Ditch F1014 (L1015) contained 10 abraded sherds (130g) of early modern pottery including Creamware and Transfer Printed Ware indicating a late 18th-late 19th century date.

Key:

Medieval sandy coarse ware: mid-12th to 14th/15th

Glazed red earthenware: late 16th-19th

Red stoneware: 18th-19th

Creamware: early 18th-late 19th

Transfer Printed Ware: late 18th-19th

| Feature | Context | Type | Quantity | Date | Comment |
|---------|---------|-------|---|--|---|
| 1014 | 1015 | Ditch | 1x103g glazed red earthenware 1x1g red stoneware 2x7g Transfer Printed ware 5x18g Creamware 1x1g London type stone ware | Late 18 th late 19 th | |
| 1041 | 1047 | Pit | 1x135g medieval coarseware | Late 12 th - 14 th | Rounded jug base with frilled decoration. Probably a Grimston ware |

The Ceramic Building Materials

Andrew Peachey

The trial trench evaluation recovered a total of 698 fragments (51866g) of medieval CBM. The assemblage was dominated by peg tile, including a high proportion of over-fired 'waster fragments'. The bulk of the CBM was contained in a single pit with substantial quantities also recovered from two layers (Table 1). The form and fabric types of CBM present and their distribution indicates that this assemblage represents 'waster' material discarded from a tile kiln in the immediate vicinity that probably dates between the late 13th and 14th centuries.

| Feature | Peg tile | | Ridge Tile | | Brick | |
|-------------------------------|------------|--------------|------------|-----------|----------|-------------|
| | F | W | F | W | F | W |
| Pit F1041 (Tr.4) | 295 | 28821 | 0 | 0 | 4 | 2667 |
| Ditches (Tr.4) | 24 | 1369 | 0 | 0 | 0 | 0 |
| Layers L1080 and L1081 (Tr.3) | 339 | 15756 | 1 | 50 | 1 | 315 |
| Ditches (Tr.1) | 26 | 849 | 0 | 0 | 3 | 951 |
| Un-stratified | 4 | 477 | 0 | 0 | 1 | 611 |
| Total | 688 | 47272 | 1 | 50 | 9 | 4544 |

Table 1: Quantification of medieval CBM form types by frequency (F) and weight (W, in grams) in features

Methodology

The CBM was quantified by fragment count and weight with fabrics examined at x20 magnification and all data entered into a Microsoft Excel spreadsheet that will be deposited as part of the archive.

Fabric Descriptions

Fabrics 1 and 2 are essentially the same fabric, with the former the intended product of the nearby kiln, and the latter over-fired 'waster' fragments of the same fabric broken during firing or rejected at the point of production. Collectively, these two kiln fabrics account for 689 fragments (47322g), almost the entirety of the assemblage (Table 2), of which 83.4% by fragment count (82.9% by weight) is comprised of the over-fired 'waster' Fabric 2. Fabrics 1 and 2 are almost entirely represented by peg tile, with a single fragment of ridge tile also present in Fabric 2.

Fabric 1: Surfaces are orange to orange red, fading to or contrasting with a mid to dark grey core. Inclusions comprise sparse-common, poorly sorted quartz (0.1-0.5mm), sparse reduced iron rich fragments (0.5-2mm), and occasional rounded chalk grains and angular flint (0.5-5mm, rarely larger).

Fabric 2: Surfaces are thin pale brown to cream, sometimes with a reddish tinge or margins, contrasting with a thick very dark grey core. Inclusions (which often appear fused) comprise sparse-common, poorly sorted quartz, sparse reduced iron rich fragments (0.5-2mm), and occasional rounded chalk grains and angular flint (0.5-5mm, rarely larger).

Fabric 3 was used to produce all the bricks in the assemblage, which do not appear to have been manufactured on the site, but may have formed part of the nearby kilns or associated structures

Fabric 3: Pale to mid red throughout. Inclusions comprise common fine quartz and calcareous grains (<0.2mm) with sparse quartz and chalk (0.25-2mm), sparse red clay pellets (0.5-10mm) and fine mica.

| Fabric type | Peg tile | | Ridge Tile | | Brick | |
|--------------|------------|--------------|------------|-----------|----------|-------------|
| | F | W | F | W | F | W |
| Fabric 1 | 115 | 8141 | 0 | 0 | 0 | 0 |
| Fabric 2 | 573 | 39131 | 1 | 50 | 0 | 0 |
| Fabric 3 | 0 | 0 | 0 | 0 | 9 | 4544 |
| Total | 688 | 47272 | 1 | 50 | 9 | 4544 |

Table 2: Quantification of medieval CBM fabric types by frequency (F) and weight (W, in grams) in the total assemblage

Form Types

Peg Tile

The peg tiles have dimensions of 240x150x12-14mm and are approximately flat, although often appear slightly warped. Each peg tile has a single circular peg or nail hole (10-12mm wide) in the centre of one end of the tile. The peg tiles tend to exhibit slightly 'lumpy' surfaces and often also have finger impressions on the edges from where the tiles were handled when they were leather hard. The peg tiles also typically exhibit length ways striations on their upper surface and a sanded base, from when they were pressed into a mould.

The Fabric 1 and 2 peg tile that accounts for the bulk of the assemblage (Table 1) included several complete examples, notably six wholly or nearly complete tiles that were fused together contained in Pit F1041 (L1056). Further incomplete fragments of fused peg tile were also contained in this context and in Layer L1080 (TP4). Pit F1041 contained a total of 295 fragments of peg tile (28821g), with an average fragment weight of 97.7g. Based on the fused tiles in this group a complete peg tile would have weighed c.830g, suggesting that if a tile broke during firing, or the firing temperature/time was miscalculated then the degree of fragmentation was high, even allowing for additional fragmentation during deposition. Pit F1041 appears to represent a primary deposit of 'waster' material from a nearby kiln, whereas Layers L1080 and L1081 may represent a wider re-deposition of this material and therefore the CBM from them has a lower average fragment weight of 46.4g. Low quantities of peg tile were also contained in Ditches F1010, F1012, F1014 (all Tr.1), F1060 and F1062 (Tr.4).

The fused fragments of peg tile in Pit F1041 (L1056) appear to suggest the peg tiles were stacked flat, approximately on top of one another in the kiln. This contrasts with the medieval floor tiles produced at Bawsey c.3km to the east (Eames 1955, 173-5) where fused kiln products were also recorded. The Bawsey floor tiles appear to have been set on edge for firing, although it was noted that schemes of stacking were neither methodical nor rigidly adhered to.

Peg tile had been adopted as a universal building material by the beginning of the 14th century (Drury 1981, 131), and peg tiles of comparable dimensions and in comparable fabrics have been recorded in 13th-14th century deposits at Friars Lane, Kings Lynn (Anderson 2005, 20) and 13th-15th century deposits at Blackfriars Lane, Kings Lynn (Sudds 2004, 42).

Ridge Tile

A single fragment of ridge tile (50g) was recorded in Layer L1081 (TP3). The curved ridge tile has a thickness of 16-18mm, and was unique in the assemblage for having a splashed, dark green lead glaze on its upper surface. The fragment was in Fabric 2, therefore appears to be waster material from a nearby kiln. Glazed ridge tiles may have been produced in significantly lesser quantities alongside peg tiles, and were perhaps less prone to breakage during firing.

Brick

The bricks in the assemblage were all manufactured in Fabric 3 and all occur as a single type. The bricks have dimensions of 250x115x50mm with a rough flat base. The bricks exhibit irregular 'lumpy' faces, often with sparse straw/grass marks, and irregular arrises occasionally with finger-impressions.

A complete brick was contained Pit F1041 (L1055), with further fragments contained in Pit F1041 (L1056), Layer L1080 (TP3) and Ditch F1010 (L1011). These bricks do not appear to have been produced on site and do not occur as waster material. They may have formed part of the superstructure of nearby kilns but exhibit no evidence of burning or exposure to heat, suggesting they were not part of the kiln chamber.

Although probably produced locally, the size and characteristics of the bricks suggests they are copies of 'medium' sized Flemish-type bricks (Ryan 1996, 94). Kings Lynn has a substantial community of Hanseatic merchants (Drury 1981, 127) and Flemish bricks has appeared in the town by c.1275 (Clarke & Carter 1977, 441). Bricks of comparable form and fabric have been recorded in late 13th to 15th century deposits at Friars Street, Kings Lynn (Anderson 2005, 20) and Blackfriars Road, Kings Lynn (Sudds 2004, 41).

Conclusions

The high concentration of CBM contained in Pit F1041 and the significant distribution of smaller fragments in Layers L1080 and L1081 clearly represent waster deposits from a medieval tile kiln in the immediate vicinity. The primary products of this tile kiln were plain peg tiles, although splash-glazed ridge tiles may also have been produced. Low quantities of 'waster' CBM in ditches suggests that there may have been contemporary enclosures open around the area of the kilns, although there is no indication waster material was directly dumped into them. Sparse bricks in the assemblage may have formed part of the kilns or associated industrial structures but were not produced on the site. The fabrics and forms of the roof tile and brick in this assemblage suggest this kiln may have been active in the late 13th to 14th centuries, possibly into the 15th century.

Roof tiles would have been produced for relatively high status medieval buildings, of which there would have been a significant number in the mercantile town of Kings Lynn, as evidenced by excavations in the town. Although an actual kiln was not recorded, this assemblage represents the first medieval kiln producing roof tile recorded in the vicinity of the town. Medieval kilns producing floor tile have been recorded c.3km to the east at Bawsey (Eames 1955; Norfolk HER1075). Decorated floor tiles from Bawsey have also been recorded at Castle Acre Priory (Eames 1955, 173), possibly identifying another large-scale consumer of roof tiles from the kiln represented by this assemblage.

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The Animal Bone

Dr Julia Cussans

A total of four animal bones were recovered from three ditch fills. The bone was in a generally good state of preservation with a little abrasion and dog gnawing. L1011 from ditch F1010 contained a horse mandible fragment including the second and third adult premolars. L1015 from ditch F1014 contained a single medium mammal long bone shaft fragment that could not be further identified. Finally L1063 from ditch F1062 contained one sheep/goat metatarsal fragment and a piece of dog mandible which included the canine and adult premolars 2-4. No butchery or pathology was observed on any of the bones and little else of note may be said about this very small assemblage.

THE ENVIRONMENTAL SAMPLES

Dr John R Summers

Introduction

The trial trench evaluation produced evidence of medieval activity, including waste from a tile kiln and associated deposits. As part of the excavations, four bulk soil samples of 20 litres were taken for environmental archaeological assessment.

This report presents the results from the assessment of the bulk sample light fractions, including a discussion of their significance and the potential returns from any future excavations at the site.

Methodology

Samples were processed at Archaeological Solutions Ltd offices in Bury St. Edmunds using a Siraf style flotation tank. The light fractions were washed onto a mesh of 250µm (microns), while the heavy fractions were sieved to 500µm.

Once dry, the light fractions were scanned under a low power stereo microscope (x10-x30 magnification). Botanical remains were identified and recorded using a semi-quantitative scale (X = present; XX = common; XXX = abundant). Reference literature (Cappers *et al.* 2006; Jacomet 2006) and a reference collection of modern seeds was consulted where necessary. Potential contaminants, such as modern roots, seeds and invertebrate fauna were also recorded in order to gain an insight into possible disturbance of the deposits.

Results

The results from the assessment of the bulk sample light fractions are detailed in Table 3.

The range and concentration of material in the samples was low. The only remains present in the light fractions were an oat grain (*Avena* sp.) in sample 1 of L1055 (F1041) and a free-threshing type wheat grain (*T. aestivum* type) in sample 4 of L1080. Both were common cereal crops in medieval England (e.g. Ballantyne 2005; Straker *et al.* 2007). Based on the current evidence it is not possible to determine the relative significance of these crops in the local economy or whether the remains are representative of local food production and consumption.

The low density of remains further emphasises that the site is not likely to have been the focus for agricultural or domestic activities. The grains may represent wind-blown debris from nearby settlement rather than resulting from food processing/preparation activities on the site itself.

No charcoal or mollusca were present.

Contaminants

Low-level contamination was present in the samples in the form of modern roots and seeds. These show that limited contamination and disturbance of the assemblages could have occurred. However, this is of limited significance considering the paucity of material in the deposits.

Statement of potential

The samples contained only a limited amount of material for environmental archaeological analyses. This is probably due to the industrial nature of the site, with limited evidence for domestic activity. Based on the present evidence, it does not seem likely that a detailed archaeobotanical dataset would be recovered from further excavation and sampling.

If further excavation were to be carried out at the site, there is the possibility that the kiln itself would be identified. If so, evidence of the fuels used in the tile kiln would be recoverable in the form of charcoal. An examination of such material could provide information on fuel wood selection for this industrial process and shed further light on the industrial economy and the surrounding landscape.

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Straker, V, Campbell, G. and Smith, W. 2007, 'The charred plant macrofossils', in Gerrard, C. and Aston, M. *The Shapwick Project, Somerset. A Rural Landscape Explored*, 869-889, The Society for Medieval Archaeology Monograph 25

| Site code | Sample number | Context | Feature | Feature type | Spot date | Volume (litres) | Cereals | | | Contaminants | | Potential - CPR | Potential - Charcoal |
|-----------|---------------|---------|---------|--------------|-----------------|-----------------|---------------|------------------|--------------------|--------------|--------------|-----------------|----------------------|
| | | | | | | | Cereal grains | Notes | Grain preservation | Roots | Modern seeds | | |
| ENF127947 | 1 | 1055 | 1041 | Pit | L12th-14th C AD | 20 | X | Oat (1), NFI (1) | 5 | X | - | C | D |
| ENF127947 | 2 | 1056 | 1041 | Pit | L12th-14th C AD | 20 | - | | - | XX | - | D | D |
| ENF127947 | 3 | 1081 | - | Layer | 13th-15th C AD | 20 | - | | - | X | - | D | D |
| ENF127947 | 4 | 1080 | - | Layer | 13th-15th C AD | 20 | X | FTW (1) | 5 | XX | XX | C | D |

Table 3: Data from the assessment of bulk sample light fractions from trial excavations at Kings Lynn, Norfolk. Abbreviations: FTW (free-threshing type wheat – *T. aestivum* type); Oat (*Avena sp.*); NFI (indeterminate cereal grain)

PHOTOGRAPHIC INDEX



1

Trench 1 post excavation. Looking southeast.



2

Sample Section 1A. Trench 1, looking northeast.



3

Ditch F1012. Trench 1, looking north-east.



4

Test pit, south end of initial Trench 3 proposed location. Looking north.



5

. Test pit, south end of initial Trench 3 proposed location. Looking south.



6

Test pit, south end of initial Trench 3 proposed location. Looking southeast.



7

Sample section of Test pit, south end of initial Trench 3 proposed location. Looking southeast.



8

Trench 3 post excavation. Looking south..



9

Sample Section 3A. Trench 3, looking east.



10

Test Pit 1, Trench 3A. Looking east.



11

Test Pit 3, Trench 3A. Looking east.



12

Test Pit 6, Trench 3B. Looking east.



13

General view of the site. Trench 4 looking south.



14

General view of the site. Trench 4 looking north.



15

Section 4, Trench 4 looking west.



16

Section 4, Trench 4 looking north.



17

Pit L1041 and ditch L1062. Trench 4 looking northwest.



18

Section 4. Showing ditches L1062 and L1060. Trench 4 looking northwest.



19

Trench 5 post excavation. Looking southwest.



20

Sample Section 5A. Trench 5, looking northwest.



21

General view of Trench 7. CAT scanning for services. Looking south.



22

Excavating Trench 7. Looking southwest.



23

Sample section 7A. Trench 7 looking northwest.



24

Sample section 7B. Trench 7 looking northwest.



25

Sample section 7C. Trench 7 looking southeast.



26

Sample section 7D. Trench 7 looking northwest.



27

Southwest end Trench 7, post excavation. Looking northeast.



28

Northeast end Trench 7, post excavation. Looking southwest.



29

Sample Section 8A. Trench 8, looking west.



30

Trench 8 post excavation. Looking north.



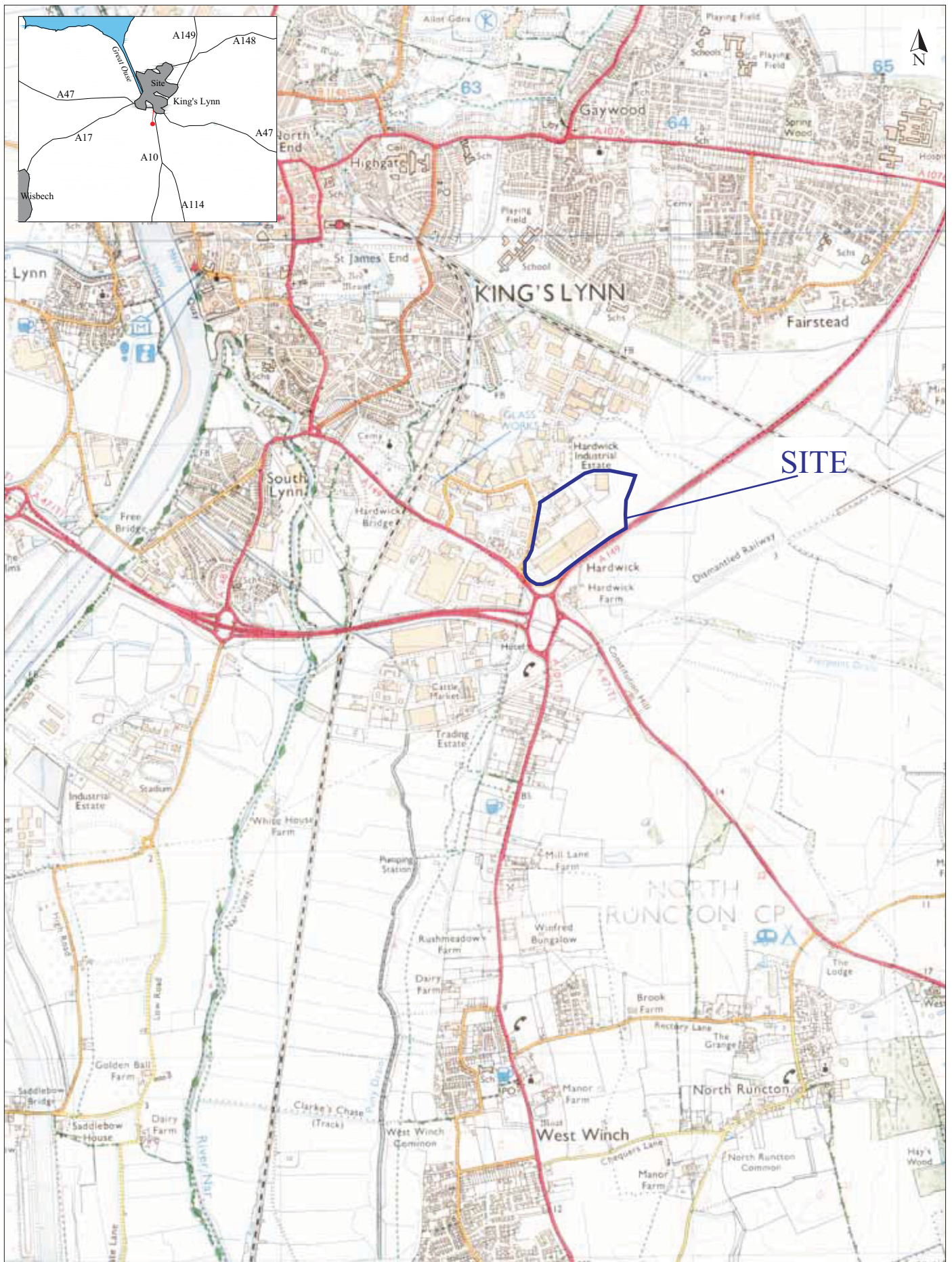
31

Sample section 9A. Trench 9, looking south.



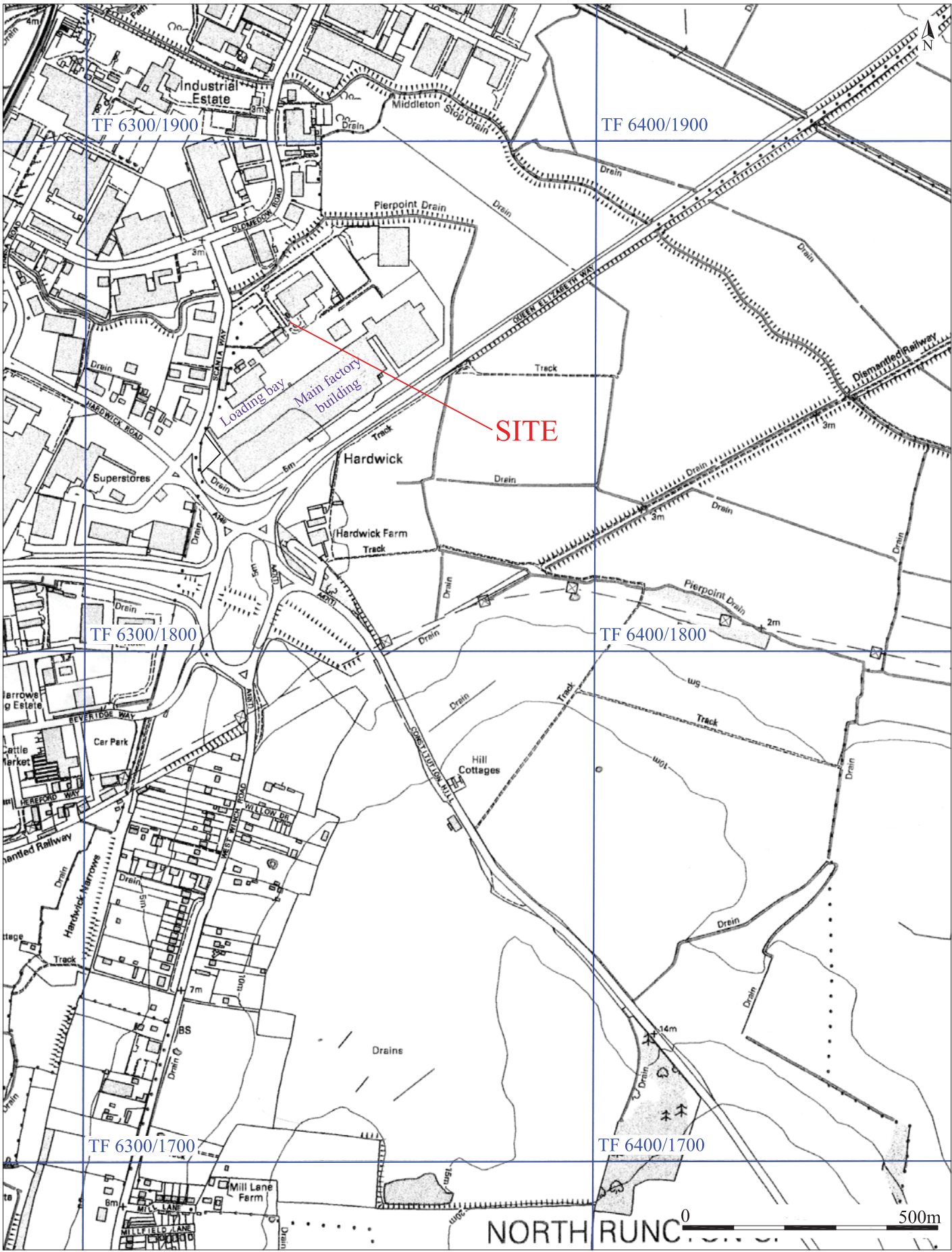
32

Trench 9 post excavation. Looking east.



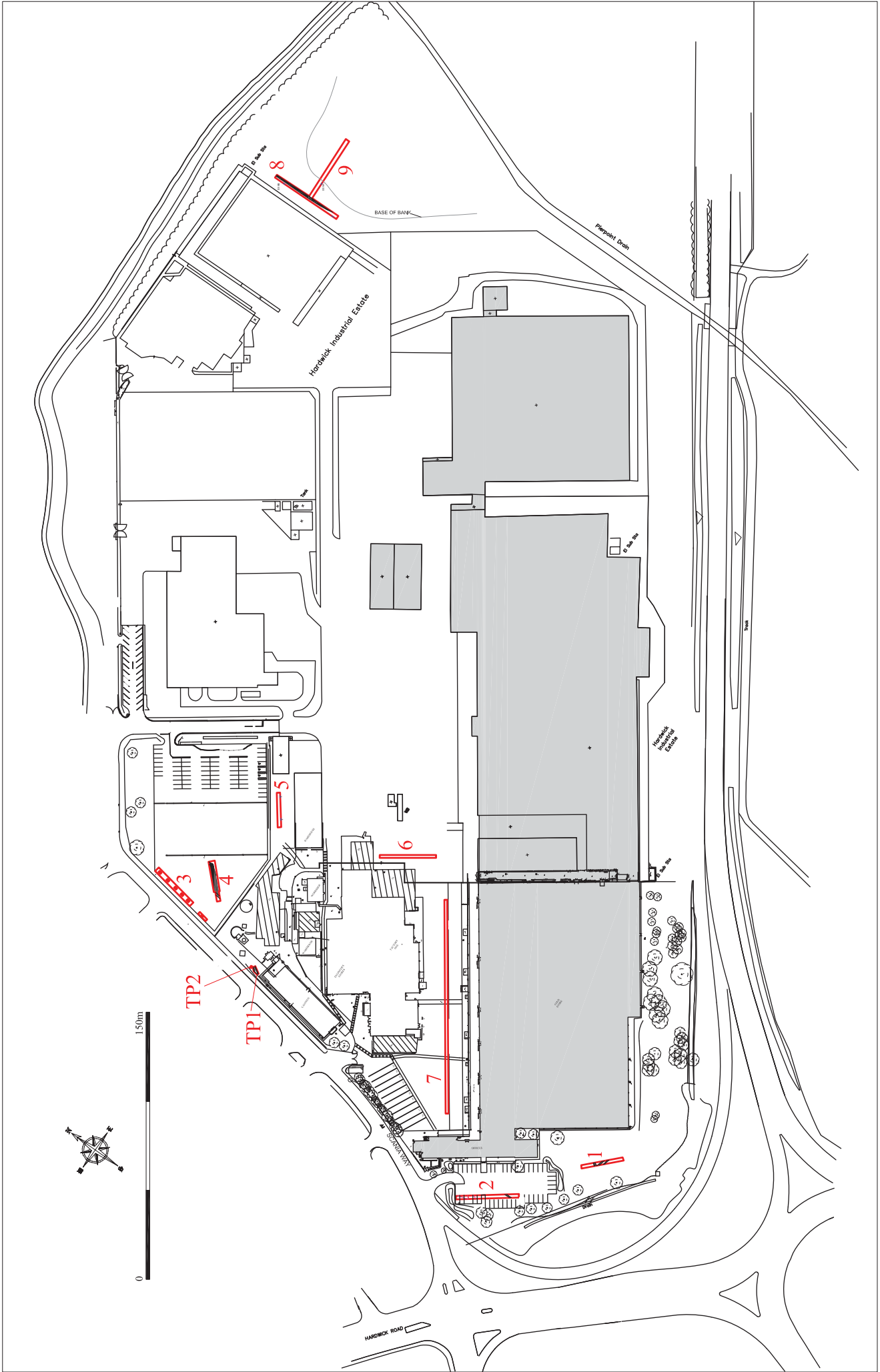
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Fig. 1 Site location plan
 Scale 1:25,000 at A4



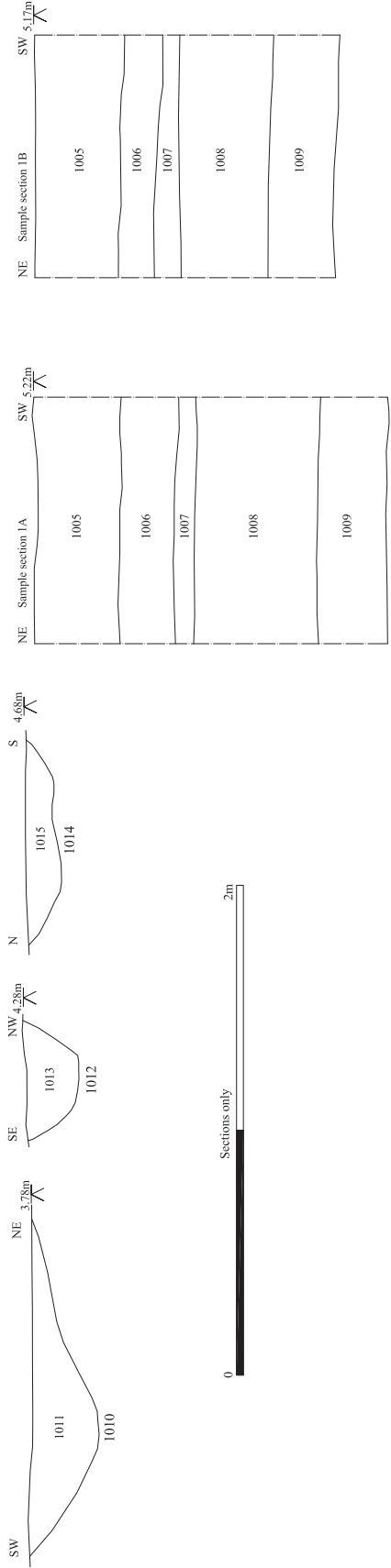
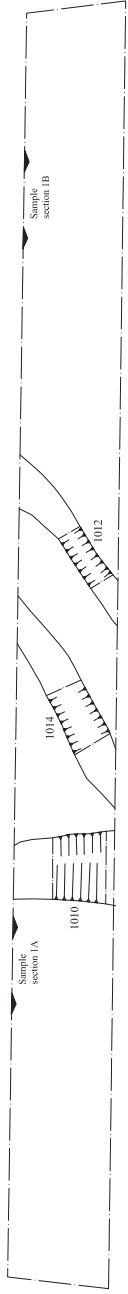
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Fig. 2 Detailed site location plan
 Scale 1:10000 at A4

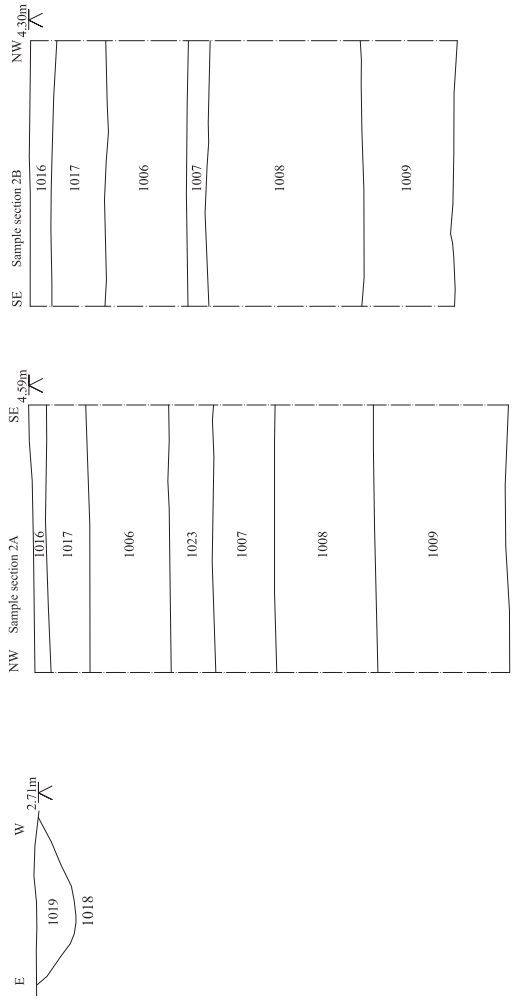
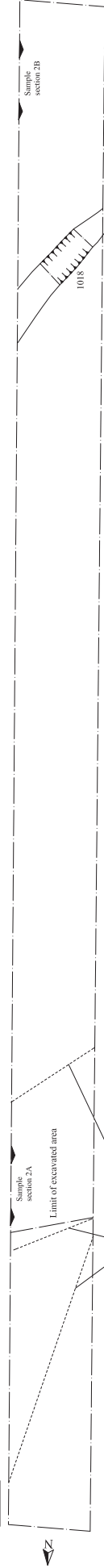


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Fig. 3 Trench location plan
 Scale 1:2000 at A3

Trench 1

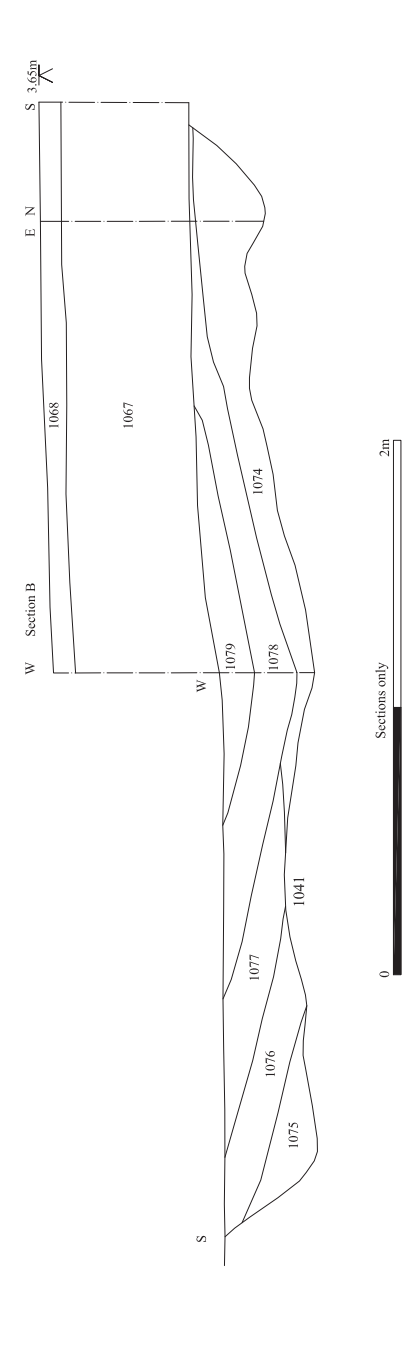
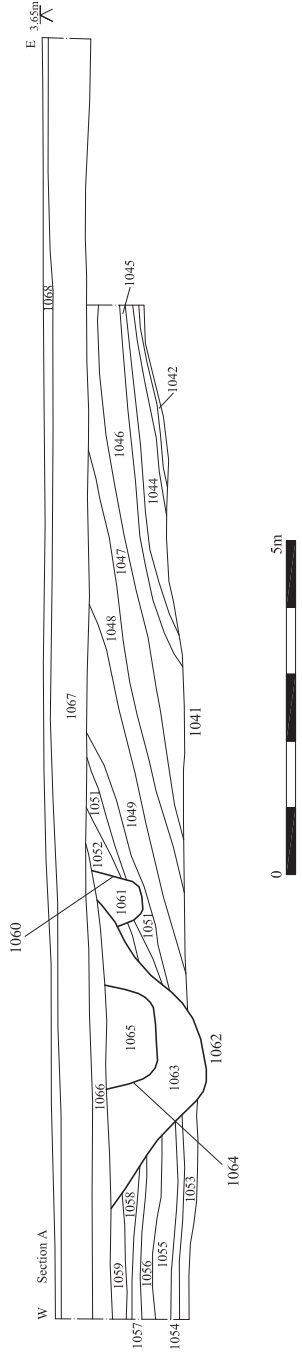
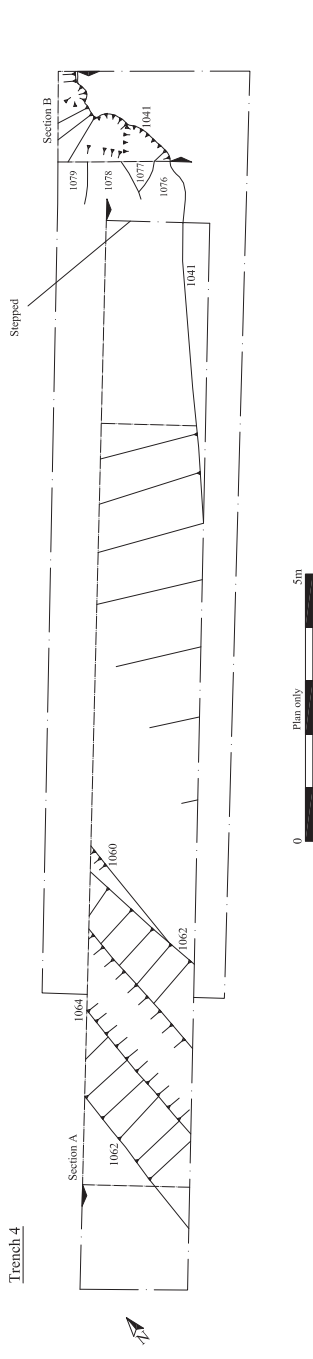


Trench 2

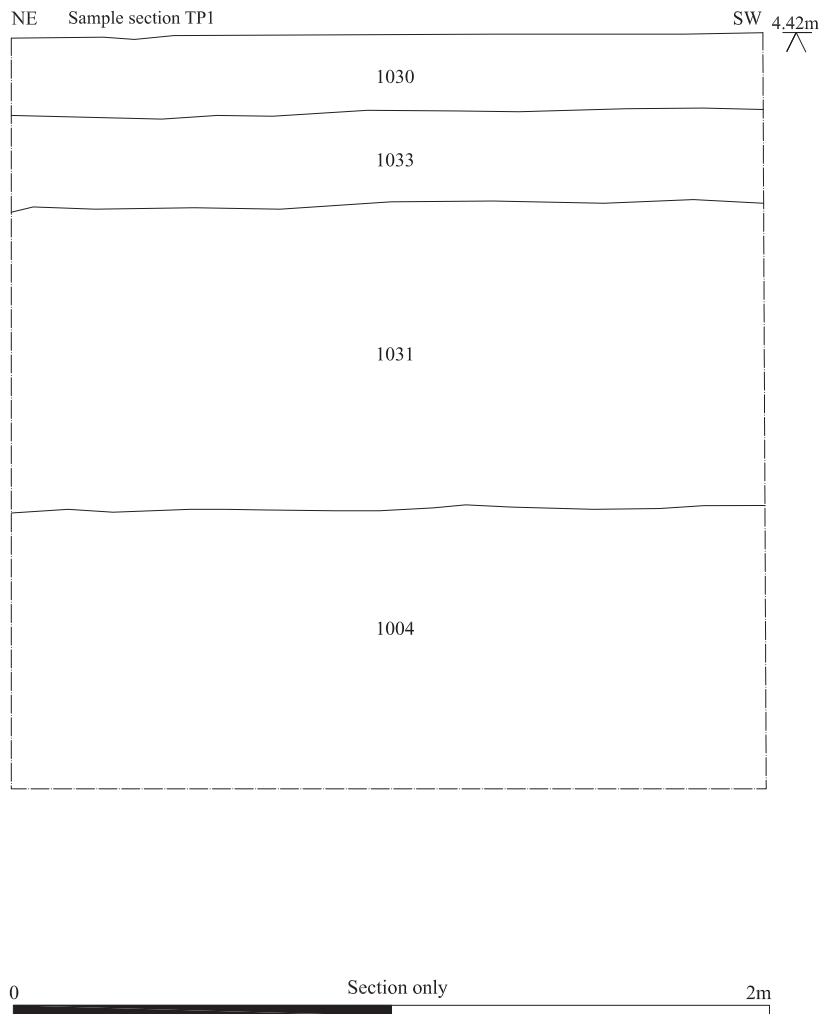
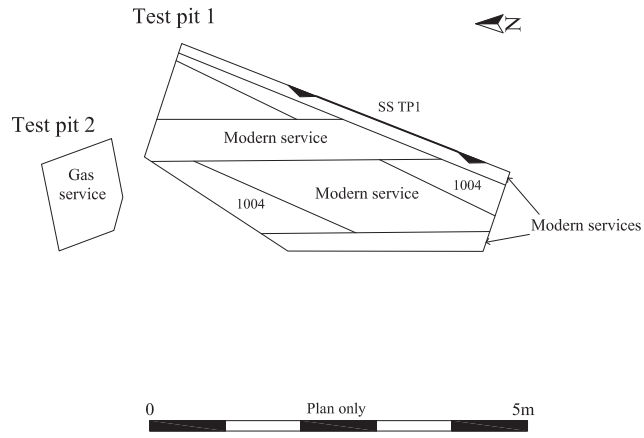


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Fig. 4 Trench plans and sections
 Scale 1:100 and 1:20 at A3

Trench 4



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Fig. 5 Trench plans and sections
 Scale 1:100, 1:75 and 1:20 at A3



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Fig. 6 Test pit plans and section

Scale 1:100 and 1:20 at A4