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**A REPORT TO
WESTLEIGH DEVELOPMENTS LTD**

March 2009

**RESIDENTIAL DEVELOPMENT
RUSTON WAY
LINCOLN**

**ARCHAEOLOGICAL
INVESTIGATIONS**

**PREPARED BY
MIKE JARVIS ARCHAEOLOGICAL SERVICES**

MJAS REPORT No.: 555

**RESIDENTIAL DEVELOPMENT
RUSTON WAY
LINCOLN**

ARCHAEOLOGICAL INVESTIGATIONS

CONTENTS	PAGE
Non-Technical Summary	1
1.0 Introduction	2
2.0 Site Location and Background	2
3.0 Aims and Methodology	3
4.0 Analysis and Results	4
4.1 Analysis	4
4.2 Results	8
5.0 Acknowledgements	8
6.0 Bibliography	9
PLATES	
Plate I: General view of the site.	2
Plate II: General view of trench TR1.	4
Plate III: Trench TR2 deposit [008].	5
LIST OF FIGURES	
Fig. 1: Site location map	10
Fig. 2: Plan showing trench & borehole locations together with contour plot information.	11
Fig. 2: Sections – Trial Pits 1-10, excavation trenches 1 & 2 and Borehole 1-5	12
APPENDIX	
Appendix 1: Context summary.	13
Appendix 2: Archive summary.	14
Appendix 3: Specialist Reports.	14

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RUSTON WAY

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1. Introduction

2. Site Location and Context

3. Archaeological Investigation

4. Results and Discussion

5. Conclusions

6. Bibliography

PLATES

Plate 1: General view of the site

Plate 2: General view of trench TR1

Plate 3: Trench TR1 (Level 10)

LIST OF FIGURES

Fig. 1: Site location map

Fig. 2: Plan showing trench & profile locations together with context plan information

Fig. 3: Sections - Trench TR1 - 10 excavation trenches 1 & 2 and Section 1-5

APPENDIX

Appendix 1: Context summary

Appendix 2: Archive summary

Appendix 3: Specialist Reports

RESIDENTIAL DEVELOPMENT RUSTON WAY LINCOLN

ARCHAEOLOGICAL INVESTIGATIONS

NON-TECHNICAL SUMMARY

- *Between 20 August and 24 October 2008, Mike Jarvis Archaeological Services undertook an archaeological watching brief on behalf of Westleigh Developments Limited, during the excavation of a series of machine excavated geotechnical trial pits & boreholes and the subsequent archaeological excavation of two small investigative trenches on land at Ruston way, Lincoln. The site forms one element of the Ruston Way Brayford Enterprise Park. Planning application No.: 2008/0409/RM.*
- *Analysis of the results from the geotechnical data & trench investigations appear to mirror the findings made during the earlier investigation of the site.*
- *Natural sand was revealed at between 2.10m and 3.50m OD confirming the findings of the previous investigations that the area encompassing the site lies on the southern edge of a buried sand island that would have for the most part lain above water level during the Mesolithic and later prehistoric Periods.*
- *The excavation of Trench T1 (sited to examine an area of underlying natural sand previously identified as being above 4m OD and therefore more likely to contain evidence of prehistoric occupation/land use) failed to reveal this high point, however this information while not establishing the exact position of the high ground has assisted in further defining its likely location. Similarly, the examination of the natural sands in both trenches T1 & T2 failed to reveal evidence of prehistoric activity/land-use. However, its presence should not be dismissed as the small area investigated is unlikely to be indicative of the island as a whole.*
- *The analysis of the environmental samples appear to confirm that the buried alluvial/organic deposit revealed in the majority of the geotechnical trenches & borehole (during this and previous site investigations) represents the ground surface during the mid 19th century immediately prior to the extensive industrialisation of the area.*
- *As with the earlier investigation of the site, deposits overlying the organic material were more recent and represent land reclamation events associated with the industrial development of the area that commenced during the second half of the 19th century. The extensive dumps of foundry waste present across the site probably derive from factories occupying land immediately to the south and date from the early-mid 20th century.*
- *In conclusion, the watching brief although of limited scale has provided additional information useful in enhancing and confirming our current understanding of the topographic nature of the area during the prehistoric period. And although no evidence to suggest occupation on the site predating the 19th century was forthcoming these results will be of value in future decision making in the management of the archaeological resource in this part of Lincoln.*

RESIDENTIAL DEVELOPMENT RUSTON WAY LINCOLN

ARCHAEOLOGICAL INVESTIGATIONS

1.0 INTRODUCTION

Between 20 August and 24 October 2008, Mike Jarvis Archaeological Services (MJAS) undertook an archaeological watching brief on behalf of Westleigh Developments Limited, during the excavation of a series of machine excavated geotechnical trial pits & boreholes and the subsequent archaeological excavation of two small investigative trenches on land at Ruston way, Lincoln (hereafter the site). The site forms one element of the Ruston Way Brayford Enterprise Park (RWBEP). Planning Application No.: 2008/0409/RM.



Plate 1: General view of the site looking north.

2.0 SITE LOCATION AND BACKGROUND (Fig. 1)

The site is located towards the south-west end of the city to the south of Brayford Pool. To its north the site is bounded by Ruston Way and to its south by Green Lane. To its east and west lie open areas of land currently under redevelopment as other elements of the RWBEP (National Grid Reference SK 96690 70980 – centre). The area under investigation covers approximately 1.8Ha and at the time of the investigation comprised areas of tarmac hard-standing together with areas of low vegetation, boggy/marshy ground (dense areas of vegetation and trees that previously extended across much of the site had been removed prior to the implementation of these investigations).

Brayford Pool was formed after the last glacial period (c. 10,000 BC) by the convergence of the Rivers Witham and Till and formed an expanse of slow-moving water and although little understood, recent discoveries indicate that the area was much larger than we see today and was subject to fluctuating water levels and comprised a landscape of river channels and marshes that flooded during the winter and exposed a series of meres and pools during the warmer summer months. The Fosdyke Canal (believed to have been originally dug during the Roman Period) lies slightly north of, and roughly parallel to, the now obscured course of the River Till.

The precise location of dry ground to the south of the Brayford Pool has proved somewhat elusive to establish for any given period (especially the prehistoric) although our understanding of the topography continues to improve as more data is collected (see contour plot on Fig. 1).

During 2006 an archaeological excavation carried out 300m to the north-east of the site, during the digging of a floodwater storage pond associated with the development of Lincoln University, revealed nearly 800 pieces of struck or modified flint on a north-south orientated sand ridge (highest point 3.43m OD). The majority of the flints were dated to the Mesolithic period and suggested that the finds probably formed a flint preparation area associated with a hunting camp.

From the later Bronze Age (c. 1200 BC) onwards water levels generally rose and reed peat deposits formed in the area. Little evidence for Roman activity has been found in the vicinity of the site due mainly to the fact that the area to the south of Brayford Pool would have been marshland during this time (the main focus of Roman settlement lay on the east side of the River Witham, closer to the present day High Street on slightly higher ground). Evidence for later Saxon through to Post-medieval land use of the area is similarly elusive although it is almost certain that the area would have been utilised for hunting and fishing.

Map evidence (pre-1848) indicates that the area to the south of the Brayford Pool (then known as Holmes Common – Marratt's *Map of Lincoln* of 1817) remained largely undeveloped until the construction in 1849 of the Great Northern Railway's Loop Line. By the 1920's the area to the south of Brayford Pool had become intensely occupied by both the railways and factories associated with heavy industry.

3.0 AIMS AND METHODOLOGY

The aims of the watching brief were:

- To produce an archive record of deposits and remains generally within the constraints of the groundwork contractors' programme and working methods with due regard to current health and safety legislation.
- To produce a report on the archaeological importance of the discoveries.
- To produce a project archive from which the potential for further study and academic research could be assessed.
- To provide information for accession to the Historic Environment Record (HER) and the Lincoln Urban Archaeological Database (UAD).

The investigations comprised the monitoring and recording of deposits exposed during the excavation of ten (10) geotechnical trial pits (nominally 3m x 600mm wide - trial pit depth was dependant upon the nature of the deposits encountered) & Five (5) boreholes (cable percussive). Although not monitored at the time of their excavation, the results of the five boreholes are included in this report. The works were intended to provide additional information to an earlier geotechnical investigation of the site.

In view of the generally negative results made during the monitoring of earlier geotechnical investigations on the site (Jarvis 2008) and the none intrusive nature of the proposed

development (extensive areas of the site lay well below surrounding ground level and require the importation of soil so as to raise site ground level. Similarly the implementation of a piled foundation strategy by the developer was seen to further reduce the impact of the development), the archaeological adviser to the local planning authority requested the excavation of two small trial trenches to investigate and sample deposits pre-dating modern activity and included the upper levels of the underlying natural sands with a view to recover artefacts associated with occupation/land use during the prehistoric period.

The archaeological record was secured by means of trench-side notes, scale drawings and photographs.

4.0 ANALYSIS AND RESULTS (Fig. 1 - 3 & Pl. I)

Ordnance Datum heights and Trial Pit & borehole locations referred to in this report have been extracted from material provided by Westleigh Developments Limited.



Plate II: General view of trench TR1 looking north. Note the abundance of modern building debris throughout. Organic rich deposit [002] is just visible in the base of the trench.

4.1 ANALYSIS

Archaeological Trench Data

Trenches TR1 and 2 were positioned over areas previously identified as probably representing dry ground associated with the buried prehistoric sand island. It has been established that the site lies on the southern edge of this island with buried natural sand ranging from 2.1m and 4.5m OD. Trench TR1 sat on the projected line of the 4m contour and TR2 the 3m contour. Trench size was nominally 6x6m and c. 2.5m deep (trench sides were stepped in order to negate the need for shuttering). A mechanical excavator was utilised to remove the non-archaeological overburden and excavation beyond this level was carried out by hand.

One of the primary aims of the excavation was to examine the upper levels of the natural sands for the presence of artefacts associated with occupation/land-use that may have occurred there during the prehistoric period. Natural sand was subsequently excavated in two spits approximately 50-100mm thick and the sand within each spit was passed through a 4mm sieve and the resulting material was cleaned, weighed and examined by hand for finds.

Trench TR1

Natural sand [004/005] was encountered at c. 3.00m OD, approximately 2.35m below existing ground level. The earliest sieved spit ([005]) was revealed to contain 576g of coarse gravel comprising sub-rounded pebbles up to 30mm³ and small, angular, weathered flint fragments with well worn edges up to 15mm³. No archaeological finds were recovered from the material. The upper spit of sand ([004]) contained 709g of gravel and similarly contained no finds.

Sealing natural was [003] (3.20m OD) a mottled, light-dark grey sand silt with occasional small rounded pebbles and occasional patches of dark red/brown peat material and infrequent black fleck (possibly charcoal). Analysis of a sample recovered from [003] revealed some cinder, brick & tile and would appear to date to the mid-19th century. Above [003] was [002] a 300mm thick deposit of dark grey/black slightly organic/peaty clayey silt with frequent visible plant matter and rootlets throughout (c. 3.50m OD). The environmental analysis of this material revealed frequent industrial waste (coal, ash and cinder), a small quantity of Victorian pottery together with organic material (including seeds of grape, fig & bramble – suggesting the introduction of cess or faecal material) and is indicative of the dumping of domestic waste.

Above [002] was an extensive ([001] – 1.85m thick) deposit/levelling deposit of mid-dark grey/brown sandy silt containing frequent modern building debris including; brick, concrete, plastic, steel/iron and limestone (ground level 5.35m OD).



Plate III: Trench TR2 showing sand deposit [008] lying below organic deposit [007] (scale is 2m).

Trench TR2

A natural sand ([011] & [010]) was discovered at 2.96m OD (the resulting spits were revealed to contain 979g & 830g of coarse gravel respectively (of the same visual composition as contexts [004] & [005] in Trench TR1). Similarly, no archaeological finds were recovered during the examination of the sieved material.

Above natural lay ([009]) an undated narrow (60mm) lens of compacted mid-dark grey/brown peat (3.02m OD). The analysis of a sample from [009] revealed a little cinder together with some uncharred seed. Sealing [009] was [008] a mottled, light-dark grey sand silt identical to [003] in Trench TR1 (3.10m OD). Sample analysis of [008] revealed cinder and slag and a small amount of organic matter. Sealing [008] was [007] an organic dark grey/black alluvial silt (same as [002] in Trench TR1 - 3.50m OD).

Overlying [007] was an extensive dump of modern building debris ([006] - same as [001]). Ground level in Trench TR2 was 5.56m OD.

Geotechnical Trial Pit Data

At the time of the geotechnical investigations most of the dense vegetation previously covering the site had been mechanically removed to leave a thin topsoil supporting sporadic areas of low vegetation.

TP101

The excavation of TP101 failed to reveal archaeological deposits. The trench was excavated to a depth of 3.30m (2.30m OD) and revealed a sequence of sand and ash deposits containing frequent brick rubble, plastic & metal fragments (contexts:[012] - [014] - ground level approximately 5.60m OD).

TP102

Trial Pit TP102 revealed natural sands [017] & [018] at 2.75m OD. This was overlain by a 300mm thick alluvial deposit [016] (dark grey/black organic silt with frequent visible rootlets - 3.05m OD) that was itself sealed by ([015]) a 500mm thick deposit of sandy soil (ground level approximately 3.55m OD).

TP103

Natural sands [021] - [023] were encountered at c. 3.00m OD and were sealed by alluvial deposit [020] (same as [016]) at 3.40m OD. Deposit [020] was itself sealed by ([019]) a 1m thick deposit of brick and limestone rubble - ground level 4.40m OD).

TP104

Natural sands [018], [026] & [027] lay at c. 3.25m OD and were in turn sealed by alluvial deposit [016] at c. 3.50m OD. Above [018] lay [025] a deposit of recently deposited limestone sealed by ([024]), a thin and poorly formed topsoil (ground level c. 4.50m OD).

TP105

Natural sands [018] & [027] lay at approximately 3.00m OD in the area of TP105 and were sealed by alluvial deposit [016] (3.10m OD). Above [016] was [030] an undated dark grey silt which was overlain by ([029]) an ashy layer and [028] a Tarmac surface (ground level 4.23m OD).

TP106

Deposits of natural sand ([027]) were revealed at 2.80m OD and were sealed by alluvial deposit [016] at approximately 3.40m OD. Above [016] was [031] an extensive (2.20m thick) deposit of pale brown sand interpreted as foundry waste sealed by a thin Tarmac surface ([028] – ground level c. 5.60m OD)

TP107

Alluvial deposit [016] was revealed at c. 2.50m OD, above which was [033] a deposit of large, loosely compacted fragments of clinker/foundry waste (c. 4.00m OD). Above [033] was [032] a deposit of dark grey ash interpreted as foundry waste (ground level c. 5.50m OD). Excavation of this trench (and TP108 to its east) was severely hampered as [033] was revealed to contain a large amount of water suggesting that this deposit filled a ditch or similar linear cut that ran parallel to Green Lane.

TP108

Excavation revealed a continuation of deposit [033] (3.70m OD) and excavation was halted due to the ingress of water into the trench. Deposit [033] was sealed by foundry waste deposit [032] and a thin layer of Tarmac ([028] ground level c. 5.50m OD).

TP109

Natural ([027]) was encountered at c. 3.20m OD and was sealed by a series of sand/silt deposits ([034] – [036]) containing frequent modern building debris – ground level 5.50m OD.

TP110

Natural sand [027] was revealed at c. 2.85m OD and was sealed by alluvial deposit [016] at 3.20m OD. Above the alluvium lay two extensive deposits of modern building debris ([037] & [038] ground level 5.40m OD).

Borehole Data

Interpretation of the findings from the five borehole sunk on the site has been extrapolated from the resulting borehole logs.

BH1 (G)

Natural sand ([027]) was encountered at approximately 2.10m OD in Borehole BH1 and was sealed by a 500mm thick alluvial deposit [040]. This was in turn sealed by [040] a 2.60m thick deposit of made ground - ground level c. 5.00m OD.

BH2 (G)

Borehole BH2 was sited in the north-west part of the site in an area previously used as a car-park. Natural sand [027] was revealed at approximately 3.20m OD in BH2 and was sealed by 1.50m of made ground ([039] – ground level c. 4.70m OD).

BH3 (G)

Borehole 3 was located midway along the Ruston Way frontage of the site and revealed natural sand ([027]) to lie at 2.60m OD. This was sealed by alluvial deposit [040] (3.00m OD) which was in turn sealed by 1.40m of made ground (ground level - 4.40m OD).

BH4 (G)

Borehole BH4 (G) lay midway along the Green Lane boundary of the site and revealed natural sand [027] approximately 1.90m below ground level (3.30m OD) and was sealed by 1.90m of made ground ([039] – ground level c. 5.10m OD).

BH5 (G)

Located in the south-east corner of the site, BH5 revealed natural sand ([027]) at 3.50m OD, sealed by alluvial deposit [040] at c. 4.00m OD. [040 was sealed by approximately 1.30m of made ground ([039] – ground level c. 5.30m OD).

4.2 RESULTS

Analysis of the results from the geotechnical data & trench investigations appear to confirm the findings made during the earlier investigation of the site.

Natural sand was revealed at between 2.10m and 3.50m OD confirming the findings of the previous investigations that the area encompassing the site lies on the southern edge of a sand island that would have for the most part lain above water level during the Mesolithic and later prehistoric Periods.

The excavation of Trench T1 (sited to examine an area of underlying natural sand previously identified as being above 4m OD and therefore more likely to contain evidence of prehistoric occupation/land use) failed to reveal this high point, however this information while not establishing the exact position of the high ground has assisted in further defining its likely location. Similarly, the examination of the natural sands in both trenches T1 & T2 failed to reveal evidence of prehistoric activity/land-use. However, its presence should not be dismissed as the small area investigated is unlikely to be indicative of the island as a whole.

The analysis of the environmental samples appear to confirm that the buried alluvial/organic deposit revealed in the majority of the geotechnical trenches & borehole (during this and previous site investigations) represents the ground surface during the mid 19th century immediately prior to the industrialisation of the area.

As with the earlier investigation of the site, deposits overlying the organic material were more recent and represent land reclamation events associated with the industrial development of the area that commenced during the second half of the 19th century. The extensive dumps of foundry waste present across the site probably derive from factories occupying land immediately to the south and date from the early-mid 20th century.

In conclusion, the watching brief although of limited scale has provided additional information useful in enhancing and confirming our current understanding of the topographic nature of the area during the prehistoric period. And although no evidence to suggest occupation on the site predating the 19th century was forthcoming these results will be of value in future decision making in the management of the archaeological resource in this part of Lincoln.

5.0 ACKNOWLEDGEMENTS

MJAS would like to Westleigh Developments Limited for funding the watching brief and post-fieldwork analysis. Thanks are also extended Claire Moreira (Principal GeoEnvironmental Engineer, Geodyne Limited) and to the City Archaeologist (Mr M J Jones) for his advice and guidance. Access to the City of Lincoln Council archaeological records was provided by Mr J Herridge.

Site Team

Mike Jarvis
Paul Johnson

Site Supervisor/Report production (MJAS)
Site Assistant (freelance)

Karen Adams Site Assistant & Finds processing (MJAS)

External Specialists

Gemma Martin Environmental analysis (Environmental Archaeology
Consultancy)

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6.0 BIBLIOGRAPHY

Jarvis, M 2008, *Ruston Way, Lincoln*, Archaeological Watching Brief in Conjunction with Geotechnical Investigations, MJAS Report No. **550**

Jones, Michael J, Stocker, D & Vince, Alan 2003, (Stocker, D, ed), *The City by the Pool. Assessing the Archaeology of the City of Lincoln*, Lincoln Archaeological Studies **10**, Oxbow Books, Oxford

McDaid, M & Field, N 2006, *University of Lincoln Campus, East Midland Media Study Building, Brayford South, Lincoln*, Archaeological Watching Brief, Lindsay Archaeological Services Report No. **951**

Mills, D R & Wheeler, R C 2004, *Historic Town Plans of Lincoln, 1610-1920*, Lincoln Record Society Vol **19**, The Boydell Press

Savage, S A 2004, *Land at Ruston Way, Lincoln*, Archaeological Evaluation, Pre Construct Archaeology Report

Tann, A Field, N & Rackham, J 2007, *Land to the South of Brayford Pool, Lincoln*, Archaeological Desk-based Assessment, LAS Report No. **944**

Wragg, K 1999, *University of Lincolnshire & Humberside: Phase III Residential Accommodation, Lincoln Campus*, City of Lincoln Archaeology Unit Report No. **382**

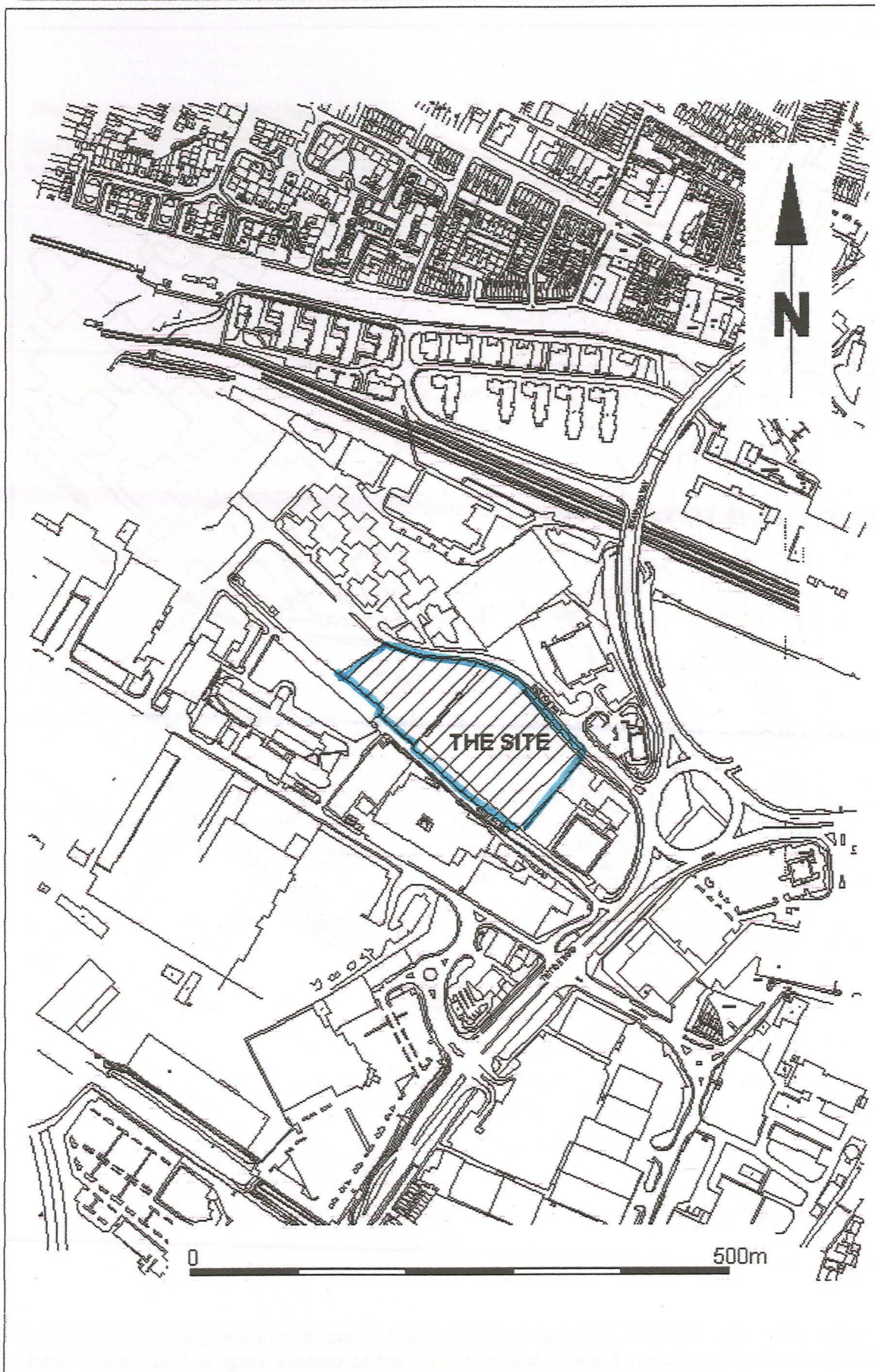


Fig. 1: Site location Map (not to scale).

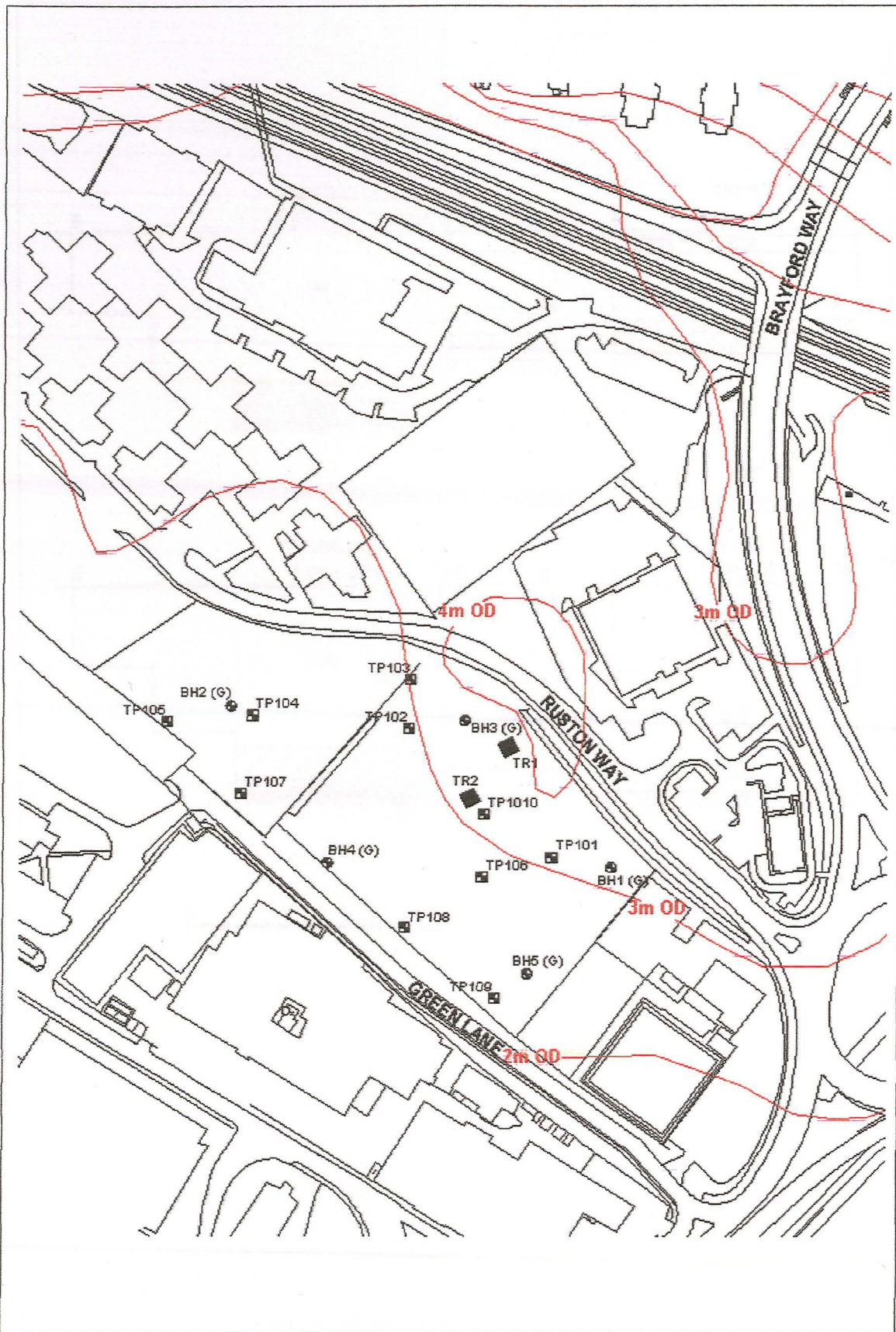


Fig. 2: Plan showing trial trench, geotechnical trial pit & borehole locations. Also showing updated contour plot of upper surface of the natural glacial sands & gravels within the Brayford pool basin (not to scale).

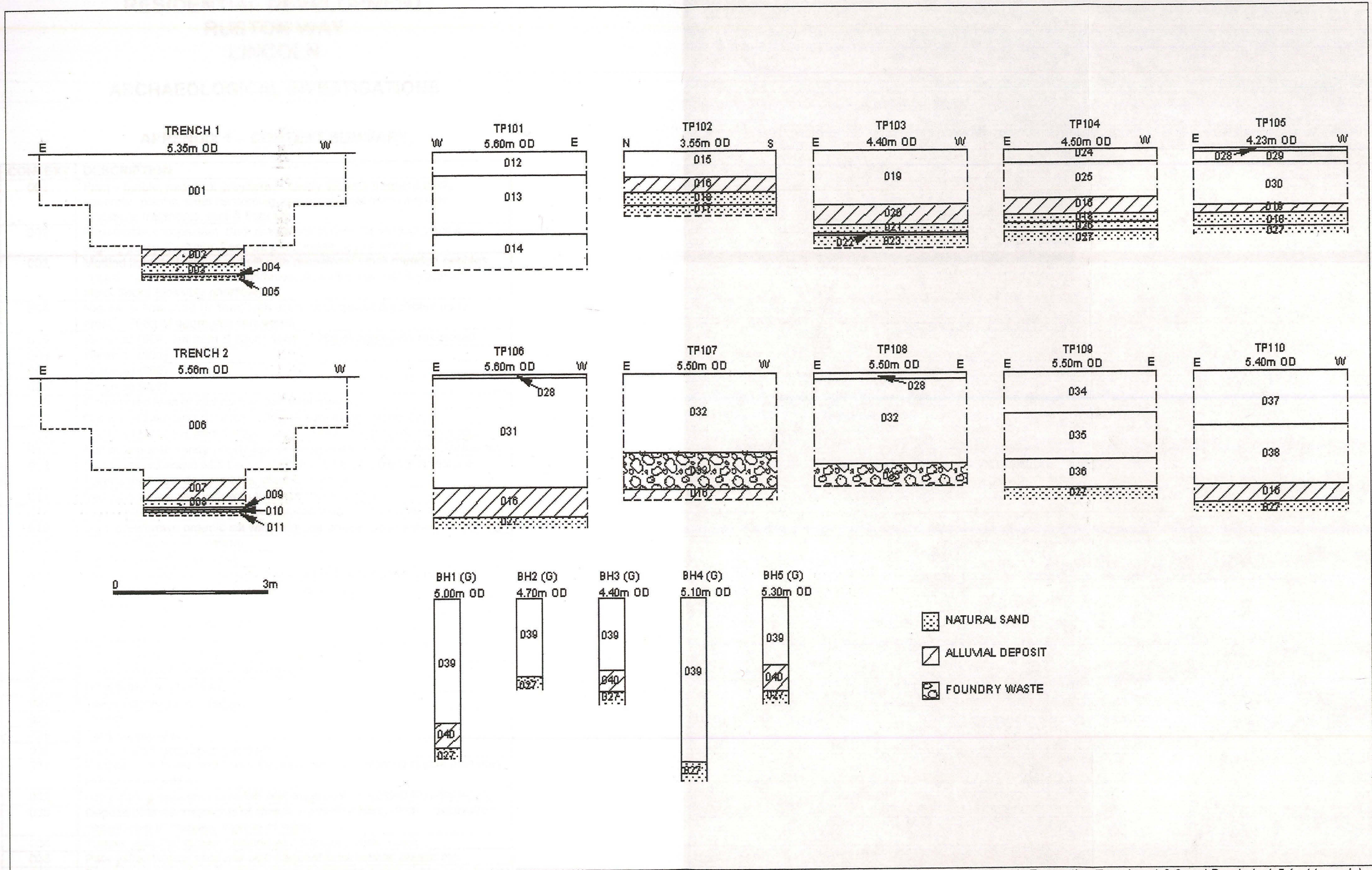


Fig. 3: Sections: Trial Pits 1-10, Excavation Trenches 1 & 2 and Borehole 1-5 (not to scale).

RESIDENTIAL DEVELOPMENT RUSTON WAY LINCOLN

ARCHAEOLOGICAL INVESTIGATIONS

APPENDIX 1 – CONTEXT SUMMARY

CONTEXT	DESCRIPTION
001	Firm – friable, mid-dark grey/brown sandy silt with frequent brick, concrete, plastic, steel reinforcing and occasional small angular limestone fragments, roof & floor tile
002	Firm-friable compaction, dark grey/black clayey silt semi-organic & slightly peaty. Contains frequent plant matter and rootlets
003	Mottled light-dark grey sand silt with occasional small rounded pebbles, occasional patches of dark red/brown peat-like material & occasional black flecks (possibly charcoal)
004	Natural yellow sand (0-5cm) with occasional gravel & pebbles up to 4mm ³ - 708g of aggregate recovered
005	Same as [004] but from 5-10cm deep - 576g of aggregate recovered.
006	Same as [001]
007	Same as [002]
008	Same as [003]
009	Compacted lens of mid-dark brown peat material
010	Natural yellow sand (0-5cm) - 830g of aggregate recovered.
011	Same as [010] but from 5-10cm deep - 979g of aggregate recovered.
012	Mid brown sine sandy poorly formed topsoil with frequent brick inclusions
013	Light grey ash/sand with frequent brick rubble, occasional limestone fragments & rounded pebbles, plastic, metal etc.
014	Mid-dark brown sand/silt with frequent brick rubble
015	Light yellow/brown sand with occasional-frequent limestone fragments
016	Dark grey/brown organic silt with frequent visible rootlets (same as [040])
017	Clean yellow sand – natural
018	Light-mid grey/brown sand
019	Light-mid brown sand soil with frequent brick & limestone rubble
020	Dark grey/black organic silt frequent rootlets visible
021	Light brown sand
022	Dark brown compacted sand
023	Mid brown sand – natural
024	Dark brown/grey poorly formed topsoil
025	Compacted pale yellow/brown limestone
026	Dark brown organic sand
027	Yellow/brown sand – natural
028	Tarmac
029	Ashy clinker layer
030	Friable, dark grey/black sand/silt
031	Friable, pale brown sand with frequent brick & limestone rubble also grey ash (foundry waste)
032	Ashy dark grey/brown sand/silt with fragments of vitrified foundry waste
033	Deposit of large fragments of clinker – possible filling ditch – excavation ceased due to massive ingress of water
034	Friable, light-mid brown silt/sand with frequent brick rubble
035	Pale yellow/brown sand soil with frequent brick rubble, plastic etc.
036	Pale brown deposit of small limestone fragments, brick rubble and plastic

**MJAS Report No. 555: Residential Development, Ruston Way, Lincoln
Archaeological investigations**

037	Pale brown sand/silt mixed with grey foundry waste & with frequent brick rubble
038	Pale grey/brown ash with occasional fragments of compacted yellow sand bricks – foundry waste
039	Made ground as described on borehole logs
040	Alluvial deposit – same as [016] – recorded on borehole logs

APPENDIX 2 - ARCHIVE SUMMARY

SITE NAME: Residential development, Ruston Way, Lincoln

SITE CODE: LIRWB08

MJAS REPORT No: 555

NGR: SK 96690 70980 – centre

PROJECT TYPE: Archaeological investigations

PROJECT DATE: 2008

PLANNING APPLICATION No.: 2008/0409/RM

CLIENT: Westleigh Developments Ltd, Tudorgate, Grange Business Park, Enderby Road, Whetstone, Leicestershire LE8 6EP

SMR No.: N/A

CIVIL PARISH: Lincoln

MUSEUM ACCESSION No.: 2008.155

ARCHIVE PRESENT LOCATION: MJAS, 1 Torrington Road, Lincoln, LN2 2DP

ARCHIVE FINAL LOCATION: The City and County Museum, Friars Lane, Lincoln

APPENDIX 3 - SPECIALIST REPORTS

Environmental Archaeology Assessment
By Gemma Martin

Introduction

As part of an archaeological watching brief conducted by Mike Jarvis Archaeological Services (MJAS) on behalf of Westleigh Developments Limited, two small investigative trenches were excavated on land at Ruston Way, Lincoln. A total of four environmental bulk samples were taken from the trenches and submitted to the Environmental Archaeology Consultancy for processing and assessment (Table 1).

Table 1: Ruston Way – LIRWB08. Sample taken for environmental analysis.

Trench no.	Context no.	Sample vol (L)	Sample wt. (Kg)	Context description	Phase
1	002	15	22	Firm-friable compaction, dark grey/black clayey silt semi-organic and slightly peaty. Contains frequent plant matter and rootlets.	?

1	003	13	20	Mottled light-dark grey sand and silt with occasional small rounded pebbles, occasional patches of dark red/brown peat-like material and occasional black flecks (possibly charcoal).	?
2	008	18	27	Mottled light-dark grey sand silt with occasional small rounded pebbles, occasional patches of dark red/brown peat-like material and occasional black flecks (possibly charcoal). Same as [003].	?
2	009	17	27	Compacted lens of mid-dark brown peat material.	?

Methods

The soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The sample was washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.25mm mesh and an internal wet sieve of 0.5mm mesh for the residue. The residues were dried and two subsequently refloats, to ensure the efficient recovery of charred material. The wet volume of the first flots and the dry volume of the second flots were measured and the volume and weight of the residue recorded. The waterlogged flots were kept wet. A total of 63 litres soil was processed in this way.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through the residue in order to recover magnetised material such as hammerscale and prill. The dry flot was studied using x10 magnifications and the presence of environmental finds (i.e. snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. A sub-sample of the waterlogged flot was scanned and the diversity and abundance of seeds and insects, etc noted. These, along with the finds from the sorted residue, constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified and the results are summarised below in Tables 2 and 3.

Results

The samples washed down to produce residues consisting of varying amounts of sub-rounded pebbles, small mixed sub-angular and sub-rounded pebbles including quartz and flint, as well as coarse and fine sands with occasional iron stone and concretions in the fine fractions.

MJAS Report No. 555: Residential Development, Ruston Way, Lincoln
Archaeological investigations

Table 2: Residential Development, Ruston Way, Lincoln – LIRWB08. Finds from the processed samples.

Trench no.	Context	Sample vol. l.	Residue vol. (ml)	Pot no/wt (g)	Glass no.	Flint no.	Brick/tile wt. g.	Coal wt. g.	Cinder wt. g.	Slag wt. g.	Magnetic wt. g.	Hammer-scale*	Bone wt. g.	Comments
1	002	15	600	10/3	8		18.4	17	126	4	7	1	<1	?burnt coal, 4g; 1x clay pipe frag; 1x tiny bead (glass), pot glazed & patterned (?Victorian); indet. burnt bone and cancellous bone.
1	003	13	295				7				<1			1x ?tarred stone (from road surface?).
2	008	18	450			28	1	1	P	P	<1			Cinder and slag present in flot. Flints are unworked and probably derived from natural gravel
2	009	17	300					P	P					Cinder present in flot.

P = present; * frequency 1=1-10; 2=11-50; 3=51-150; 4=151-250; 5=>250

Table 3: Residential Development, Ruston Way, Lincoln – LIRWB08. Environmental finds from the processed samples

Trench no.	Context	Sample vol. l.	Flot vol. ml (+/ø)	Char-coal */**	Char'd seed *	Un-char'd seed*	Fish bone wt.g	Bird bone wt.g.	Insects*	some preliminary identifications
1	002	15	850/220	5/5	1	est. 5	<1	<1	est. 3	Charred goosefoot/orache, corn spurrey & indet. seeds; charcoal mostly culm nodes, internode frags & some culm bases; uncharred grape, fig, bramble, buttercup-type, poppy, goosefoot/orache, clover-type, ?club-rush, matted root material with some culm nodes & internodes; insects include occ. elytra & a tiny frag of caddis fly larval case; worm capsules score 2; fragment of burnt fish vertebra & 1x small burnt bird 3 rd phalanx. The 1 st (wet) flot is primarily organics with some cinder, slag & charcoal while the 2 nd (dry) flot is mostly cinder, with some charcoal, coal and occ. slag.
1	003	13	30/0	2/3		1			1	Uncharred orache, knotgrass (?water-pepper), grass, matted root material with occasional culm nodes; insects incl. recent tiny insects, occasional elytra, worm capsules score 2.
2	008	18	50/0	3/4		1			est. 2	Uncharred orache, root material with occasional culm nodes; insects occasional thorax, elytra & small frag of caddis fly larval case, worm capsules estimated score 2.
2	009	17	60/1	2/3		1			1	Uncharred ?club-rush & indet. seed, fragmented/degraded root material; insects include occasional thorax etc. The 2 nd flot is mostly sand, stone crumb & cinder.

+/ø wet flot vol/dry flot vol; * frequency 1=1-10; 2=11-50; 3=51-150; 4=151-250; 5=>250; ** frequency of charcoal >2mm/<2mm; est. – estimated abundance scores

Other inclusions are small quantities of ironstone, brick/tile fragments and dried organic material. The exception is the residue from context [002], which is predominantly made up of cinder and silt concretions, with frequent fragments of coal and slag, as well as some brick/tile fragments and sand.

The archaeological finds recovered from the samples are presented in Table 1 and are mainly from context [002], Trench 1. Of particular note are the ten sherds of post-medieval glazed and patterned pottery (one of which may be painted plaster), the fragments of glass, clay pipe fragment and the tiny glass bead. These remains, together with the cinder, coal and slag indicate that layer [002] includes a significant amount of post-medieval/early modern material. Layer [003], which is sealed by [002] in Trench 1 also yielded a little brick/tile and single charred stone which may be derived from road surface-type material and shows some re-working of this relatively recent material into the lower deposits. The upper sampled deposit ([008]) from Trench 2 also contains a little brick/tile, coal, cinder and slag while the layer below ([009]) contains no archaeological remains. In addition, contexts [002], [003] and [008] all produced some magnetic material, which includes some slag, prill and a little hammscale.

In terms of biological remains, faunal remains were only recovered from context [002] and consist of small amounts of unidentifiable burnt mammal bone and single fragments of unidentifiable burnt bird bone and a burnt fish vertebra fragment. The only notable charred botanical remains are again from context [002], which yielded several charred weed seeds of goosefoot/orache (*Chenopodiaceae*) and corn spurrey (*Spergula arvensis*) and a charcoal assemblage that chiefly consists of culm nodes, internode fragments and occasional culm bases (straw-like material) and some other herbaceous stem fragments. The organic component of the flots is primarily matted root material with occasional culm nodes and internode fragments, although the uncharred root material from layer [009], Trench 2, is not matted but fragmented and more degraded in appearance. The uncharred seed assemblages from contexts [003], [008] and [009] are small with extremely low species diversity, with small numbers of orache (*Atriplex*), knotgrass (*Polygonum*) and possible club-rush (cf. *Schoenoplectus*). The uncharred seed assemblage from context [002] contains slightly greater species diversity, with additional species buttercup-type (*Ranunculus*), poppy (*Papaver*) and clover-type (*Medicago/Trifolium*) also recorded. In addition, species of economic value were also noted in the flots of context [002], including bramble (*Rubus*), fig (*Ficus carica*) and grape (*Vitis vinifera*). Other remains recovered from the organic flots are small numbers of insect remains, some of which appear to be recent incidental inclusions, worm capsules and a couple of small fragments of caddis fly larval cases from [002] and [008].

Discussion

Trench 1

The organic deposit [002] is dominated by industrial debris including cinder, slag and coal. The presence of small quantities of hammscale and prill indicates that some smithing or industrial activity is represented but may derive from dumped material above. The presence of small numbers of bramble, fig and grape seeds is interesting and may be indicators of the incorporation of cess or faecal material into the deposit. The traces of fruits together with the domestic/cultural remains, including the small fragments of pot, clay pipe and glass may be derived from domestic waste or 'night-soil' (Rackham *pers comm.*).

According to map evidence, the area south of Brayford Pool remained largely undeveloped until the construction of the Great Northern Railway's Loop line in 1849, followed by the increasing industrialisation of the area (MJAS 2008, 1). It would appear that the industrial material and small quantities of domestic debris are associated with this development and the organic root material may be the remains of the old (pre-1849) ground surface.

Context [003] is recorded as natural sand and any cultural remains present in [003], such as cinder and brick/tile, may be re-worked from the early Victorian/early modern activity.

Trench 2

The two sampled deposits are taken from the natural sands below organic deposit [007]. The upper deposit [008], which is sealed by organic deposit [007] contains traces of coal, cinder and brick/tile which again, may be re-worked from the later (early modern) activity. The sands contain some organic preservation with root material and herbaceous stem fragments, which may be the remains of a turf layer. The paucity of uncharred botanical remains and insect remains precludes any environmental reconstructions and there is no tangible evidence for prehistoric activity within Trench 2.

Conclusion

The four samples yielded no discernable evidence for prehistoric activity. Likewise there appears to be no later (historic) environmental or archaeological evidence for activity prior to the development of the area in 1849, which saw construction of the Great Northern Railway's Loop line (MJAS 2008, 1).

It is likely that the cultural material, principally from context [002], is derived from material introduced to the site as part of preparatory ground works for the industrial development of the site, and may include some cess or 'night soil'. The organic component is dominated by root material with some herbaceous material, and certainly [002] may be the former (pre-1849) ground surface and alluvial layer built up by periodic flooding. Contexts [008] and [009] in Trench 2 are noted to be natural sands and a compacted peat layer and the organic root material from these deposits may be the surviving remnants of a turf layer in this trench either represented by the formation of [007], a probable marshy and alluvial deposit similar to [002] in Trench 1 and likely to be of relatively recent date (medieval or post-medieval?), or sealed by it.

The samples afford a small insight into the use and development of this area at Ruston Way, but the scale of the investigation naturally limits it.

No further work is recommended for this material.

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Bibliography

MJAS 2008 *Residential Development, Ruston Way, Lincoln, Archaeological Investigations*. Report No. 555

Stace, C. 1997 *New flora of the British Isles*. 2nd edition, Cambridge University Press.

Williams, D. 1973 Flotation at Siraf, *Antiquity*, 47, 198-202