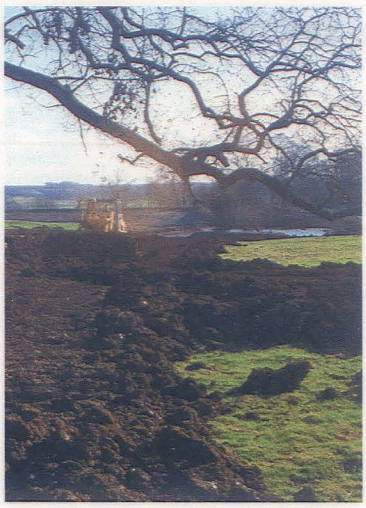
M212

Dalby Hall, Main Road Spilsby, Lincolnshire



ARCHAEOLOGICAL WATCHING BRIEF

NETWORK ARCHAEOLOGY LTD

on behalf of

CgMs CONSULTING

network ARCHAEOLOGY LTD

L17287

Event L12969
Source L17697
L17698

Mon L82994
64444
L82795
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L82796
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DALBY HALL, MAIN ROAD, ~~SPILSBY~~, DALBY LINCOLNSHIRE

ARCHAEOLOGICAL WATCHING BRIEF REPORT

Prepared by

NETWORK ARCHAEOLOGY LTD.

on behalf of

CgMs Consulting

Report 173

February 2002

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1.0 Summary

An archaeological watching brief was carried out on the extension of an existing ornamental lake within the grounds of Dalby Hall, three kilometres to the North of Spilsby, Lincolnshire. During the Watching Brief, the brick foundations of a small square structure were exposed. A pit containing iron-smelting slag, and part of a ditch were also recorded. The remains of ridge and furrow that relate to a Medieval field system extended into part of area covered by the lake extension.

2.0 INTRODUCTION

Network Archaeology Ltd (NAL) was commissioned in January 2002 by CgMs Consulting to conduct an archaeological watching brief during groundworks for the extension of an existing ornamental lake, and the construction of an earth gravity dam. The Watching Brief was required by Lincolnshire County Council to fulfil a condition of planning permission for the development (Planning Application S/014/01752/01). The work was carried out in accordance with relevant local and national guidelines (Lincolnshire County Council, 1998; IFA, 1997).

3.0 THE DEVELOPMENT SITE

The development site is located within the grounds and to the south of Dalby Hall, Main Road, Spilsby (NGR TF 410 700) (Figure 1). The existing ornamental lake stands at the head of a small valley at approximately 24m OD. During the works, the lake was extended to cover an area of approximately 0.75 ha.

4.0 ARCHAEOLOGICAL BACKGROUND

Dalby Hall is in the Lincolnshire Wolds, on the south-facing slope in a small valley which cuts into the dip slope of the chalk ridge. The area at the top of this ridge is rich in Neolithic and Bronze Age burial mounds; a notable example is the long barrow on Giants Hills, approximately 2km northwest of the development site. Also on the top of the ridge, the modern A1028 is on the line the Roman Road from the Wash to the Humber.

The earliest known written record of Dalby is in the Domesday Book. The name is one of many in Lincolnshire which incorporates the element *–by,* from the Danish for homestead or village (Ekwall, 1960), and reflects the strong influence of Scandinavian settlement in the 9th, 10th and 11th centuries.

Apart from the Hall and the adjoining parish church, there is now no sign of a village nucleus, but it is likely that there was a denser settlement in medieval times. The deserted medieval village at Fordington provides a nearby example of the process of rural depopulation which has occurred since that period. A series of cropmarks have been identified on aerial photographs of the area to the south of Dalby Hall, and it is likely that these cropmarks represent the focus of the Medieval settlement.

Older Editions of Ordnance Survey maps show the remains of a moat to the south of the development site (Figure 2) and the adjacent wood is called 'Old Hall Holt'. The existing Hall is known to have been rebuilt in the 19th century following a fire, replacing an earlier building, possibly of the 17th or 18th century. The 'Old Hall' was presumably an earlier moated building to the south of the lake, and close to the cropmark site.

5.0 THE WATCHING BRIEF

5.1 The groundworks for the lake extension (Figure 3) were carried out between the 30th of January and the 19th of February 2002.The removal of topsoil and subsoil was monitored by a suitably experienced archaeologist. Earth moving was undertaken by three "D6" bulldozers. Features that were of archaeological importance were recorded following the guidelines laid out in the Written Scheme of Investigation (NAL, January 2002).

5.2 *Areas 1 and 2*
For the purpose of the watching brief, the site was divided into two areas. The eastern half was designated Area 1, and the western part Area 2, with the dividing line running through the centre of the existing lake (see Figure 3). The topsoil and subsoil were first removed from Area 1 and with some of the underlying clay was used to form the core of the new dam. This was subsequently reinforced and the area behind it landscaped using the soils removed from Area 2.

6.0 RESULTS

6.1 *Topsoil (0001) in Area 1; (0009) in Area 2*
The topsoil *(0001=0009)* was between 0.10m and 0.20m in depth. It was at its deepest at the base of the valley in which the existing ornamental lake lies and was shallower along the moderately steep gradient to the north and south of the existing lake. The only artefact of any archaeological significance that was recovered from the topsoil was a fragment of post-medieval roof tile.

6.2 *Subsoil (0002) in Area1; (0010) in Area 2*
There was a distinct subsoil layer *(0002=0010)* between 0.20m and 0.35m thick underlying the topsoil. Fifty sherds of pottery were retained from this layer during the Watching Brief. This came from a wide range of periods, possibly from as early as the Iron-Age through to the early part of the 19th Century (*see Appendix D*). The amount and corresponding periods are as follows:-

- 2 sherds either Iron-Age or Early-Saxon
- 1 sherd Roman or Medieval
- 6 sherds Medieval
- 26 sherds Early Post-Medieval
- 15 sherds Post-Medieval or Early Modern.

6.3 *Underlying Clay (0003) in Area 1; (0011) in Area 2*
The subsoil layer was underlain by clay *(0003=0011)*. This appeared to be the undisturbed natural substrate, and no finds were recovered from it.

6.4 Area 1

6.4.1 Building (Group 0017; incorporates 0013, 0014, 0015)

The foundations *(0013)* for a small square structure were recorded in Area 1 (see Figure 3). They were exposed after the removal of topsoil *(0001)*. The structure measured 5.60m by 5.50m, and was located approximately 34m ENE of the existing lake. Up to two courses of continuous brick foundation *(0013)* remained. The foundations were 0.50m wide (the length of two end to end mortared bricks) and were up to 0.12m deep.

The bricks were bonded by a compact light yellowish-brown lime mortar. Each brick measured 0.23m in length, 0.11m wide and 0.06m deep. The foundations showed signs of having been burnt *in-situ* (*see Appendix E*). They appeared to have been laid into a trench *[0015]* just wide enough to accommodate them, as the edges of this trench were not visible in plan.

A 0.07m thick compact deposit *(0014)* containing frequent fragments of chalk was visible in the northern half of the structure.

6.4.2 Medieval Ridge and Furrow

Prior to the development, faint traces of north to south orientated ridge and furrow were visible as standing earthworks in the northern portion of Area 1. The spacing between the furrows was 8 to 9m, and the height difference between ridges and furrows was up to 0.30m.

6.4.3 Ditch [0006]

A ditch was recorded approximately 20m to the north of the existing lake. It was orientated east to west for a distance of 10m. It then turned through90° at its eastern end, and continued on a north to south alignment for a further 3m.

A section of the ditch was excavated. It was up to 0.90m wide and 0.45m deep, and had steep sides, and a concave base. No dateable material was recovered from its single fill *(0007)*. The ditch was not identified until the subsoil layer *(0002)* had been removed, but it may have been cut through this layer. If this was the case, it would have been larger than the recorded dimensions.

6.4.4 Fire Pit [0005]

A small oval pit was located approximately 15m to the north of the existing lake. Half of the pit was excavated. It measured 0.55m long, 0.42m wide and 0.25m deep. The clay of its sides was coloured reddish-brown in places, showing it to have been affected by heat. The sides were moderate to steep and the pit had a shallow-concave base. The single fill *(0004)* was a dark, reddish-brown, ashy clay-silt with frequent charcoal flecks and patches of unburnt mid orange-brown clay-silt. It contained fragments of iron smelting slags, which were retained (see Appendix F).

6.4.5 Demolition Deposit (0016)

A spread of burnt material *(0016)* was recorded to the northeast of the existing ornamental lake (see Figure 3). This was a mixed deposit that contained fragments of burnt brick, tile and charcoal flecks (see 7.1.4).

6.4.6 Unstratified Finds (0008)

Unstratified artefacts recovered during the Watching Brief in Area 1 were allocated the context *(0008)*. These included two sherds of pottery dated to either the Early-Saxon or Iron-Age periods, and ten sherds of pottery dated to between the 10th and 15th centuries (see Appendix D).

6.5 Area 2

6.5.1 Medieval Ridge and Furrow

The remains of the ridge and furrow recorded in Area 1 extended into the north-east corner of Area 2 (*see Figure 3*).

6.5.2 Unstratified Finds

Unstratified artefacts recovered during the Watching Brief in Area 2 were allocated the context *(0012)*. These included two sherds of Post-Medieval pottery dated to the 17th to 19th centuries (*see Appendix D*).

7.0 INTERPRETATION

7.1 Area 1

7.1.1 Building Group (0017)

Only part of the foundations *(0013)* and the chalk layer *(0014)* remained. The brickwork was continuous around the perimeter of the foundations, with no evidence for an entrance into the structure.

Context *(0014)* appeared to be a deliberately laid make-up layer, and may have originally supported a floor that had been removed along with the upstanding structure.

Some hand-made bricks recovered from foundations *(0013)* have been dated to the 17th or 18th centuries (*see Appendix E*). The bricks and some mortar retained from foundations showed signs of having been burnt in-situ. Similar burning had taken place on bricks retained from demolition deposit *(0016)* situated 40m WNW of Structure *(0017)*. It is possible that Structure *(0017)* was destroyed by fire, and that *(0016)* originated from the burnt remains of the up-standing building. Another possibility is that the bricks used in foundations *(0013)* had been recovered from elsewhere and re-used.

The position of these foundations suggests that they may have originally supported a small summer house or ornamental building in the parkland surrounding Dalby Hall, with evidence for its destruction by fire preserved in the discoloration of the bricks. Alternatively, the building may have been used for an industrial purpose.

7.1.2 Medieval Ridge and Furrow

The ridge and furrow extended approximately 40m into the northern portion of Area 1. It was not seen to the south of ditch *[0006],* and the north to south return of this ditch was parallel to the ridge and furrow (*see Figure 3*). This implies that the east to west portion of ditch *[0006]* formed the southern limit of a field. There was no trace of a field boundary retaining the ridge and furrow to the north-east of ditch *[0006]*.

7.1.3 Field Boundary Ditch [0006]

No dateable material was recovered from ditch *[0006]*. Its alignment suggests that it was contemporary with the remains of ridge and furrow. The edges of the ditch were barely visible, and it was likely to have continued in a westerly direction for an unknown distance, and beyond the limit of excavation to the north.

7.1.4 Fire Pit [0005]

The single fill *(0004)* of the pit was a mixed deposit that contained ash, charcoal, iron smelting slag, and pockets of un-burnt re-deposited clay. The slag was unusual in character and is not securely dateable, but has none of the characteristics expected of medieval or later slags (*see Appendix F*). The presence of slag implies that iron smelting was occurring nearby, and the burning on the sides of the pit may have been caused by a process associated with this activity.

7.1.5 Demolition Deposit (0016)

This deposit contained fragments of brick dating from the mid 17th to 18th centuries. The bricks showed evidence of having been burnt, subsequent to the firing used in their manufacture. This was similar to burning on the bricks retained from foundations *(0013)* for Building *(0017)* (*see Appendix E*).

7.2 Area 2

7.2.1 Medieval Ridge and Furrow

Medieval ridge and furrow extended into the north-east corner of Area 2. The east to west orientated portion of ditch *[0006],* probably contemporary with the ridge and furrow, may have extended into Area 2. This was not clear due to the poor visibility of features in the surface of the stripped ground.

8.0 CONCLUSIONS

The presence of slag implies that the iron smelting has taken place in the immediate vicinity of the site at some time in the past. This may have been during the Iron-Age or Roman periods, but secure dating is not possible.

Early pottery, in small quantities, implies that there was some activity in the area, although any settlement would probably have been some distance from the site itself. There was a single sherd from a jug or jar of probable Roman date, and two sherds which were probably early Saxon, but could have been Iron-Age.

No evidence of Medieval or earlier buildings was found during the Watching Brief. The site is on the poorly-drained base of a fairly steep sided valley, and is likely to have always been wet throughout the year. This would have made it unsuitable for dwellings.

The remains of ridge and furrow in both areas probably perpetuates the pattern the Medieval field system, although this form of ploughing continued in widespread use until ceramic drains became readily available in the early 19th century. The earthworks beyond the south and west boundaries of the development site are assumed to be the focus of a Medieval settlement. The presence of ridge and furrow would tend to confirm that the development site lay beyond the limits of a settlement but within its associated agricultural land during this period. The small amount of pottery from the Medieval period, seventeen sherds in total, supports this interpretation.

A small brick building *(0017)* near the base of the northern side of the valley seems to have been built in the 17th to 18th centuries, and destroyed by fire sometime later. It would have been visible from the site of the existing Dalby Hall, and may have been the remains of an ornamental garden building.

A deposit of demolition debris *(0016)* mixed with ash and charcoal may be related to the destruction of this small building, or to the burning down of Dalby Hall itself, which is known to have occurred in the 19th century. The existing Dalby Hall stands 150m to the north-west.

Other than pottery that was contemporary with building *(0017)*, the small assemblage was not derived from contexts associated with direct occupation. Much of it will be residual, originating from settlement nearby rather than from activity within the boundaries of the development site.

9.0 ACKNOWLEDGEMENTS

This study was commissioned by CgMs Consulting. NAL is grateful to Rob Bourn for his help and advice throughout the work

Thanks also to Andrew Spence of *Spence and Son Plant Hire* for his co-operation and help.

Pottery was identified by Jane Young and Dave Marshall of *Lindsey Archaeological Services.* Ceramic Building Material was identified by Jane and Doug Young, and metal working slag was identified by Jane Cowgill.

For NAL, fieldwork was carried out by Mike Morrell, and Phil Chavasse, who also produced and collated the report. Chris Taylor managed the project. Dick Moore edited the report. Geraint Franklin prepared the illustrations.

10.0 REFERENCES

CgMs (January 2002), *Specifications for an Archaeological Watching Brief.* Rob Bourn for CgMs Consulting

Ekwall (1960), *The Concise Oxford Dictionary of English Place Names*. Oxford University Press.

IFA (1997), *Standard and Guidance for Archaeological Watching Briefs.* Institute of Field Archaeologists.

Lincolnshire County Council (1998), *A Manual of Archaeological Practice*. Lincolnshire County Council.

NAL (January 2002), *Archaeological Watching Brief at Dalby Hall, Written Scheme of Investigation*. Network Archaeology Limited.

11.0 SITE ARCHIVE (Accession Number 2002.24)

The site archive will be held by NAL, pending suitable museum facilities becoming available. In addition to a copy of this report, it consists of :-

- Site records, including 17 x Context Sheets.
- Copies of developer's site plans.
- 1 x A1 site plan at 1:500 scale.
- Photographic record: 1 Photographic index sheet, 21 mounted colour transparencies.
- Correspondence relating to the project.
- Archaeological finds: pottery, tile and brick (whole brick not retained).

12.0 STATEMENT OF INDEMNITY

All statements and opinions presented in this report are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the authors of the report for any error of fact or opinion resulting from data supplied by any third party, or for any loss or other consequences arising from decisions or actions made upon the basis of facts or opinions expressed in the report, howsoever such facts and opinions may have been derived.

APPENDIX A – Figures 1-3

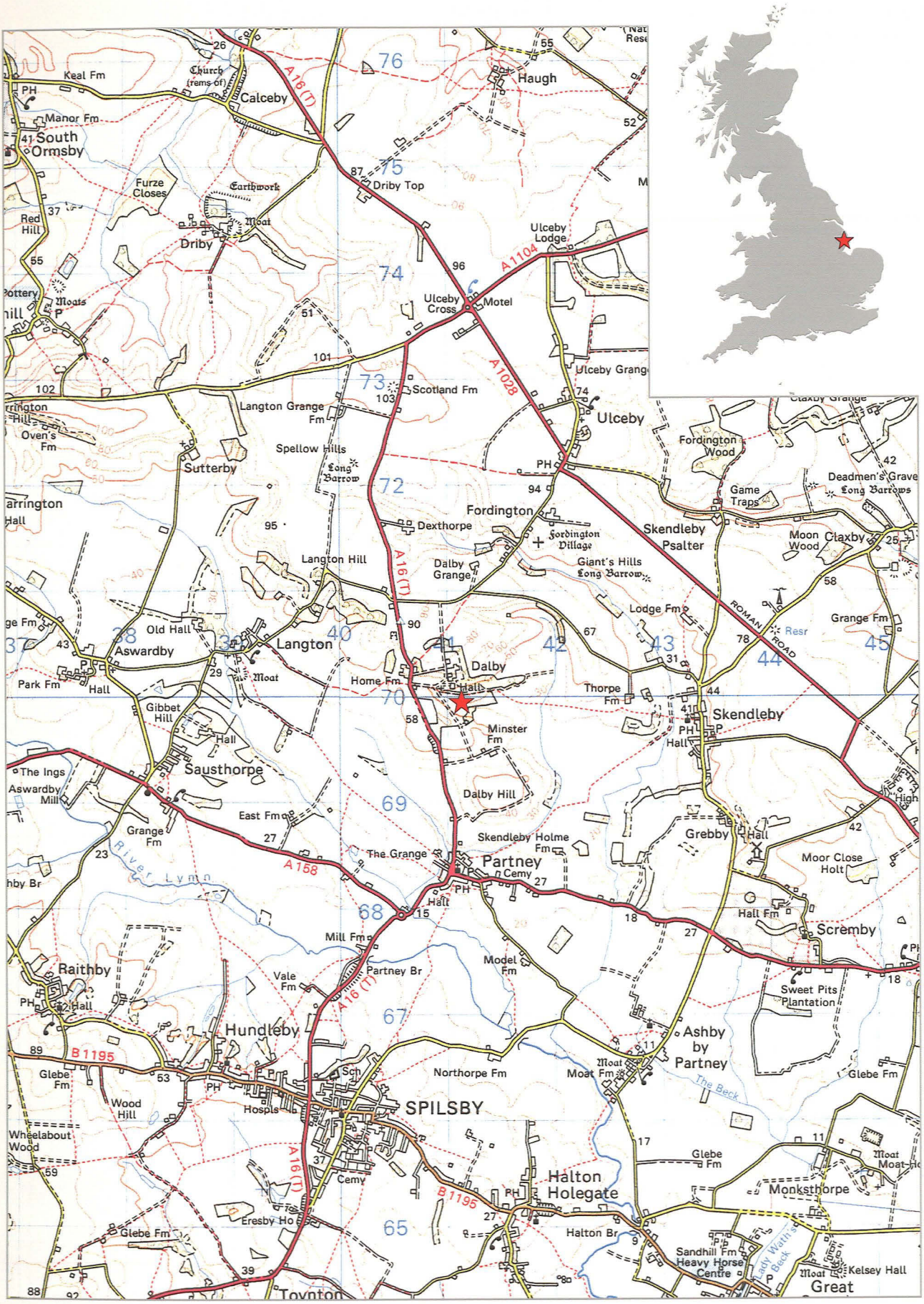


Figure 1: Location of the site

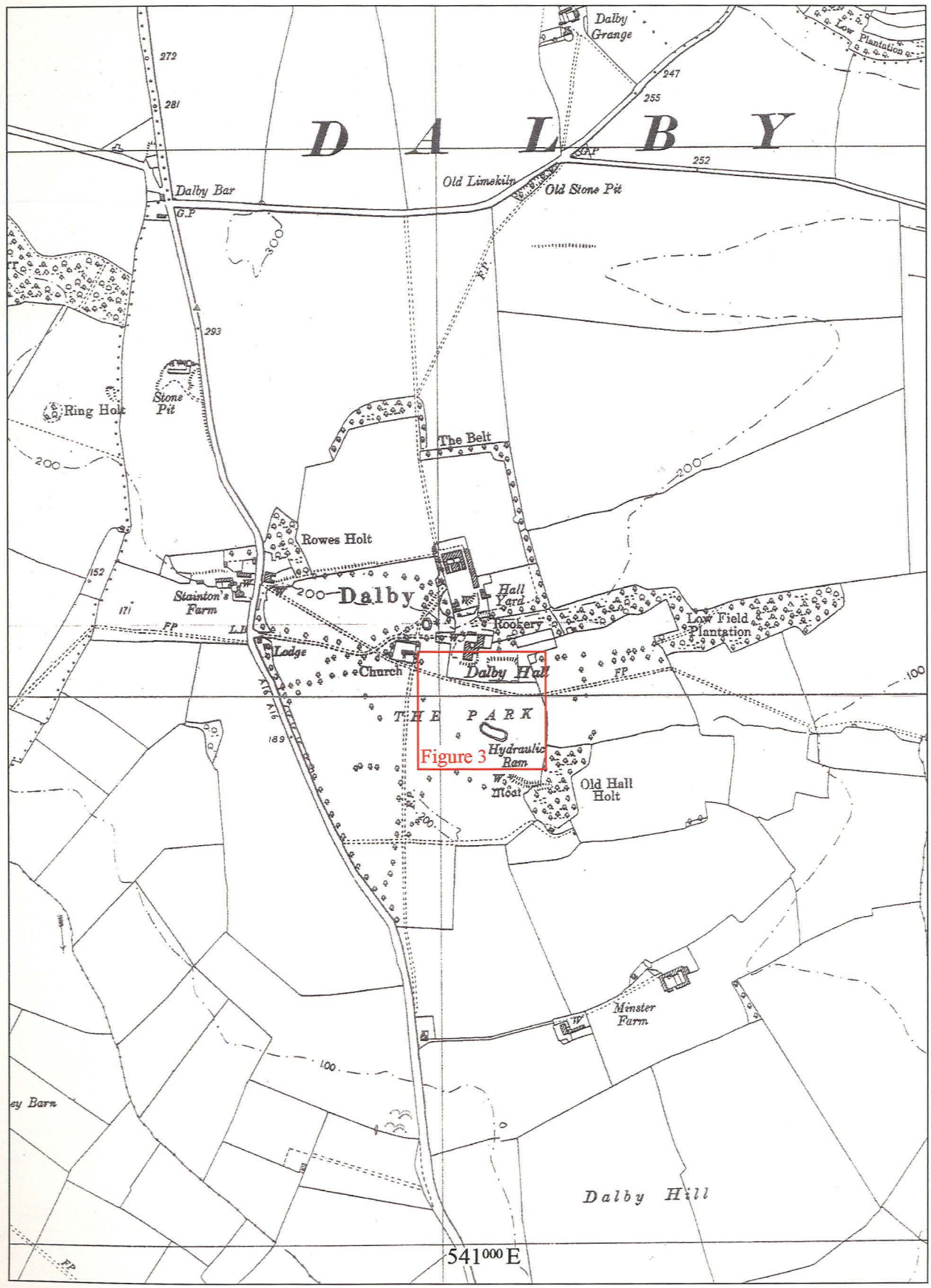
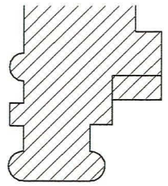


Figure 2: Location of the site (reproduced at 1:10 000 scale)



Dalby hall

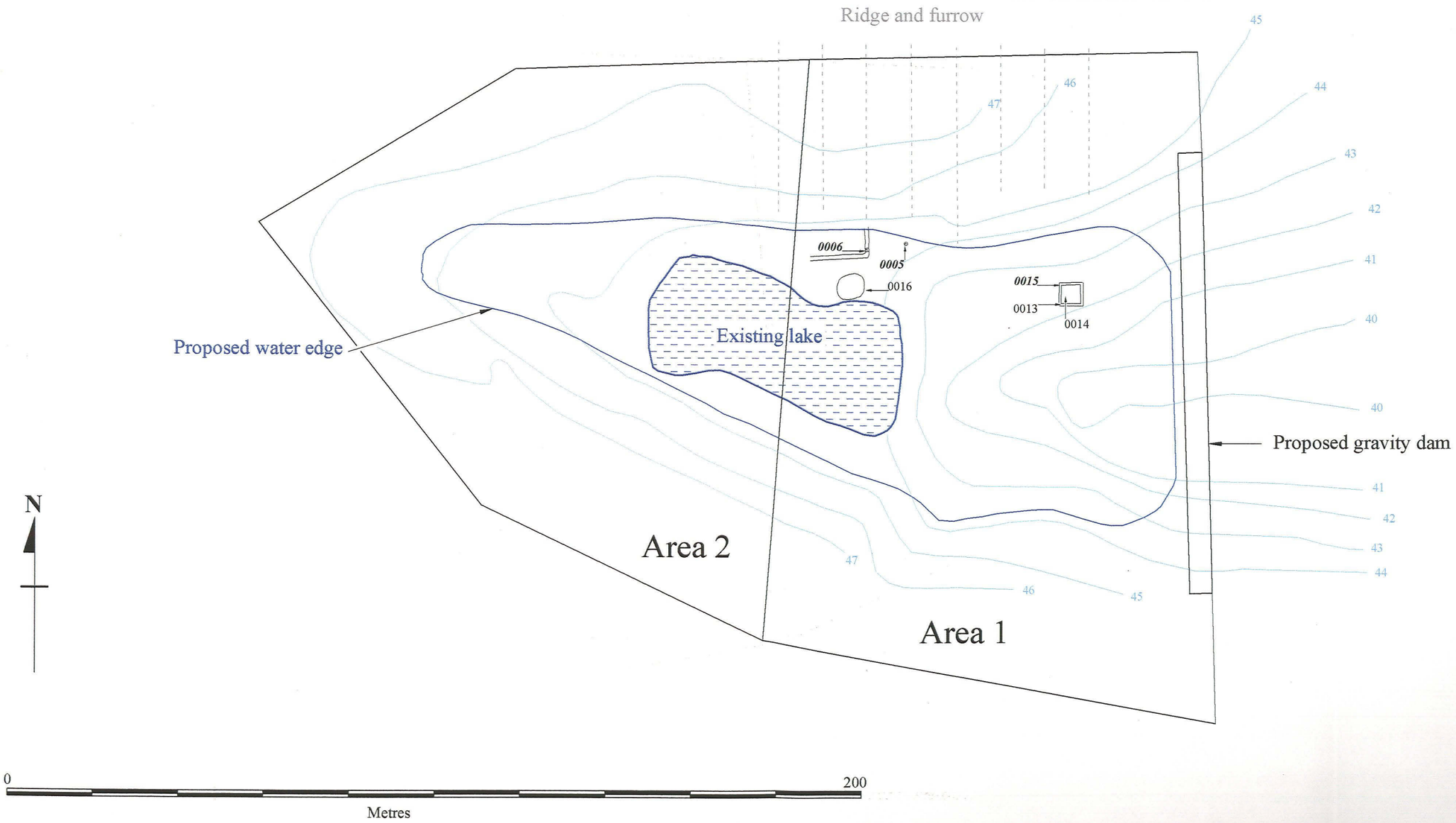


Figure 3: Plan of lake extension (1:1000 scale)

APPENDIX B – Plates 1-3

Plate 1: Existing ornamental lake (looking north-east)

Plate 2: Groundworks with Dalby Hall in background (looking north-west)

Plate 3: Building group 0017 (looking east)

APPENDIX C – Gazetteer of Contexts

SDH02 Gazetteer of Contexts

Context	Context Type	Description	Dimensions	Interpretation	Contains	Fill of	Finds
0001	Layer	Friable mid orangeish-brown clay siltwith rare chalk flecks.	0.10m to 0.20m in depth	Topsoil Area 1			yes
0002	Layer	Compact mid orangeish-brown clay silt with rare chalk flecks.	0.20m to 0.35m in depth	Subsoil Area 1			yes
0003	Layer	Tenacious mid yellowish-grey clay	3m+ in depth	Drift Geology Areas 1 and 2			
0004	Fill	ash; frequent charcoal flecks; moderate patches of mid orangeish-brown clay silt. Poorly sorted	Length 0.55m, Width 0.42m, Depth 0.25m	Fill of pit 0005		0005	yes
0005	Cut	Oval in plan sides moderate to steep; base concave	Length 0.55m, Width 0.42m,	Pit Area 1	0004		
0006	Cut	Linear with parallel edges. Orientated E-W. through to N-S. Sides moderate to steep; Base concave.	Length 13m+, Width 0.90m, Depth 0.45m	Ditch Area 1	0007		
0007	Fill	Compact mid orangeish-brown clay silt with rare charcoal flecks.	As 0006	Fill of ditch 0006		0006	
0008	Unstrat	Unstratified finds in Area 1		Unstrat finds Area 1			yes
0009	Layer	As 0001	0.10m to 0.20m in depth	Topsoil Area 2			yes
0010	Layer	As 0002	0.20m to 0.35m in depth	Subsoil Area2			yes
0011	Layer	As 0003	Area 2	Drift Geology Area2			
0012	Unstrat	Unstratified finds in Area 2		Unstrat finds Area 2			yes
0013	Structure	Up to two coures of brick bonded by light yellowish brown mortar with frequent pale grey lime flecks.	Length 5.60m, 0.50m, Depth 0.15m	Brick footings (part of 0017)		0015	yes
0014	Layer	Compact sandy clay silt with frequent small (≤0.05m) sub-rounded chalk fragments.	Length 5.60m, Width 2.30m, Depth 0.05m	Make up layer (part of 0017)			
0015	Cut	Square in plan with vertical sides and a flat base.	As 0013	(part of 0017)	0013		
0016	Layer	Friable dark greyish-brown mix of ash and carbonised material.	Length 5.60m, Width 5.50m Depth 0.20m	Burnt demolition deposit			yes
0017	Building Grp No.	Incorporates foundation trench 0015; brick foundations 0013; floor make-up 0014.		Square17th to 18th century building			

APPENDIX D – Pottery Archive

SDH02 Pottery

context	cname	sub fabric	form type	sherds	vessels	weight	decoration	part	description	date
0002	CREA		dish	6	1	43		rim		late 18th to early 19th
0002	CREA		tureen	1	1	27		knob		late 18th to early 19th
0002	CREA		jug	1	1	5		handle		late 18th to early 19th
0002	CREA		jug / cup ?	1	1	2		BS		late 18th to early 19th
0002	WHITE		dish	1	1	5	under glaze printed	BS		early 19th
0002	ENGS		bowl	1	1	9		BS	grey salt glaze or WEST	17th to 18th
0002	BERTH		large bowl	6	1	60		BS & base		17th to 18th
0002	LHUM		large jug or jar	1	1	40		BS		17th to 18th
0002	BL		large bowl	1	1	21		BS	local ?	late 16th to 18th
0002	GRE		large jar	1	1	10		BS		17th to 18th
0002	GRE		large jar	1	1	17		BS		17th to 18th
0002	LHUM		jar	2	1	7		BS		17th to 18th
0002	ST	B	jar or pitcher	2	1	7		BS	glazed	late 11th to 12th
0002	PMLOC	oxidised;fine sandy;med hard	small jug	16	1	273		base & body	reduced glaze same vessel as in 0008	17th to 18th
0002	MEDLOC	OX/R/OX;fine sandy;med hard	jug or jar	1	1	36		BS	sooted & abraded	13th to 15th
0002	SST		large jar	1	1	23		BS	fine fabric inc aggregate & greensand quartz	esax (or IA)
0002	SST	lower carb	small jar	1	1	7		rim		esax (or IA)
0002	TB		jug ?	2	1	58		base	sooted; ? ID	15th to 18th
0002	EMLOC	oxidised;fine sandy;med hard	small jug	1	1	5		BS	fine background with moderate larger rounded quartz splash glaze	12th to early 13th
0002	MISC	light firing;medium sandy	jug or jar	1	1	2		BS		Roman to late med
0002	MEDX	oxidised;fine sandy;soft	jug or jar	1	1	4		BS	sooted BEVO2	13th to 15th
0002	MEDX	oxidised;fine sandy;soft	jug or jar	1	1	15		BS		13th to 15th
0008	TPW		cup	1	1	10		BS	possibly bone china	mid 19th
0008	TB		large jug / jar	1	1	70		base		15th to 17th
0008	LERTH		large jar	1	1	70		base		15th to 17th
0008	MEDLOC	OX/R/OX;fine sandy;med hard	large jar / jug	1	1	34		base	sooted & abraded	13th to 15th
0008	BEVO1T		jug	1	1	11		bs	very abraded	12th to early 13th
0008	MEDX	OX/R/OX;coarse sandy;hard	jug	1	1	16	splashed glaze	BS	common coarse rounded quartz;moderate iron; inc greensand	late 12th to 13th
0008	SST		?	1	1	14		BS	moderate iron;occasional muscovite;medium to coarse some aggregate	esax (or IA)
0008	LKT		small jar	1	1	2		BS	leached;abraded;sooted	10th

SDH02 Pottery

context	cname	sub fabric	form type	sherds	vessels	weight	decoration	part	description	date
0008	LSH		jar	4	1	4		BS		10th
0008	MEDLOC	OX/R;med sandy;med hard	jug	1	1	4		rim	? BEVO1T ;very abraded	12th to early 13th
0008	MISC	shelly	?	1	1	5		BS	leached;sooted;very abraded	10th to 12th
0008	SST		large jar	1	1	16		BS	abundant fine grains occasional aggregates ; greensand ; mica ?	esax (or IA)
0008	GRE		large jar	1	1	23		base		16th to 18th
0008	PMLOC	oxidised;fine sandy;med hard	small jar	11	1	95	local ?	BS	reduced glaze same vessel as in 0002	17th to 18th
0010	MEDLOC	OX/R/OX;fine sandy;hard	small jar/jug	1	1	4		BS		13th to 15th
0012	GRE		large bowl	1	1	17		BS		17th to 18th
0012	LERTH		plant pot ?	1	1	11		BS		18th to 19th

cname	full name	earliest date	latest date
BERTH	Brown Glazed Earthenware	1550	1800
BEVO1T	Beverley Orange-type ware Fabric 1	1100	1230
BL	Black-Glazed Wares	1550	1750
CREA	Creamware	1770	1830
EMLOC	Local Early Medieval Fabrics	1150	1230
ENGS	Unspecified English Stoneware	1750	1900
GRE	Glazed Red Earthenware	1500	1650
LERTH	Late Earthenwares	1750	1900
LHUM	Late Humber-Type Ware	1550	1750
LKT	Lincoln Kiln-Type Shelly Ware	850	1000
LSH	Lincoln Shelly Ware	850	1000
MEDLOC	Medieval Local Fabrics	1150	1450
MEDX	Non Local Medieval Fabrics	1150	1450
MISC	Unidentified Types	400	1900
PMLOC	Post Medieval Local fabrics	1450	1700
SST	Early to Mid Saxon sandstone-tempered	550	800
ST	Stamford Ware	970	1200
TB	Toynton/Bolingbroke Wares	1450	1750
TPW	Transfer printed Ware	1770	1900
WHITE	Modern Whiteware	1850	1900

APPENDIX E – Brick and Tile Archive

SDH02 C.B.M.

context	cname	frags	weight (g)	description	date
0001	PNR	1	32	20mm thick; white fabric; bedded on iron	18 to 19 th
0002	FLOOR	2	765	30mm thick; corner; large pebble inclusion	post medieval to early modern
0002	MISC	1	7		?
0002	PNR	1	171	15 mm thick; quadrant cut-out	post medieval to early modern
0002	PNR	1	113	17mm thick	post medieval to early modern
0002	BRK	1	221	lge pebble inclusions; hand made	17th to 19th
0002	BRK	1	106	very abraded	post medieval to early modern
0002	PNR	1	77	20 mm thick	early modern
0002	PNR	1	40	light firing	17th to 18th
0008	MISC	1	298	25mm thick; some deep draw lines; light firing	19th to 20th
0008	PNR	1	55	20mm thick	18th to 20th
0008	MISC	1	23	light firing	?
0012	MISC	1	628	140 mm wide; 25 mm thick; wire drawn; applied ledge? Broken off; ?bitumen	19th - 20th
0012	PEG	1	22		18th to 19th
0013	BRK	3	2382	mortared; burnt in situ. 55mm thick;225 mm long; handmade; large flint inclusions; very poor fabric	17th - 18th
0016	BRK	5	843	handmade; burnt brick; poor fabric	mid 17th - 18th
0016	BRK	19	461	handmade	post medieval
0016	BRK	2	88	handmade; burnt; interior reduced to vesicular	mid 17th to 18th
0016	BRK	1	986	handmade; 110 x 55 mm; reduction shadow; burnt	mid 17th to 18th
0016	BRK	1	1157	handmade; 110 x 55 mm; reduction shadow; burnt; surface part vitrified; mortar	mid 17th to 18th
0016	BRK	1	553	handmade; 60mm thick; burnt; oxidised post breakage surfaces; salt surfacing	mid 17th to 18th
0016	BRK	1	417	handmade; 60 mm thick; burnt	mid 17th to 18th
0016	BRK	1	355	handmade; 45 mm thick; burnt;	mid 17th to 18th
0016	BRK	1	150	handmade; burnt; salt surfacing	mid 17th to 18th
0016	BRK	1	116	handmade; burnt; 55mm thick	mid 17th to 18th
0016	BRK	1	125	handmade; burnt	mid 17th to 18th
0016	BRK	1	487	handmade; ?industrial; burnt to near vitrification	mid 17th to 18th

Glossary of Codenames

BRK	Brick
FLOOR	Floor Tile
MISC	Miscellaneous
PEG	Peg Tile
PNR	Flat Roof Tile
CBM	Ceramic Building Material

APPENDIX F – Slag Report

Recording methodology.
The assemblage from the site has been identified and recorded on *pro forma* recording sheets and this information has been entered directly into Table 1 below. The slag was visually examined and identified solely on morphological grounds, sometimes with the aid of a x10 binocular microscope. A note of probable fuel type has been recorded when fragments were incorporated within the slag.

Table 1. Catalogue of the slag.

Context	Type	Count	Weight	Comments
0002	HB	1	63g	Charcoal fuel; very abraded, 45 x 65 x 20mm
0004	TAPD	5	64g	Small complete dribbles; large charcoal imprints
0004	TAPD	1	143g	Largest amalgam of dribbles; moulded by charcoal?
0004	TAPD	7	311g	Fragments of dribble amalgams; large charcoal imprints
0004	CINDER	1	20g	Reduced hearth lining inclusions; sandy; all dark grey

HB: Plano-convex slag accumulation (commonly known as hearth bottom); TAPD: tap-slag dribble.

Discussion.
This highly unusual assemblage of iron smelting slag was recovered from a single pit (0005), 0.55m long, 0.42m wide and 0.25m in depth. Some of the natural in the base and sides of the feature had been heat affected, suggestive of *in situ* burning. The fill was composed of burnt clay, charcoal and slag; there was no dating evidence. This report is on a sample of slag taken from this pit, the total quantity present is not known. The charcoal was not sampled.

This assemblage of iron smelting slags from the pit, includes no evidence for the smithing of iron, primary or secondary (Table 1). The smelting slags are produced when iron ore was smelted in a furnace to produce metallic iron. During primary smithing the resultant blooms were smithed to stock iron and only during secondary smithing is this then smithed to manufacture or repair objects. Both types of smithing would be expected to generate hammerscale and smithing slags, and although it is normally expected that primary smithing was undertaken at the smelting site, there is no evidence for it from the sample collected during this evaluation. The only hearth bottom (generated by iron smithing) was from a sub-soil layer (context 0002) and may not be related to the smelting-slag assemblage. None of the soil from the pit was sampled so it is not known whether any hammerscale was present.

Most of the slag is tap-slag dribbles that do not have the characteristic upper vesicular flowed surface, a standard feature of normal tapped slags. These are instead amalgams of small individual flows that appear to have been moulded by large pieces of charcoal. The individual pieces are very dense with few voids apparent. Another feature is the fact that in many instances it is not possible to distinguish the top of the tap from the base, the orientation of these slags is usually obvious. This may be partly explained by the fact that some pieces have large charcoal imprints on most surfaces giving the impression that the slag was tapped into a charcoal heap. None of the slag is magnetic.

The condition of the slag is generally good, most of the tap pieces retain their dark grey/black glossiness and do not appear to have been affected in any way by the soil conditions.

Large pieces of charcoal were evidently the fuel used in the smelting furnace, these are a requirement for iron smelting to stop the load within the furnace from collapsing in on itself while allowing the air to circulate. The size of the charcoal indicates that timber, or at least wood, of a reasonable size was being carbonized for the iron industry, which required charcoal in considerable quantity (Crew 1991), probably from managed woodland (Cowgill forthcoming).

The only possible parallel for this group, known to the author, is a large assemblage of slag that was recently recovered from West Moor Park, near Doncaster, but there are some significant differences although these may just be due to the small size of this sample (Cowgill 2001). The West Moor Park group included both tap dribbles, most much larger than these pieces and significantly also slag blocks, a type of slag that is thought to be of Iron-Age date although the features from which the slag was recovered were thought to be 2nd century in date. Also, quite a high proportion of the West Moor Park slags were magnetic, not a feature noted here. The date of the Spilsby slag is a problem, it is unlike any other Romano-British assemblage recorded from Lincolnshire, and has none of the characteristics expected of medieval or later slags (they tend to be lighter and glassier). This having been said, so little is currently known about the range of slags produced, and how these may vary depending on the type of iron being produced and type of ore used, it is impossible to suggest with any reliability the date of the iron production. It is always a possibility that given the small size of the assemblage, and the peculiar nature of the slag, the iron smelters were unsuccessful at this particular location, perhaps due to the unsuitability of one of resources required for iron production (iron ore, clay and charcoal).

Recommendations.

If further work is to be undertaken at this site, it is important that the possibility of further features associated with, or containing debris from, iron production are explored. It is always important to date unusual assemblages such as this one, and the opportunity to recover enough charcoal for a radiocarbon date, from a feature containing slag should be considered a high priority.

Given the extremely unusual character of this assemblage, it is recommended that the SMR highlight its location in case there is any further development close to this site. In which case further evidence for this industry should be given a high priority.

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