# Manor Farm, Blaxton, Doncaster.

# Report on an Archaeological Evaluation.



View of Trench 3

ARS Ltd Report No. 2007/78 February 2008

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# Archaeological Research Services Ltd

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## Executive Summary

Archaeological Research Services Ltd were commissioned to undertake an archaeological evaluation on the land adjacent to Mosham Road on behalf of Red Squirrel Developments. The positions of four evaluation trenches were agreed upon by South Yorkshire Archaeology Services after consultation of a historical map regression of the development site. The trenches aimed to target areas close to the roads in the attempt to reveal any remains relating to medieval burgage plots.

The evaluation revealed that the south of the site had been heavily truncated through modern activity. No archaeological remains were uncovered in trenches one and four. The two trenches located on the north side of the site revealed a series of pits containing animal bone thought to be from 18<sup>th</sup>/19<sup>th</sup> century farm activity and a large pit in trench three contained sherds of medieval/early post-medieval pottery that may be related to activity associated with the medieval burgage plots.

## 1. Introduction

1.1 This document reports the findings of an archaeological evaluation undertaken on the land adjacent to Mosham Road, Blaxton by Jessika Shakarian of Archaeological Research Services Ltd on behalf of Red Squirrel Developments.

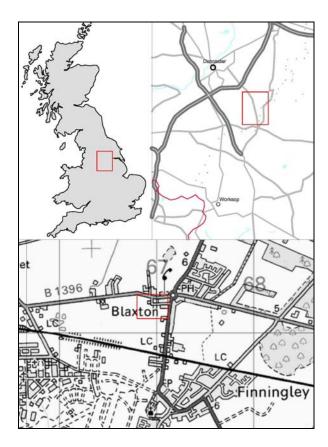
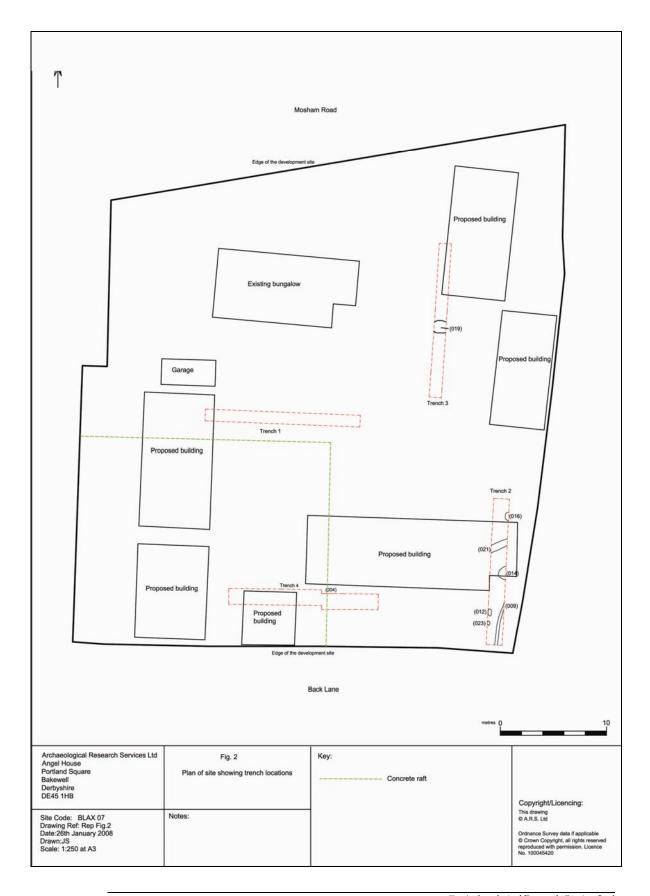


Fig. 1 Location map of the development site.

## 2. Location and Geology

- 2.1 The village of Blaxton is located on the A614 about 7 miles south east from Doncaster (SE671004). The development site is on land between the Mosham Road and Back Lane.
- 2.2 The site is situated on the drift deposits which overlie a bedrock of Triassic Mercia Mudstones. The surface drift geology upon which the site is located comprises sand and gravel deposits. (www.countryside.gov.uk Landscape Policy and Character, 39. Humberhead Levels).



#### 3. Background

- 3.1 The village of Blaxton derives from the medieval name 'Blackstone', probably referring to the location of a boundary stone. Blaxton does not appear in the Domesday Book of 1087 and the earliest written reference dates from 1213, when it is named as 'Blacston' in the *Rotuli Litterarum Patentium* (SYAS Brief).
- 3.2 The village of Blaxton follows a typical medieval layout, with two streets running parallel to each other, in this case Mosham Road and Back Lane. The development site is located within the historic core of the village and as such could reveal archaeological remains pertaining to this period or earlier.

#### 4. Aims and Objectives

- 4.1 The aim of the archaeological evaluation was to gather sufficient information to establish the extent, condition, character and date of any archaeological features and deposits within the area of proposed development, and to record any features or deposits at an appropriate level.
- 4.2 It was also stated in the brief set by the South Yorkshire Archaeology Service (SYAS) that this stage of archaeological evaluation aimed to inform any further archaeological work arising as a consequence of the development.

#### 5. Methodology

- 5.1 The archaeological evaluation took the form of four trial trenches, each approximately 19m x 2m, with 20 square metres of contingency trenching in case features had to be followed in order to gain an understanding of them. The trenches were opened by machine using a toothless ditching bucket down to the first significant archaeological horizon in level spits of a maximum depth of 0.2m, at which point the trenches were examined and cleaned by hand. All machine excavation was carried out under careful archaeological supervision.
- 5.2 All archaeological remains and deposits were excavated by hand in a controlled way and in stratigraphic order.
- 5.5 The features were recorded according to the normal principles of stratigraphic excavation. Each context was recorded on pro-forma records which included the following: character and contextual relationships; detailed description (dimensions and shape; soil components, colour, texture and consistency); associated finds; interpretation and phasing as well as cross-references to the drawn, photographic and finds registers.
- 5.6 Sections were drawn through all significant cut features at a scale of 1:10 and levelled to ordnance datum. Each trench was planned at 1:50 with individual features being planned at 1:20. Trench sides were also drawn in section at a scale of 1:20. All levels taken were tied into the Ordnance Survey National Grid.
- 5.7 All artefacts were recorded, bagged by type and context and retained.

5.8 A photographic record was maintained including photographs of all significant features and overall photographs of each area or trench. All images were taken in black and white print, colour slide and digital format, and contain a graduated photographic scale.

#### 6. Assessment Results

## 6.1 Trench 1

6.1.1 Trench 1 was positioned 10.87m from the south-west corner of the existing bungalow and 26.55m from the southern site boundary wall. The trench measured 18.25m in length and had a maximum width of 1.48m and a maximum depth of 1.17m at the west end (Figs. 2 and 3). The stratigraphy at the east end of the trench consisted of a sandy silt deposit (003) found below the tarmac. The deposit was dark brown (10 YR 3/3) with a maximum depth of 0.38m, it lay on top of the natural sand and gravel drift (007) which was pale brown (10YR 4/6 – 10YR 5/6). The deposit contained a clay pipe stem and a sherd of modern pottery and continued for a distance of 6.4m before encountering a brick wall. The brick wall (004) ran diagonally across the width of the trench (Fig. 4). The deposit (003) was banked up on the east side of the wall and was not found to continue on the west side of the structure.



Fig. 3 Trench 1, looking west. (Scale: 1m and 2m).



Fig. 4 Trench 1: Brick wall (004), looking west. (Scale: 1m).

- 6.1.2 The brick wall measured 1.54m x 0.55m x 0.30m and survived to three courses in height. The wall was constructed on top of the natural sand and gravel (007). The bricks were mortared with cement and in a poor condition. They were laid in a typical English bonding pattern. A building is shown to exist on the 1902 Ordnance Survey map (Appendix 4) that ran on a north-south alignment in the same position as the wall (004) encountered in Trench 1. It can therefore be assumed that the wall represents an exterior wall of an earlier farm building.
- 6.1.3 Demolition rubble (005) was found to exist on the west side of the wall and extended for a distance of 11.95m to the end of the trench. The deposit contained bricks, mortar and modern pottery and had a maximum depth of 0.5m. The deposit was thickest towards the west end of the trench. The rubble is probably the remains of the farm building associated with the brick wall (004). Directly below the demolition rubble was a black burnt waste deposit. The deposit had a maximum thickness of 0.6m and lay on top of the natural alluvium. This deposit may represent industrial activity or may, alternatively be a levelling layer, as the natural alluvium sloped downwards at the west end of the trench. It was not possible to establish if the slope was natural or the result of modern truncation.

#### 6.2 Trench Two

6.2.1 The south-east corner of Trench 2 was located 1.6m from the south-east corner of the development site and the north-east corner of the trench was located 3.45m from the east wall of the development site (Figs. 2 and 5). The trench measured 18m in length with a maximum width of 1.8m and a maximum depth of 0.67m. Below the tarmac was a reddish brown (5YR 4/4) silty clay deposit (010), approximately 0.28m in depth that contained some modern finds (Fig. 5). The deposit lay above the natural sand and gravel and probably represents a deposit that has accumulated over a period of time.

There were a number of features cut in to the natural throughout the length of Trench 2 (Figs. 6, 7 and 8).



Fig. 5 Trench 2, looking south. (Scale: 1m and 2m).

- 6.2.2 A pit (016) was located 1.6m from the northern end of the trench. The full dimensions of the pit were not established as it was against the east baulk of the trench. The exposed area of the pit measured 0.97m x 0.37m x 0.12m and had a brown (10YR 4/3) silty fill (015) that contained some degraded animal bone and modern pottery. Approximately 2.22m south of the pit was a linear feature (021) that cut across the trench on an east-west alignment. The linear was later established as a modern feature due to the modern plastic finds found within the fill.
- 6.2.3 A pit (014) was located 8m south from the northern end of the trench. The full dimensions of the trench were not established as it was against the east baulk of the trench. The pit measured 1.56m x 0.86m x 0.27m and had a brown (10YR 4/3) silty fill (013) that contained an articulated animal skeleton. Upon excavation of the pit the rear end of an animal was revealed, most likely to be a sheep. Some of the animal's mandible was visible in the fill on the side of the pit that was left unexcavated, leading to the interpretation that the animal was a complete *in situ* burial.



Fig. 6 Trench 2: Section of pit (015), looking north. (Scale: 0.25m).



Fig. 7 Trench 2: View of pit (014) showing the articulated animal skeleton, looking east. (Scale: 0.25m).

6.2.4 At the south end of the trench two pits (012 and 023) and a linear (009) were identified (Figs. 8 and 13). The pits were located on the west side of the trench and were 0.65m apart. The pit (012) measured 0.82m x 0.39m x 0.23m and had a brown (10YR 4/3) silty fill (011) that contained some animal bone that due to its degraded

nature was not collected. The pit (023) measured 0.47m x 0.30m x 0.16m and had a brown  $(10YR\ 4/3)$  sandy fill with no finds. The linear was exposed for a length of 4.6m and measured 0.34m x 0.14m (Fig.13). The linear had a brown  $(10YR\ 4/3)$  sandy fill with no finds.



Fig. 8 Trench 2: Section of pit (011), looking north. (Scale: 0.25m).

## 6.3 Trench Three

6.3.1 The north-west corner of Trench 3 was located 11.4m from the north boundary wall of the development site and 9.34m east from the existing bungalow. The trench measured 18.80m with a maximum width of 1.4m and a maximum depth of 1.22m (Fig. 9). Below the tarmac was a sandy clay deposit (017) that was dark brown (7.5YR 3/2) and contained rounded pebbles and bricks. The deposit overlay the natural sand and gravel which was revealed at a depth of approximately 0.5m but became deeper at the centre of the trench where the footings for a small brick and concrete structure were encountered. Below the brick footing and the deposit (017) a pit was uncovered at 1.2m below the modern ground surface.



Fig. 9 Trench 3, looking north. (Scales: 1m and 2m).

- 6.3.2 The pit (019) measured 1.4m x 1.43m x 0.42m although it extended to the east and west of the trench (Fig.10). The fill (018) of the pit appeared as a homogenous brown (7.5YR4/4) sandy silt although it had lenses of re-deposited natural throughout. The base of the pit contained several burnt stones suggesting that domestic debris was deposited in the pit, perhaps associated with cooking activities (Figs. 10 and 11). A degraded wooden post was located at the base of the pit to the south end running in a westerly alignment into the section.
- 6.3.3 Excavation of the pit revealed a group of twenty sherds of pottery which have been attributed a medieval and early post-medieval date (Cumberpatch, See Appendix 3 below). Cumberpatch argues that given the presence of two later medieval to early post-medieval Coal Measures Purple Ware sherds, that the pit probably dates from this time with the incorporation of some earlier sherds as residual elements within the later assemblage (See Appendix 3). Several of the sherds were heavily sooted on the outside lending further support to the interpretation of the pit fill as containing domestic debris, perhaps associated with cooking activities.



Fig. 10 Trench 3: Pit (019), looking north. (Scale: 2m).



Fig. 11 Trench 3: Base of the pit (019) showing the burnt stones at the base. (Scale: 0.5m graduations).

## 6.4 Trench Four

6.4.1 The south-east corner of Trench 4 was located 7.84m from the south boundary wall of the development site and the south-west corner of the trench was 20.2m from the west boundary wall of the development site (Figs. 12 and 13). The trench measured 17.5m in length with a maximum width of 1.8m and a maximum depth of 0.54m. To

the east of the trench below the tarmac was a reddish brown (5YR 4/4) silty clay deposit (010), also found in Trench 2, approximately 0.37m in depth that contained some modern finds. The deposit lay above the natural sand and gravel and probably represents a deposit that has accumulated over a period of time. A concrete raft was encountered at 5.76m from the east side of the trench. The raft overlay the whole of the south-west side of the site in the area of a former building and had effectively truncated the ground down to the natural sand and gravel, effectively removing any earlier deposits. The brick wall (004) was also encountered again within this trench on the east side of the concrete raft. No features or finds were discovered within Trench 4.



Fig. 12 Trench 4, looking west. (Scale: 1m and 2m)

#### 7. Discussion

The evaluation trenching revealed that the concrete raft which was present over the majority of the south-west area of the site appears to have truncated any earlier activity, likewise the remains of the building located in Trench 1 also appears to have truncated earlier activity (Appendix 4, Figs. 4 - 7). The south-east and north-east quadrants of the site had been partially truncated to a depth of approximately 0.24m when the tarmac and crushed stone had been deposited, despite that cut features were still found to exist intact below that in Trenches 2 and 3. The features identified in Trench 2 probably represent evidence of  $18^{th}$  -  $19^{th}$  century farm activity and the

substantial pit revealed in Trench 3 that contained some medieval and early post-medieval pottery probably dates to the 16<sup>th</sup> Century AD. Preliminary assessment from a pollen sample from this pit suggests that the surrounding area was largely open with cultivation of barley and oats taking place and with areas of marsh and pooled water nearby (see Appendix Five).

#### 8. Conclusions

In conclusion, the evaluation confirmed the suggestions set out in the brief by South Yorkshire Archaeological Services that the main area of interest would be in the north-east of the development site located close to Mosham Road but cut features were also found to exist in the south-east of the site. Also, structural remains, in the form of a brick wall surviving to three courses in height, of earlier buildings were identified in Trenches 1 and 4 which give an insight in to the development and use of the site in the 19<sup>th</sup> century.

## 9. Publicity, Confidentiality and Copyright

- 9.1 Any publicity will be handled by the client.
- 9.2 Archaeological Research Services Ltd will retain the copyright of all documentary and photographic material under the Copyright, Designs and Patent Act (1988).

## 10. Statement of Indemnity

10.1 All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

#### 11. Acknowledgements

11.1 ARS Ltd would like to thank all those involved with this work. In particular, the developer Ian Mason of Red Squirrel Developments and Andy Lines of South Yorkshire Archaeology Service.

# 12. References www.countryside.gov.uk - Landscape Policy and Character, 39. Humberhead Levels.

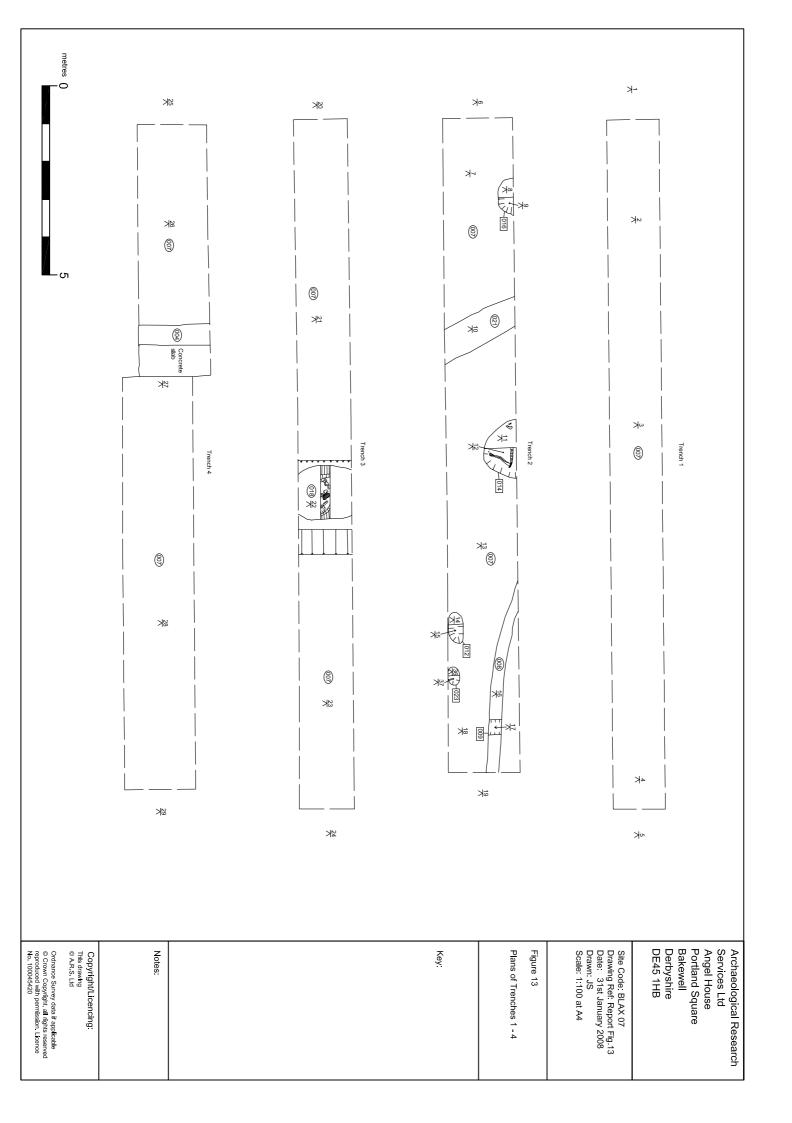
# APPENDIX ONE

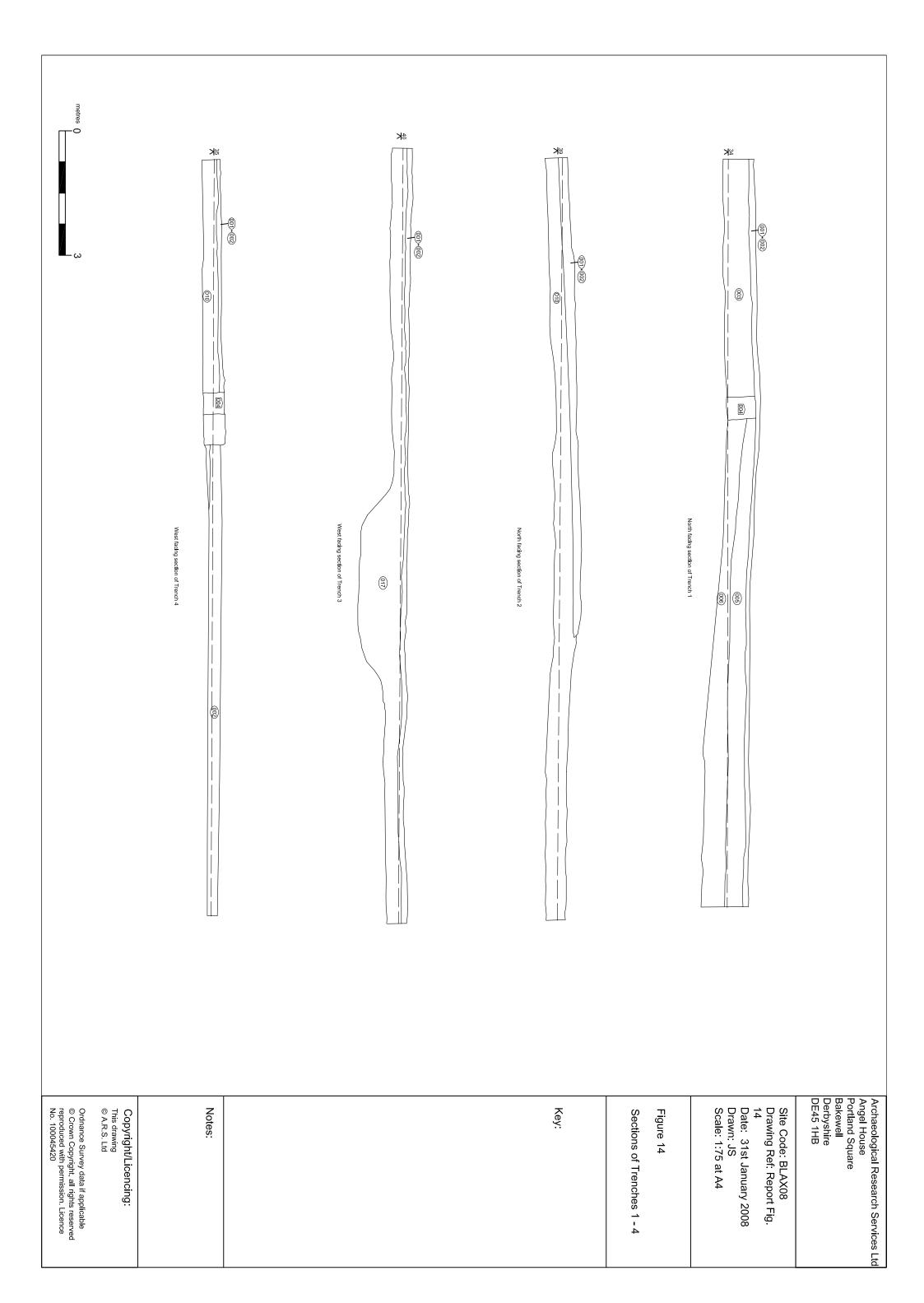
Context Register for Trenches 1-4

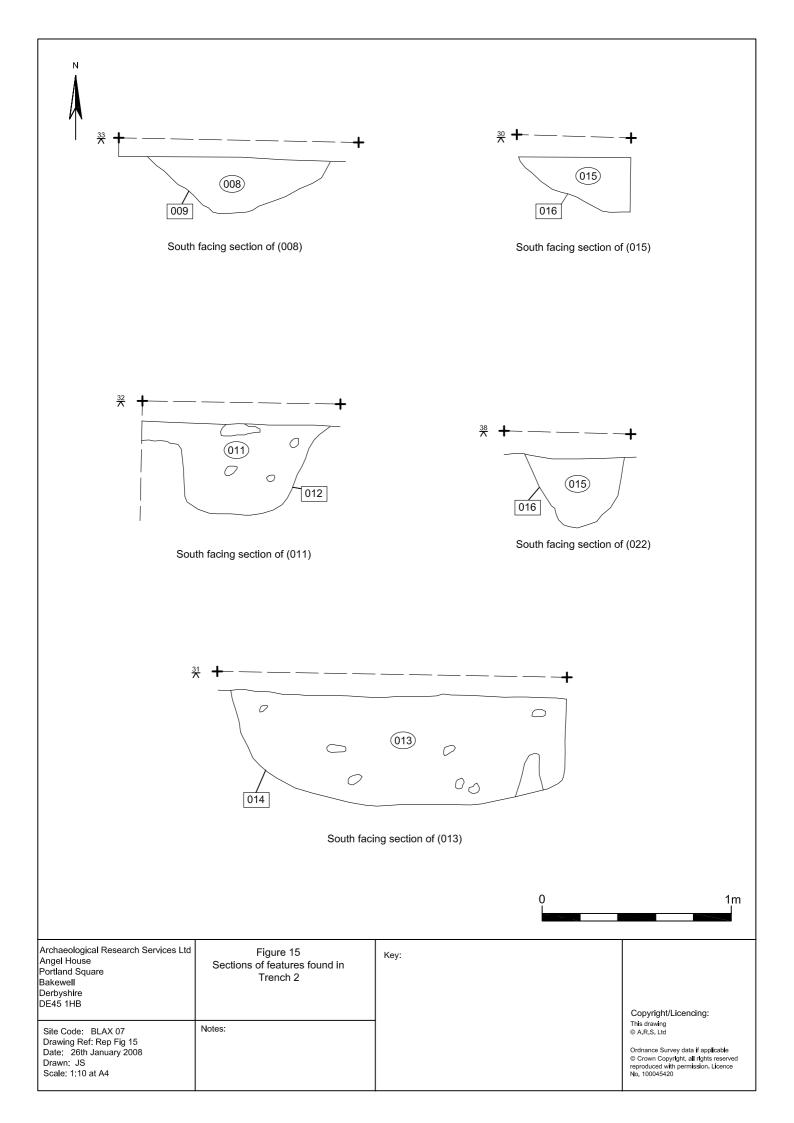
Context No.	Trench	Description
001	Across site	Tarmac found across the site. Max. depth 0.1m.
002	Across site	Hardcore rubble below tarmac.
003	1	Deposit located at the east end of T1. Dark brown (10YR 3/3) silty sand with pebbles, brick, clay pipe, pottery inclusions. Overlay the natural alluvium. Max.
		depth 0.67m.
004	1	Brick wall located in T1 on a north-south alignment - 6.4m from the east end of T1. Wall was 2 courses wide and 3 courses deep with a loose cement mortar. Exterior wall of a farm building.
005	1	Demolition rubble present in T1 located on west side of (004). Layer thicker towards west end of the trench max depth 1.15m. Represents the remains of a farm building.
006	1	Layer of burnt waste below (005) found in T1. Max thickness 0.2m and overlay the natural alluvium. May represent industrial activity or is possibly a levelling layer.
007	Across site	Natural alluvium. Sand and gravel mottled in colour (5YR 4/4 – 7.5YR 5/6). Reached at a depths between 0.5m – 0.8m across the site
008	2	Fill of a linear found at south end of T2. Sandy silt fill 10YR 4/3 with rounded pebble inclusions. Probably represents a small gully.
009	2	Cut of (008).
010	2 and 4	Deposit found within T2 and 4 above (007). Deposit contained some modern finds and probably represents the areas use over an extended period. Max. depth 0.55m.
011	2	Fill of pit cut in to the natural on the east side of T2. Inclusions of pebbles and animal bone. Domestic waste pit from 18 <sup>th</sup> – 19 <sup>th</sup> century farm activity. (0.89m x 0.56m x 0.23).
012	2	Cut of (011)
013	2	Fill of pit containing articulated animal skeleton probably a sheep in T2. Section revealed rear end of the animal. (160m x 0.89m x 0.27m). Brown (10YR 4/3) silty fill. Domestic waste pit from 18 <sup>th</sup> – 19 <sup>th</sup> century farm activity.
014	2	Cut of (013)
015	2	Fill of pit in T2 on the north side. Pit contained some animal bone and had a sandy silt fill (10YR 4/3). (1.07m x 0.27m x 0.12m) Domestic waste pit from 18 <sup>th</sup> – 19 <sup>th</sup> century farm activity.
016	2	Cut of (015)
017	3	Deposit in T3 found below the tarmac and above the natural across the length of the trench. Deeper at the centre of the trench due to a brick footing. Max depth 1.2m. Inclusions of brick, pebbles and some modern pottery. (7.5YR 3/2)
018	3	Fill of a large waste pit found below (017) in the centre of T3. The fill was interspersed with lenses of redeposited natural suggesting some disturbance. Early post med and med pottery found heavily sooted suggests cooking use. Burnt stones at the base also point to cooking activity. Wooden post located at the base.
019	3	Cut of (018). Pit steep sided to the north sloping to the south. Base uneven due to burnt stones.
020	3	Coarse burnt black deposit surrounding the burnt stones at the base of (018).
021	2	Modern ditch running across T2 Not excavated as plastic and metal and other modern objects identified in the fill.
022	2	Fill of pit located at the south of T2. sandy silt (10YR 4/3).
023	2	Cut of (022)

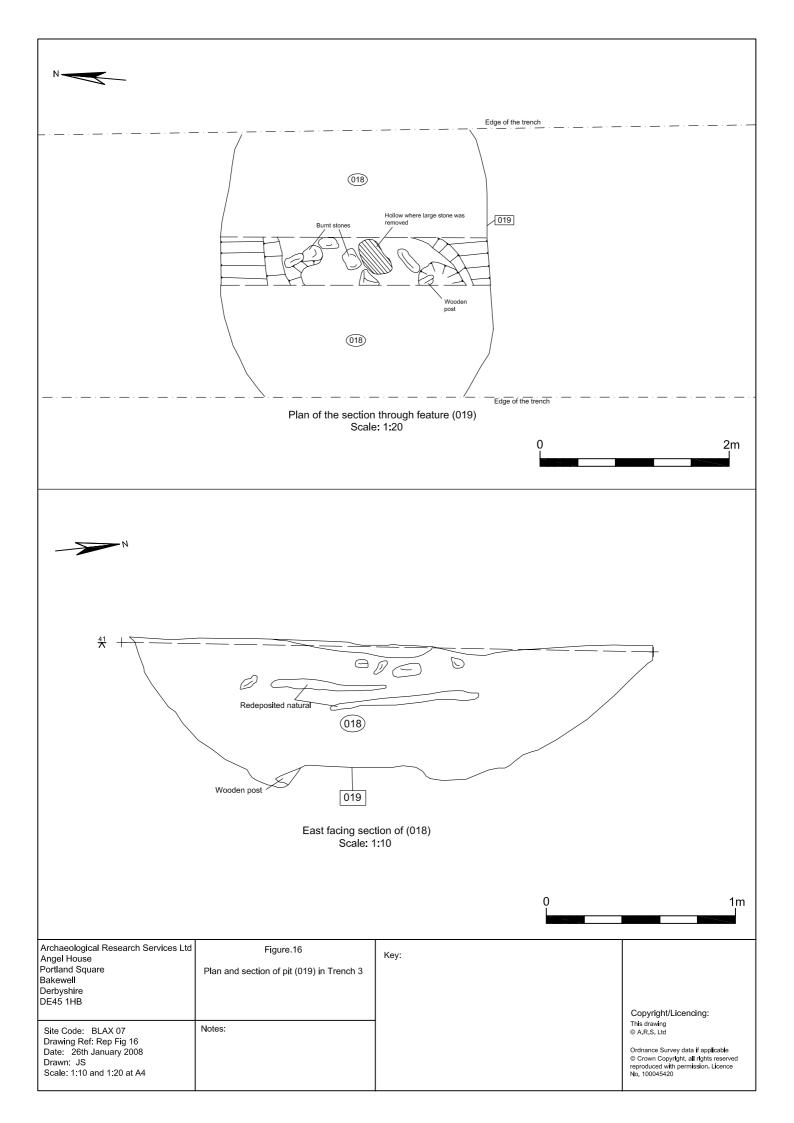
# APPENDIX TWO

Illustrations
And
Table showing levels for illustrations









# Levels Register

T.B.M - 6.75B.S - 1.71

Level No.	Levels in metres OD
1	6.87
2	6.22
3	6.21
4	5.78
5	6.53
6	6.96
7	6.42
8	6.43
9	6.29
10	6.37
11	6.46
12	6.15
13	6.45
14	6.66
15	6.25
16	6.47
17	6.32
18	6.48
19	7.06
20	6.96
21	6.29
22	5.875
23	6.37
24	6.94
25	6.865
26	6.34
27	6.25
28	6.39
29	6.87
30	6.48

Level No.	Levels in metres OD
31	6.50
32	6.56
33	6.56
34	6.41
35	6.66
36	6.49
37	6.35
38	6.51
39	6.81
40	6.63
41	6.20

# APPENDIX THREE

Specialist Pottery Report by C. Cumberpatch

## Medieval pottery from Blaxton, Doncaster, South Yorkshire

C.G. Cumberpatch BA PhD Freelance Archaeologist

#### Introduction

A group of twenty sherds of medieval pottery was examined by the author on 24<sup>th</sup> January 2008. The group had been recovered from the fill of a pit (Trench 3, context 18) identified in the course of an excavation at Manor Farm, Blaxton (BLAX07) in advance of the construction of houses.

#### The pottery

The pottery assemblage was of a diverse character and included sherds of pottery of rather different dates, although all of it was of medieval or early post-medieval type. The latest in date were two sherds of Coal Measures Purple ware (mid to later 15<sup>th</sup> to 16<sup>th</sup> century). Of the remaining sherds, eleven can be classed as Coal Measures Whiteware (early 14<sup>th</sup> to mid to later 15<sup>th</sup> century), a diverse group of wares manufactured, like the later purple wares on at least two sites in South Yorkshire (Firsby Hall Farm and Green Lane Rawmarsh). Full details of the sites and the pottery have been published elsewhere and need not be repeated here (Hayfield and Buckland 1989, Cumberpatch 2004). The group included one bowl or pancheon rim and two sherds from the bases of similar vessels.

The remaining seven sherds fell into two groups. The first, consisting of four sherds, two of which joined, appeared to be from a single vessel, an open bowl or small pancheon with clear glaze internally. Like other sherds in the assemblage, this was heavily sooted externally. The buff sandy fabric contained rounded quartz grit but few other distinctive inclusions. Of the second group, the base of a hollow ware vessel had a similar fabric to the bowl or pancheon while the remaining two had fine sandy fabrics, one oxidised, one reduced. The origin of these vessels is unknown but a date within the 13<sup>th</sup> or 14<sup>th</sup> centuries would seem appropriate, given their appearance and overall character. Further work on the assemblage should include a definite identification of these sherds or a full description of the fabric if they cannot be more closely identified.

#### Discussion

The date of the filling of the pit would seem to be indicated by the presence of the two later medieval to early post-medieval Coal Measures Purple ware sherds. A number of the earlier Coal Measures Whiteware sherds appear somewhat more abraded than the remainder of the pottery and this might suggest that they were incorporated into a later pit fill as residual elements within a later assemblage. This having been said, the general level of abrasion is low, suggesting that the pit was filled relatively rapidly and that most of the pottery was not subject top any high degree of mechanical or chemical weathering.

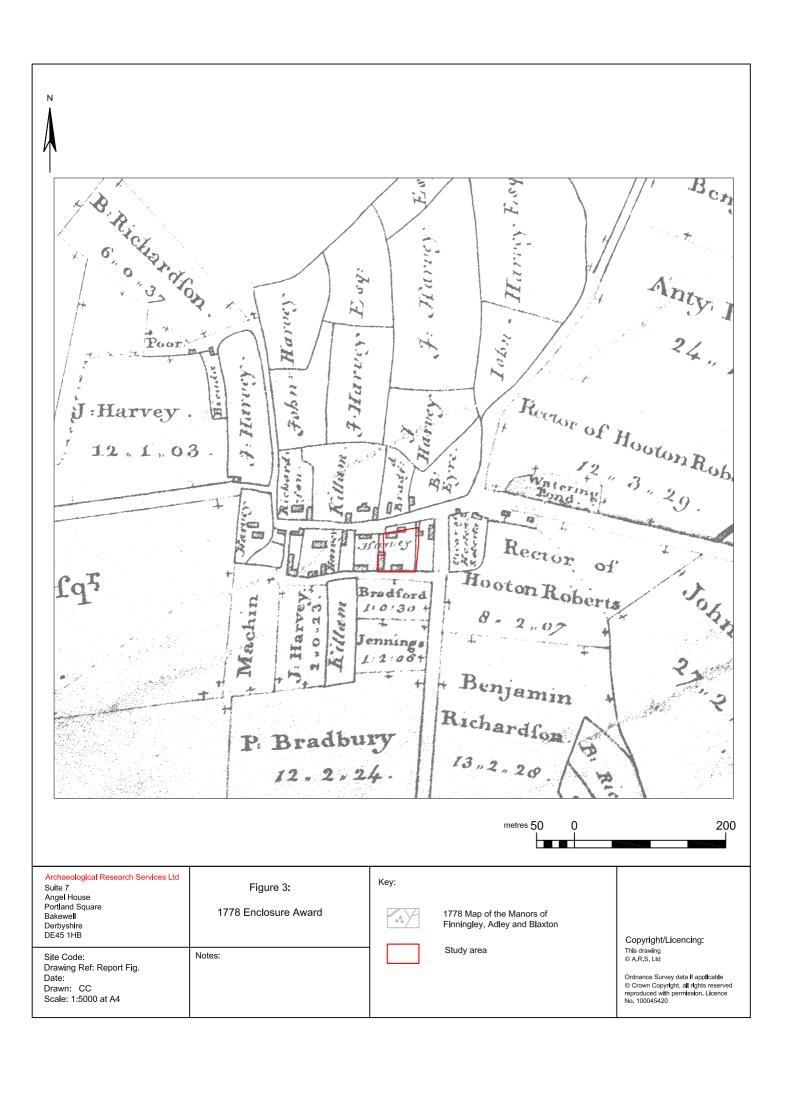
# **Bibliography**

Cumberpatch, C.G. 2004b *Medieval and post-medieval pottery production in the Rotherham area* <a href="http://ads.ahds.ac.uk/catalogue/specColl/ceramics\_eh\_2003/">http://ads.ahds.ac.uk/catalogue/specColl/ceramics\_eh\_2003/</a>

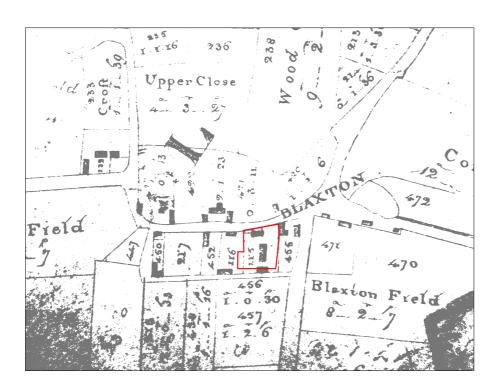
Hayfield, C. and Buckland, P. 1989. Late medieval pottery wasters from Firsby, South Yorkshire. Transactions of the Hunter Archaeological Society 15; 8 – 24.

# **APPENDIX FOUR**

Historic map regression of the development site



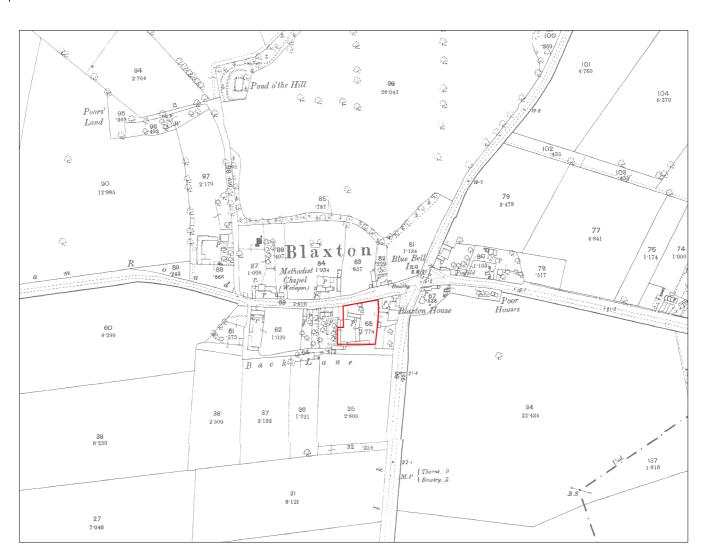






Archaeological Research Services Ltd Suite 7 Angel House	Figure 4:	Key:		
Portland Square Bakewell Derbyshire DE45 1HB	Manors of Finningley DX/BAX/Map 11	**	1818 Map of the Manors of Finningley	
Site Code: Drawing Ref: Report Fig.	Notes:		Study area	Copyright/Licencing: This drawing © A.R.S. Ltd
Date: Drawn: CC Scale: 1:5000 at A4				Ordnance Survey data if applicable © Crown Copyright, all rights reserved reproduced with permission. Licence No. 100045420

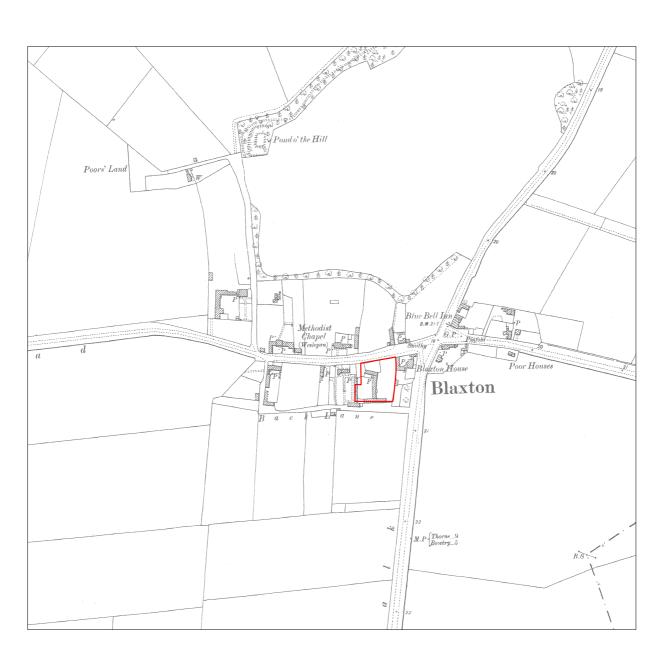






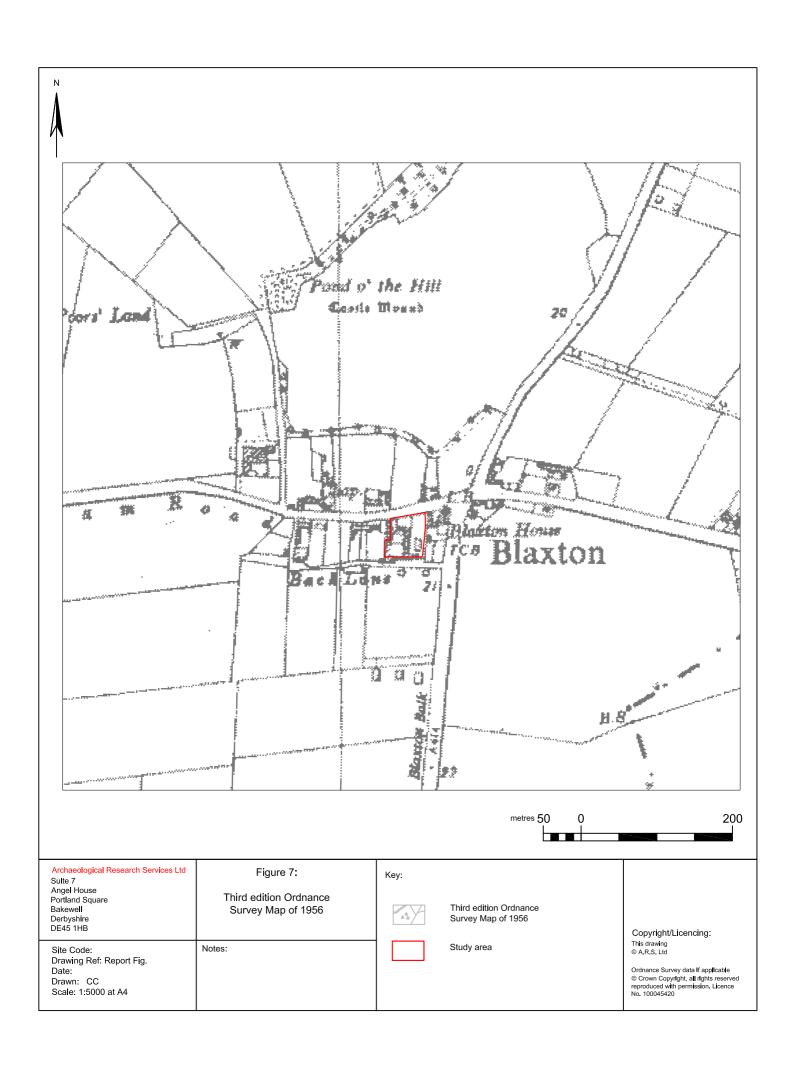
Archaeological Research Services Ltd Suite 7	Figure 5:	Key:		
Angel House Portland Square Bakewell Derbyshire DE45 1HB	First edition Ordnance Survey Map of 1854	**	First edition Ordnance Survey Map of 1854	Copyright/Licencing:
Site Code: Drawing Ref: Report Fig.	Notes:		Study area	This drawing © A.R.S. Ltd
Date: Drawn: CC Scale: 1:5000 at A4				Ordnance Survey data If applicable © Crown Copyright, all rights reserved reproduced with permission. Licence No. 100045420

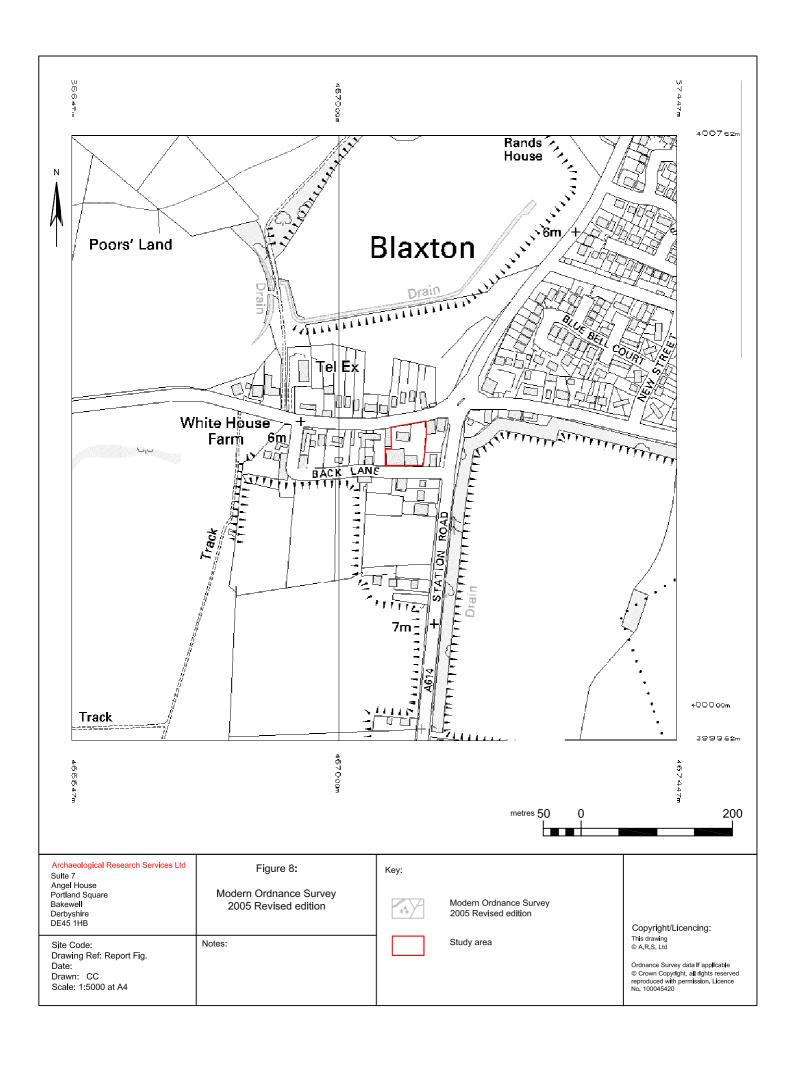






Archaeological Research Services Ltd Sulte 7 Angel House Portland Square Bakewell Derbyshire DE45 1HB	Figure 6: Second edition Ordnance Survey Map of 1902	/	ond edition Ordnance ey Map of 1902	Copyright/Licencing:
Site Code: Drawing Ref: Report Fig. Date: Drawn: CC Scale: 1:5000 at A4	Notes:	Stud	ly area	This drawing © A.R.S. Ltd Ordnance Survey data If applicable © Crown Copyright, all rights reserved reproduced with permission. Licence No. 100045420





# **APPENDIX FIVE**

Specialist Pollen Report by Dr. Phillip Allen

## Pollen from Manor Farm Blaxton

## Pollen analysis

The examination of the pollen from Manor Farm Blaxton describes sediment with relatively abundant pollen and non-pollen palynomorphs preservation. The results of the pollen assessment are presented in Table 1.

One level from Manor Farm Blaxton was counted. Although the slide contained a large amount of degraded organic material this did not impede identification of pollen and non-pollen palynomorphs. The range of arboreal pollen identified was relatively limited and consisted of *Alnus glutinosa*, *Quercus*, *Betula* and *Tilia*. The most frequently recorded arboreal type was *Alnus glutinosa*. *Corylus avellana*-type along with *Calluna vulgaris* and Ericaceae represented the shrub communities. A suite of pollen types associated with human activity and disturbed ground was recorded and included *Plantago lanceolata* along with *Rumex acetosa/acetosella*, *Chenopodiaceae*, *Artemisia* and *Hordeum sativum*, *Avena*-type. The number of other herbaceous types was relatively limited and included Poaceae, Apiaceae, *Anthemis*-type, *Cirsium*-type and *Taraxacum officinale*. Poaceae was the most frequently recorded pollen type throughout the assessment. Indicators of wet/damp ground conditions were represented by Cyperaceae, *Myriophyllum verticillium*, and *Typha latifolia*. The non-pollen palynomorphs were represented by *Polypodium*, *pteridium*, *Sphagnum* and the presence of Types 114, 88.

Blaxton	08T3
Arboreal	I
Alnus	14
Betula	10
Quercus	2
Tilia	3
Shrubs dwarf shrubs	.3
Corvius aveilana-type	28
Calluna vulgaris	15
Ericaceae	4
Disturbed ground human activity	0
Avena-type	4
l lordeum sativum	5
Plantago ianceolata	5
Chenopodiaceae	12
Linum-type	8
Rumex acetosa acetosella	2
Artemisa	4
Grass and herbs	
Poaceae	34
Anthemis-type	6
Apiaceae	5
Cirsium-type	2
Centaureae-type	5
Caryophyllaceae	4
Wet damp ground and aquatics	_
M verticillium	7
Cyperaceae	18
Typha latifolia	3
Decay resistant	
Lactuceae	9
Taraxacum officinale Spores and NPP	27
Polypodium	1
Sphagnum	
Pleridium	
T114	4
T88	3
Spike charcoal and preservation	
Lycopodium	67
C G 50	3
C L 50	5
UN organics	48
นทรั	3
WP	37
C1	4
C2	4
C3	7
C4	5
D5	16
D6	26
D7	18
BR 8	19
BR 9	7
CR 10	83
CR 11	2
Unident fied	8
Total Pollen	236

Table 1 Total pollen and NPP count data for Manor Farm Blaxton.

#### Interpretation of the pollen

The combined pollen data has not been placed into a zoned pollen diagram because the assessment level counts (the area of a 22x22mm cover slip) are too low for statistical significance and if plotted into a pollen diagram the graphed curves would be misleading.

The range and frequency of identified and recorded arboreal types was relatively limited and consisted of Alnus glutinosa (alder) Tilia (lime), Quercus (oak) and Betula (birch). Alder was the most frequently observed arboreal type followed by birch. The three grains of lime were degraded and may represent reworking of older sediment and may not be related to the woodland composition of the site. Alder most likely represents small areas of wetter mixed woodland or woodland stands that occur around the Manor Farm Blaxton site. The dominant presence of alder throughout the assessment suggests wet or damp ground environments, as alder is native to stream-sides, marshy ground, wet thickets, hedges, wet oak woods and river banks. The presence of birch may represent drier areas within or close to the site as the birch populations would be more likely to inhabit the dryer and quicker draining locations of the surround area (Mitchell 1990). The frequency of identified arboreal pollen for the Manor Farm Blaxton site is comparatively limited and this may reflect an area where the presence of trees was less dense, possibly due to well-established agricultural activity. Alternatively the sample site may have been frequently inundated with water which proved to be too damp for trees to successfully establish a more extensive presence.

The record of the shrub and woody climber types was limited to *Corylus avellana*-type (hazel), *Calluna vulgaris* (heather) and Ericaceae (heath family). Hazel is a versatile plant that can inhabit numerous environments and indicate a range of possible landscapes. The hazel from Manor Farm Blaxton may represent the understory component of open woodland stands around the site. However, the presence of hazel from material with relatively limited representations of arboreal types most likely indicates open or cleared environments within and around the Manor Farm Blaxton site. Farming activity such as arable and grazing agriculture may be a likely cause of the open areas and hazel is a frequent component of managed hedge communities, although natural openings cannot be entirely dismissed for promoting the hazel. The presence of hazel, heather and heaths could also represent scrub communities on stream terraces and overbank deposits around manor Farm Blaxton, as these plants can thrive on sandy substrates. The frequent presence of the heather and heaths further suggests a mixed landscape containing relatively well drained/dry and damp/wet ground conditions.

The herbaceous pollen was the most widely represented types recorded during the assessment. Poaceae (grasses) were the dominant herb in frequency and recorded the highest counts. Other herbaceous pollen included Caryophyllaceae (pink or carnation family), *Anthemis*-type (chamomile family), Apiaceae (carrot family) and *Plantago lanceolata* (ribwort plantain). The Apiaceae types could have been available as a gathered food source as cumin, parsley, carrot, dill and fennel are all members of this family. However, the Apiaceae family is extensive (3000+ species) and includes many non-edible plant types; therefore it is not certain that the identified Apiaceae grains were associated with human activity. The environment indicated by the herbs is principally open and is dominated by grassland. However there is sufficient evidence to suggest damp to wet marshy conditions with limited evidence for some standing water.

The assortment of aquatic types recorded indicate that a range of wet environmental settings were present around the Manor Farm site. Cyperaceae (sedges) indicate damp open and/or wet marshy ground. Whilst the presence of *Myriophyllum verticillium* (whorled water milfoil) and *Typha latifolia* (reedmace – more commonly known as bulrush) indicates slow moving swampy ground, streams, and ditches or still, open pooled bodies of water. However, the whorled water milfoil and reedmace were degraded and may represent reworking of older sediment and may not be related to the vegetation composition of the site

Pollen types associated with human activity were relatively abundant, varied and quite frequent. The pollen types such as *Plantago lanceolata* (ribwort plantain), *Rumex acetosa/acetosella* (sheep and common sorrel) and Chenopodiaceae (goosefoot family) often indicate ground disturbance as a result of farming activities. *Plantago lanceolata* (ribwort plantain) can indicate pastoral activity, as this plant is trample tolerant. Further evidence of pastoral activity is indicated by the presence of *Rumex acetosa/acetosella* (sheep and common sorrel) (Behre 1981). *Taraxacum officinale* (dandelion) was frequently recorded and dadelions are common components of pasture which could be related to human activity. However, *Taraxacum officinale* is decay resistant and the high quantities recorded during the assessment may be reflecting the longevity of preferential preservation rather than human activity.

Arable activity was represented by the presence of *Avena*-type (oats) and *Hordeum sativum* (barley). The presence of oats and barley suggests that the farming preference close to Manor Farm was most likely a mixture of animal grazing and cereal crop production. However, the range of cereal pollen types recorded during the assessment was not extensive and *Tritium*-type (wheat) and *Secale cereale* (rye) were absent which may reflect unfavourable ground conditions on and around the site.

A number of *Linum*-type (flax), possibly *Linum cartharticum* (fairy flax), grains were identified, which may be additional evidence for human activity on or close to the site. Fairy flax was often used for dying fabrics, although the possibility of the fairy flax being a natural component to the vegetation composition cannot be ruled out. The relatively frequent presence of the human indicator pollen types may suggest that the human impact was extensive across the area, possibly indicating a fairly intensive use of the landscape.

The non-pollen palynomorphs recorded throughout the assessment were comparatively well represented and support the interpretation produced from the pollen identifications. *Sphagnum* (peat moss) is a common component of damp environments and was recorded in low frequency. *Polypodium* (ferns) often forms part of the understory component of woodland canopy, although ferns along with *pteridium* (bracken) are frequently found throughout open areas. Non-pollen palynomorphs Type 114 a Scalariform perforation plate, occurring in vessesls of *Alnus glutinosa* and *Corylus avellana*-type means that it is likely that some wetting phases occurred as Type 114 is produced by decomposing wood during fluvial transport prior to deposition in clayey sediments (van Geel 1998).

## Pollen Taphonomy

The range of pollen and non-pollen palynomorph taphonomy from the Manor Farm site was relatively diverse and suggests this is a complex site. The preservation condition of

the pollen is listed as one of the key features for determining potential for full analysis of palaeobotanical remains as part of the assessment stage of MAP2 projects (English Heritage 1991). Examples of the different preservation conditions are shown in Figure 1; however this figure does not display all of the categories.



Figure 1. Examples of different pollen preservation conditions from Manor Farm, Blaxton.

The preservation condition of the pollen varied throughout the site as shown in Table 2. The degree of preservation is an important indicator value (Jones 2007) that most likely reflects the differential deposition and post-deposition conditions across the site. The frequent wetting, drying and ground disturbance on and around the site could promote bacterial activity that reduces the preservation potential of the pollen. It is worth considering that when the preservation condition is poor some pollen types may be completely absent from the preserved record and this could produce a biased vegetation reconstruction.

Manor Farm Blaxton	08T3 %
WP	15.7
C1	1.7
C2	1.7
C3	3.0
C4	2.1
D5	6.8
D6	11.0
D7	7.6
BR 8	8.1
BR 9	3.0
CR 10	35.2
CR 11	0.8
Unidentified	3.4

Table 2 Preservation values of pollen from Manor Farm Blaxton (classification based on Delcourt & Delcourt 1980)

Partly crumpled (CR10) grains were the most frequently recorded (35.2%) which indicate that numerous pollen grains had suffered mechanical damage due to compaction of the pollen within the sediment, particularly resulting from the progressive extrusion of water (Delcourt and Delcourt 1980). Furthermore corrosion (category C) of the pollen was relatively frequently observed and indicates biochemical oxidation related to fungal/bacterial activity and/or chemical oxidation within aerial and sub-aerial environments. Well preserved (WP) pollen was relatively low (15.7%) and this denotes

that a small amount of grains had no observable deterioration and indicates limited preferential preservation potential. Although the percentage for corrosion and deterioration of pollen grains are by themselves relatively low, when combined they describe poor pollen preservation. A number of grains (7.6%), including lime and dandelions, exhibited significant deterioration and were present in outline only. These grains have been interpreted as reworked older material, as this level of degradation was not characteristic of the level. Although the condition of the pollen was not exceptionally good the actual abundance from the Manor Farm site is acceptable, therefore the overall preservation condition of pollen from Manor Farm describes a relatively abundant, moderately preserved pollen assemblage that exhibits a varied scale of deterioration.

The repeated wetting and drying of the site area can promote bacterial activity that reduces the preservation potential of the pollen. Much of the pollen examined during the assessment did display damage commonly associated with bacterial and mechanical deterioration. This damage could relate to the process of deposition which can result in mechanical damage.

#### **Conclusions**

The pollen evidence from the Manor Farm site indicates that open herbaceous grassland environments were dominant, although some mixed woodlands were present but not extensive. There is ample evidence from the arboreal and herbaceous pollen that indicate damp and/or wet ground and quite possibly waterlogged and/or pooled water had occurred. The pollen record appears to post-date the major periods of woodland clearances. The open landscape was farmed by cereal production and via grazing which appears to be quite well established throughout the site. The preservation condition of the pollen is moderate with many grains indicating post-deposition erosion. Due to the acceptable preservation condition of the pollen and its ability to enhance the knowledge on former landscapes around the site analysis of a single slide from the deposit is viable. This would allow the provisional interpretation outlined in this report to be tested and the conclusion afforded greater certainty.

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