Report on the archaeological watching brief during geotechnical trial pitting at Dishley Mill, Loughborough, Leicestershire SK 51726, 209321

Prepared on behalf of Environment Agency

February 2012

Author: Peter Webb

Project Code: DMI

Trent & Peak Archaeology ©
Unit 1, Holly Lane
Chilwell
Nottingham
NG9 4AB

0115 8967400 (Tel.)
0115 925 9464 (Fax.)

Trent & Peak Archaeology is a trading name of York Archaeological Trust
Registered Charity No 905060

Registered Office:
47 Aldwark, York YO1 7BX

A Company Limited by Guarantee
Without Share Capital Registered
in England No. 1430801

SUMMARY

- Trent & Peak Archaeology was commissioned by the Environment Ageny to carry out a watching brief on the excavation of three geotechnical trial pits. The watching brief was conducted in order to ascertain the nature, depth, extent and state of preservation of any archaeological remains impacted by the ground works.

- The work was carried out 9th February 2012 with archaeological monitoring by staff from Trent & Peak Archaeology and environmental examination by staff from Opus International in accordance with the Written Scheme of Investigation.

- The trial pits were to be situated within the area known as Dishley Mill, Dishley, Loughborough, Leicestershire, centred at SK 51726, 20932 at a height of 35mOD.

- The site is situated on deposits of Edwalton Member Mudstone with overlying superficial deposits of alluviual clay, silt and sand and gravel (British Geological Survey).

- The excavation area lies near the deserted medieval village of Dishley which is mentioned in the 1086 Domesday book, and near the remains of a 12th-13th century church, and within the extents of a medieval and post medieval mill pond.

- Three trial pits (Areas 01-03) were excavated in order to assess stability of the existing flood bank, the ground conditions and the nature of the underlying geology prior to alterations in the flood defences. Area 01 measured 3m x 0.6m and was excavated to a depth of 2.5m, Area 02 3.8m x 0.6m to a depth of 2.9m and Area 03 3m x 0.6m to a depth of 3.6m.

- No archaeological features were observed within the trial pits, although all three revealed layers of alluvial deposits which may relate to the water mill identified on the historic mapping.

- Recording and observation of sections revealed a consistent stratigraphic sequence of natural sand and gravel overlain by deposits of clay and modern topsoil.

- The watching brief identified the presence of organic rich sediments pertaining to the former mill pond associated with the medieval or post medieval Dishley Mill. These deposits were sampled and preliminary assessment has established their significant palaeoenvironmental potential with the presence of a variety of seed types, and in particular hazel nuts. They suggest a wetland environment surrounded by shrub and woodland.

Report on the archaeological watching brief during geotechnical trial pitting at Dishley Mill, Loughborough, Leicestershire SK 51726, 20932

CONTENTS

Summary..... 1

Contents..... 2

List of Figures..... 2

List of Plates..... 2

1. Introduction..... 3

2. Project background..... 3

3. Archaeological and historical background..... 3

4. Objectives..... 3

5. Methodology..... 3

6. Results 3
   6.1 Area 01 3
   6.2 Area 02..... 4
   6.3 Area 03..... 4

7. Discussion..... 4

8. Conclusion..... 5

Bibliography..... 6

Appendix 1 Index of Archive and Arrangements for Deposition 7
Appendix 2 Interim Environmental Assessment 8

LIST OF FIGURES

Figure 1: Site location plan
Figure 2: Representative west facing section of Area 01
Figure 3: Representative north east facing section of Area 02
Figure 4: Representative west facing section of Area 03

LIST OF PLATES

Plate 1: West facing section Area 01
Plate 2: North east facing section Area 02
Plate 3: West facing section Area 03

1. INTRODUCTION

1.1. Trent & Peak Archaeology was commissioned by the Environment Agency to carry out a watching brief on the excavation of three geotechnical trial pits. The watching brief was conducted in order to ascertain the nature, depth, extent and state of preservation of any archaeological remains impacted by the ground works.

1.2. The work was carried out 9th February 2012 with archaeological monitoring by staff from Trent & Peak Archaeology and environmental examination by staff from Opus International in accordance with the Written Scheme of Investigation.

2. PROJECT BACKGROUND

2.1. The trial pits were to be situated within the area known as Dishley Mill, Dishley, Loughborough, Leicestershire, centred at SK 51726, 20932 at a height of 35mOD.

2.2. The site is situated on deposits of Edwalton Member Mudstone with overlying superficial deposits of alluviual clay, silt and sand and gravel (British Geological Survey).

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1. The excavation area lies near the deserted medieval village of Dishley (http:// archaeologydataservice.ac.uk/archsearch/record.jsf?titleId=1041785) which is mentioned in the Domesday book of 1086 (Morgan 1979) and has the ruins of a 12th-13th century church (http://www.charnwood.gov.uk/listed_buildings/ruins_of_all_saints_church_derby_road_lough borough) in the vicinity. The site also lies within the confines of a mill pond identified on the 1886 Ordnance Survey map and is part of a medieval and post medieval watermill complex (http://archaeologydataservice.ac.uk/archsearch/record.jsf?titleId=1268951)

4. OBJECTIVES

4.1. The objectives of the archaeological watching brief within the proposed development area are as outlined in the 'Written Scheme of Investigation'.

> 'To identify the presence of any archaeological remains to be affected by any intrusive aspects of the development and to achieve an appropriate level of *preservation by record*. Where practical (within the constraints of the watching brief and development), this will include an assessment of the overall extent, date and state of preservation of archaeological remains. Any features of geoarchaeological significance will also be recorded and where there is the potential for palaeoenvironmental data, an appropriate level of sampling will be undertaken.'

5. METHODOLOGY

5.1. Three trial pits (Areas 01-03) were excavated in order to assess stability of the existing flood bank, the ground conditions and the nature of the underlying geology prior to alterations in the flood defences. Area 01 measured 3m x 0.6m and was excavated to a depth of 2.5m, Area 02 3.8m x 0.6m to a depth of 2.9m and Area 03 3m x 0.6m to a depth of 3.6m. All three areas were excavated by machine using a 0.6m toothless trenching bucket under archaeological supervision.

5.2. Once excavated, one section of each trial pit (unless there was a change in the stratigraphy) was recorded by photograph and hand drawing. Due to the depths and unstable nature of the underlying strata of the trial pits, cleaning of the sections was not possible and recording was only carried out from the surface.

6. RESULTS

6.1. Area 01, 3m x 0.6m (Figure 2). Area 01 was located to the north of the Dishley Mill area, south of Derby Road. It was rectangular in shape and measured 3m north – south x

0.6m east – west and was excavated to a depth of 2.5m below the ground surface. No artefacts were recovered from within Area 01. The stratigraphic sequence consisted of:

Context	Thickness	Descriptions
0001	150mm	Mid-dark brown clay silt loam (topsoil)
0002	350mm	Mid greyish brown clay with 10% sub rounded stone 20-100mm (subsoil)
0003	300mm	Mid orangey brown clay
0004	400mm	Mid orangey brown sandy clay with 40% sub rounded stone 30-100mm
0005	1000mm	Black sandy clay with 30% sub rounded stone 30-200mm and heavy organic content
0006	>300mm	Mid reddish brown sandy clay with 20% blueish grey mottles

6.2. Area 02, 3.8m x 0.6m (Figure 3). Area 02 was located towards the southern limit of Dishley Mill area, to the north of Braddon Road. It was rectangular in plan and measured 3.8m north-west – south-east x 0.6m north-east – south-west and was excavated to a depth of 2.9m below the ground surface. No archaeological features were identified within Area 02. A single post medieval tile (AAA) was recovered from within subsoil 0007. The stratigraphic sequence consisted of:

Context	Thickness	Descriptions
0001	340mm	Mid-dark brown clay silt loam (topsoil)
0007	260mm	Orangey brown sandy clay with 20% sub rounded stone 10-30mm and 5% angular stone 100-450mm
0008	400mm	Reddish brown clay with 5% sand patches
0009	300mm	Mid brownish grey clay
0010	350mm	Reddish brown clay
0011	400mm	Reddish brown clay with 50% sub angular stone 1-5mm
0012	650mm	Sub rounded stone 30-100mm within 40% yellowish brown sand
0013	50mm	Mid grey silt with limited organic content
0014	>150mm	Light-mid brown silt

6.3. Area 03, 3m x 0.6m (Figure 4). Area 03 was located towards the southern limit of the Dishley Mill area, to the south of Braddon Road. It was rectangular in shape and measured 3m north – south x 0.6m east - west and was excavated to a depth of 3.6m below the ground surface. No archaeological features were identified within Area 03. Within the context 0020 a single brick (AAB) of post medieval date was recovered. The stratigraphic sequence consisted of:

Context	Thickness	Descriptions
0015	200mm	Dark brown silt loam with 20% sub rounded stone 5-20mm
0016	300mm	Mid brown silt clay
0017	600mm	Dark brown silt clay
0018	400mm	Mid brown silt clay with 10% sub rounded stone 5-20mm
0019	100mm	Mid brownish grey clay with organic content
0020	1200mm	Dark greyish black clay with heavy organic content
0021	600mm	Sub rounded stone 30-100mm within 20% dark brown sand
0022	>200mm	Reddish brown clay

7. DISCUSSION

7.1. The stratigraphic sequence of Area 01 shows the natural mudstone overlain by an organic rich alluvial deposit (0005), alluvial clays and topsoil. These alluvial deposits are likely to represent the process of silting up of the mill pond identified on the 1921 OS mapping to 36.5m OD. However, no dating evidence was recovered from these contexts.

7.2. Areas 02 showed a similar stratigraphic sequence to Area 01 with the natural mudstone overlain by an alluvial deposit with organic remains (0013) and further alluvial clays. This was overlain by a series of clay layers and topsoil. This sequence similarly represents the silting up of the mill pond to a similar depth of 36.2m OD, with the addition of the construction layers (0007-0010) of the existing flood bank above.

7.3. Area 03 again shows a similar stratigraphic sequence to Areas 01 and 02 with the natural mudstone overlain by organic rich alluvial layers (0019-0020), alluvial clay and additional clay layers relating to the construction of the flood bank, and topsoil. The organic layers within this area lie at a higher level than the previous areas, at 38.1m OD.

8. CONCLUSION

8.1. The watching brief demonstrated the presence of layers with significant potential to yield palaeoenvironmental evidence relating to the former mill pond associated with the medieval or post medieval Dishley Mill.

8.2. These deposits were sampled and preliminary assessment has established the presence of a variety of seed types, and in particular hazel nuts. They suggest a wetland environment surrounded by shrub and woodland.

8.3. The deposits have a demonstrated potential to produce both significant data as to the historic environment and material for possible radiocarbon dating of the sediments.

BIBLIOGRAPHY

Morgan, P. 1979 *Domesday Book for Leicestershire*, Phillimore & Co. Ltd

Trent & Peak Archaeology 2012 *Dishley Mill, Loughborough, Leicestershire: Archaeological Watching Brief (Proposed Written Scheme of Investigation)*, TPA

Website references

http:// archaeologydataservice.ac.uk/archsearch/record.jsf?titleId=1041785

http://www.charnwood.gov.uk/listed_buildings/ruins_of_all_saints_church_derby_road_loughborough

http://archaeologydataservice.ac.uk/archsearch/record.jsf?titleId=1268951

Cartographic references

BGS, British Geological Survey, England and Wales,
http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html

Ordnance Survey. (1886). 1:10560. County Series 1846-1969

Appendix 1 Index of Archive and Arrangements for Deposition

Field Records	***Description***	***Number***
Watching brief record sheets	Record of visit and work carried out	1
Drawing record sheets	List of drawings made on site	1
Photographic record sheets	List of photographs taken on site	1
Context records sheets	Record of contexts recorded on site	22
Site drawings on permatrace sheets	Section drawings @1:20 on A3 permatrace	3
Photographs:-		
Digital	All views	23
B&W (with negatives)	Recorded sections	20
Finds	Brick Tile	1 1
Documents	*Description*	*Number*
Written scheme of investigation	Statement of the aims, objectives and methodology for the project.	1
Health & Safety	Safe working statement & risk assessment	1
Report to client	Report of findings of the watching brief.	1

Archive Deposition.

The archive is currently held in the offices of Trent & Peak Archaeology, Unit 1, Holly Lane, Chilwell, Nottingham, NG9 4AB. It will be deposited at Leicester Museum and Art Gallery, Leicestershire, accession number X.A39.2012, TPA project code DMI. The archive will be deposited by the end of December 2012.

Appendix 2 Interim Environmental Assessment

DMI: Dishley Mill, Loughborough, Leicestershire

Environmental Archaeology Interim Assessment (A. Wilson)

Introduction:
This report provides a brief interim assessment of the palaeo-environmental samples retrieved during an archaeological watching brief carried out by Trent & Peak Archaeology on February 9th, 2012, on behalf of the Environment Agency.

As part of the environmental sampling strategy, 4 samples were taken from a possible millpond; 30 litre samples were removed from several contexts within this deposit. The samples are listed in table form below, with a brief description of the deposit from which the samples were taken and any environmental material found.

Method:
The soil samples were processed in the following manner;

Sample weight and volume was measured prior to processing and a sub-sample was removed in case any further analysis should be required. The non-waterlogged samples were then processed using a 'Siraf' flotation tank (Williams 1973), using a sieve with a 250µ mesh and an internal 1mm mesh for the residue.

The residues were dried and the flots kept waterlogged and retained in waterproof containers. A total of 30 litres of soil was processed in this way.

The weight and volume of the residue was recorded, before it was sorted by eye for any environmental and archaeological finds. These were picked out, noted on the assessment sheet and bagged. A magnet was run through the residue in order to recover any magnetised material such as hammerscale. The residue was then discarded.

The flot of each sample was studied using 10x magnification and the presence of environmental finds noted and their abundance and species recorded on the assessment sheet. The flots were then bagged and along with the finds from the residue constitute the material archive of the samples.

Table 1: environmental finds from DMI - Environmental sample no: 01
Context: 0005
Sediment description: Black sandy clay with heavy organic content.
Sample volume before processing: 7 litres.
25% of flot examined.

Material	Quantity
Charcoal	<1g of unidentified comminuted fragments
Plant remains: General decayed plant matter. Corylus Avellana (Hazel) Downy Birch (Betula Pubescens) *Sp.* Rumex (Dock)	An abundance of 51-150 seeds (predominantly Hazel)
Insect remains: indet. fragments	An abundance of 0-11 fragments

Table 2: environmental finds from DMI - Environmental sample no: 02
Context: 0013
Sediment description: Mid grey silt
Sample volume before processing: 6 litres, 1litre sub-sample taken for bulk sieving.
15% of flot examined

Material	Quantity
Plant remains: Decayed plant matter	0

Table 3: environmental finds from DMI - Environmental sample no: 03
Context: 0019
Sediment description: Mid brownish grey clay with organic content
Sample volume before processing: 7 litres, 2 litre sub-sample taken for bulk sieving
100% of flot examined

Material	Quantity
Plant remains: *Sp.* Rancunculus (Buttercup) Downy Birch (Betula Pubescens) *Sp.* Rumex (Dock) *Sp.* Polygonum (Knotweed) Zannichellia palustris (Horned pondweed) *Sp.* Chenopodia (Fat Hen) General decayed plant matter.	An abundance of 11-50 seeds
Insect remains: indet. fragments Daphnia Ephippia (resting stage of water flea) Caddis fly larva cases	An abundance 51-150 fragments

Table 4: environmental finds from DMI - Environmental sample number: 04
Context: 0020
Sediment description: Dark greyish black clay with heavy organic content
Sample volume before processing: 8 litres
Sample weight before processing: 1 kilogram

Material	Quantity
Charcoal	<1g of unidentified comminuted fragments
Plant remains: *Sp.* Rumex (Dock) *Sp.* Polygonum (Knotweed) *Sp.* Chenopodia (Fat Hen) *Sp.* Alnus (Alder) *Sp.* Rancunculus (Buttercup) General decayed plant matter	An abundance of 11-50 seeds

Results:

Residues: The samples washed down to produce residues of varying proportions of sub-angular gravel and mineralised sediment concretions, mostly between 1mm and 1cm in size. The residues yielded nothing in the way of archaeological finds or hammerscale.

Flots: As the samples were organic rich the flots were kept waterlogged.

Several of the flots contained a small quantity of unidentified, comminuted fragments of charcoal measuring less than 2mm.
The bulk of the flots consisted of degraded plant matter and wood fragments. The most ubiquitous identifiable botanical finds were Hazel and Dock, which can be found in a variety of habitats including wetland.

Woodland shrubs and trees are represented by Hazel, Alder and Elder.

Conclusion:
In summary, the surviving waterlogged vegetative and insect remains contain evidence regarding the local vegetation and land utilisation and so contribute to an understanding of the landscape of the time. Given the reasonable quantity and quality of the remains further examination would be recommended.

The plant remains, in particular the complete Hazel nuts provide an opportunity for scientific dating of the deposit.

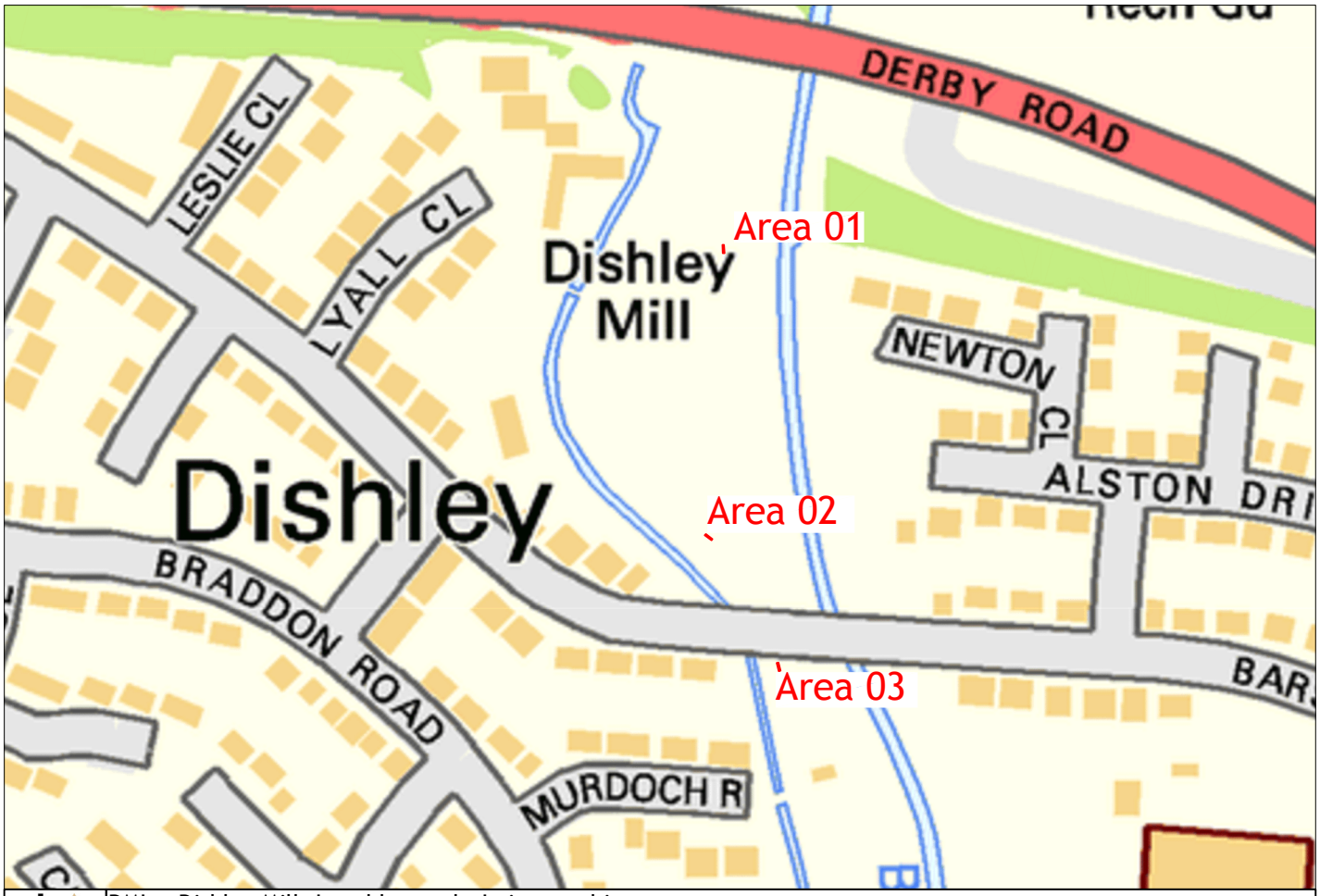
Bibliography:

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

Sterry, P. 2006 *Complete British Wild Flower*, Harper Collins Publishers Ltd.

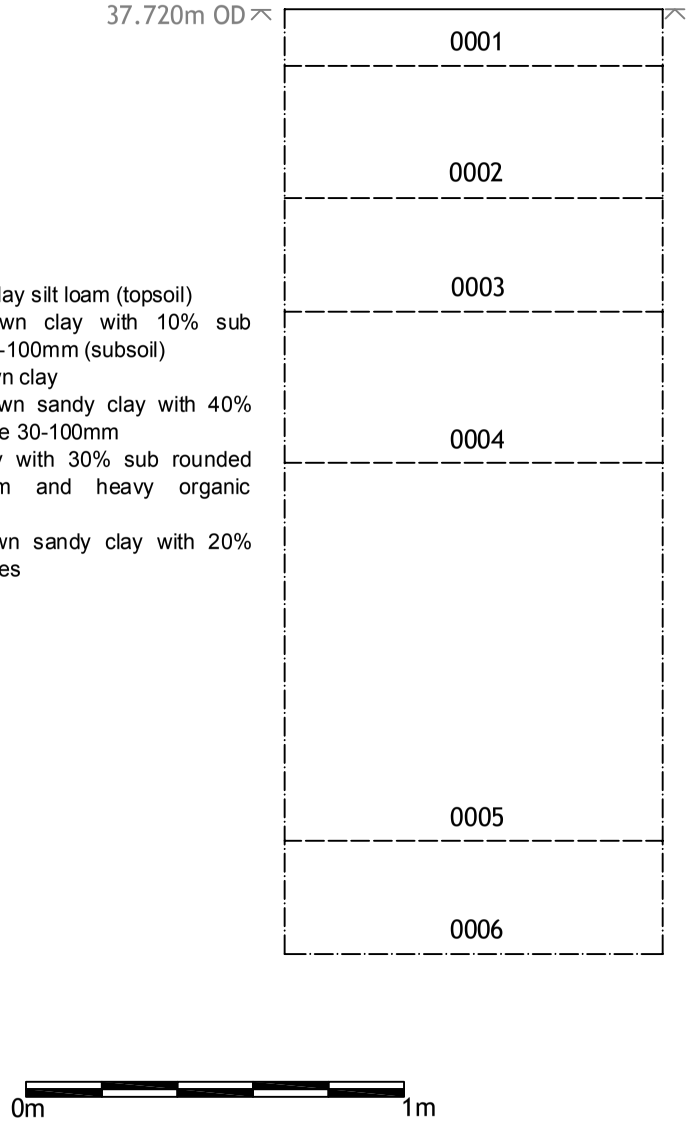
Sterry, P. 2007 *Complete British Trees*, Harper Collins Publishers Ltd.

Cappers, R, Bekker, R, Jans, J. 2006 *Digitale Zadenatlas Van Nederland*, Barkhuis Publishing & Groningen University Library.



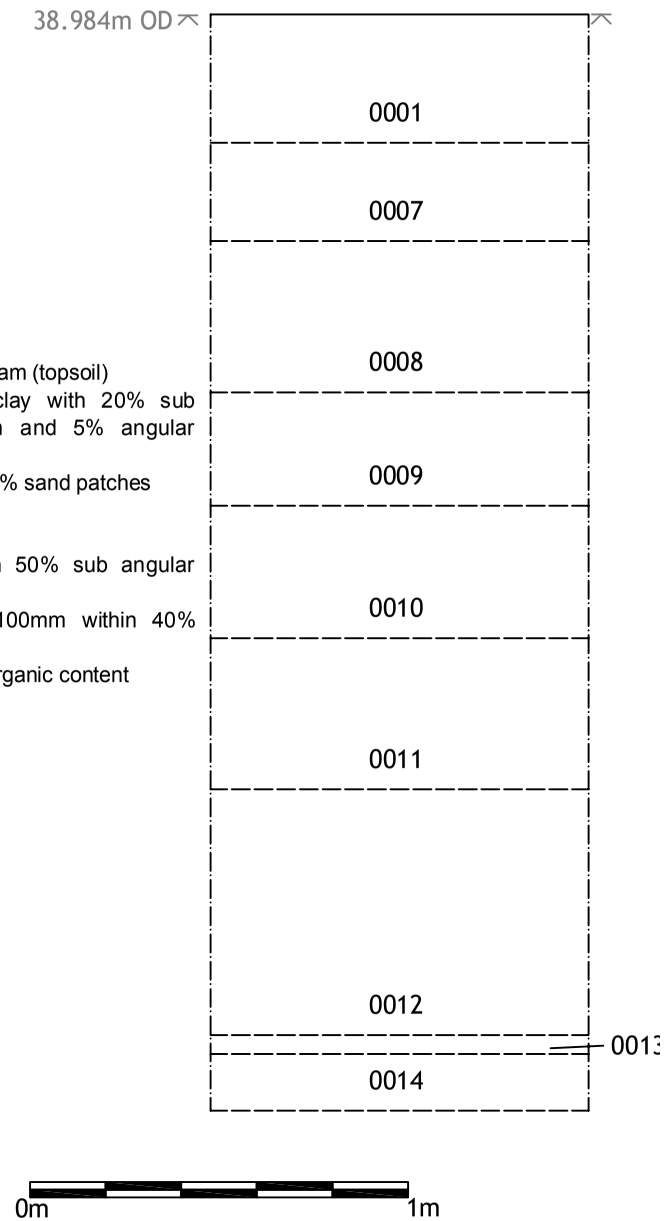
Trent & Peak ARCHAEOLOGY

DMI Dishley Mill, Loughborough, Leicestershire
Figure 1 Site location plan
Scale at A4 1:50000 / 1:2500



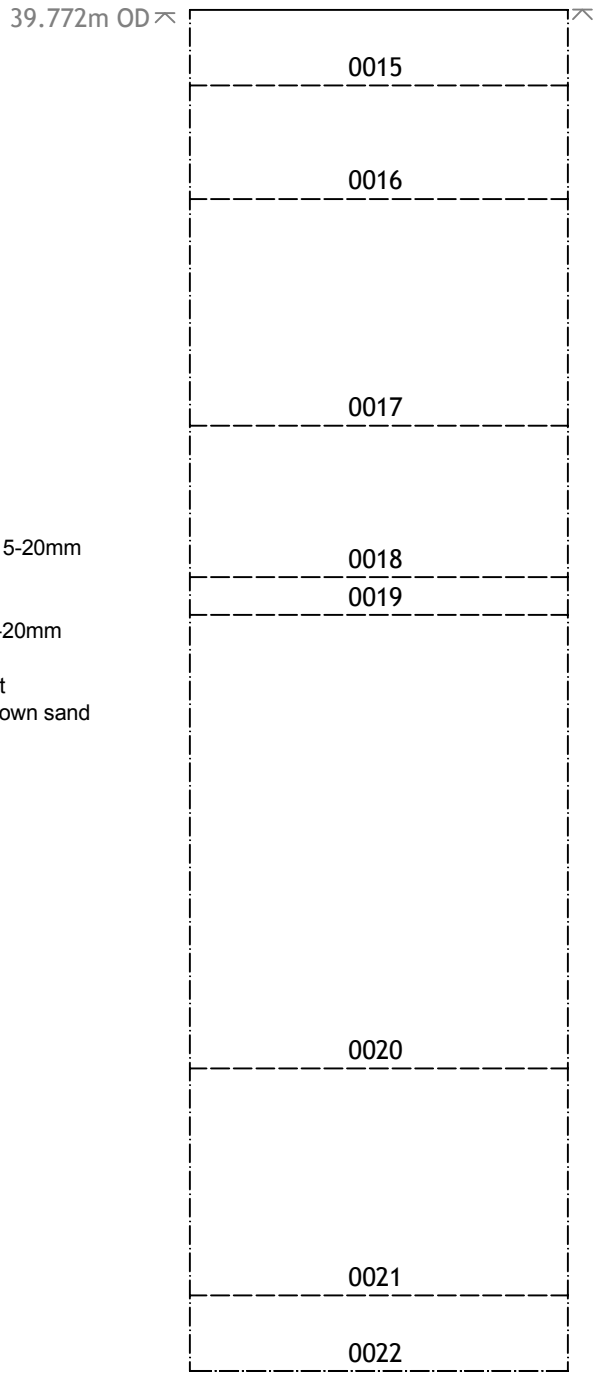
0001 Mid-dark brown clay silt loam (topsoil)
0002 Mid greyish brown clay with 10% sub rounded stone 20-100mm (subsoil)
0003 Mid orangey brown clay
0004 Mid orangey brown sandy clay with 40% sub rounded stone 30-100mm
0005 Black sandy clay with 30% sub rounded stone 30-200mm and heavy organic content
0006 Mid reddish brown sandy clay with 20% blueish grey mottles

DMI Dishley Mill, Loughborough, Leicestershire
Figure 2 Representative west facing section Area 01
Scale at A4 1:20



0001 Mid-dark brown clay silt loam (topsoil)
0007 Orangey brown sandy clay with 20% sub rounded stone 10-30mm and 5% angular stone 100-450mm
0008 Reddish brown clay with 5% sand patches
0009 Mid brownish grey clay
0010 Reddish brown clay
0011 Reddish brown clay with 50% sub angular stone 1-5mm
0012 Sub rounded stone 30-100mm within 40% yellowish brown sand
0013 Mid grey silt with limited organic content
0014 Light-mid brown silt

DMI Dishley Mill, Loughborough, Leicestershire
Figure 3 Representative north east facing section Area 02
Scale at A4 1:20



0015	Dark brown silt loam with 20% sub rounded stone 5-20mm
0016	Mid brown silt clay
0017	Dark brown silt clay
0018	Mid brown silt clay with 10% sub rounded stone 5-20mm
0019	Mid brownish grey clay with organic content
0020	Dark greyish black clay with heavy organic content
0021	Sub rounded stone 30-100mm within 20% dark brown sand
0022	Reddish brown clay

Trent & Peak Archaeology

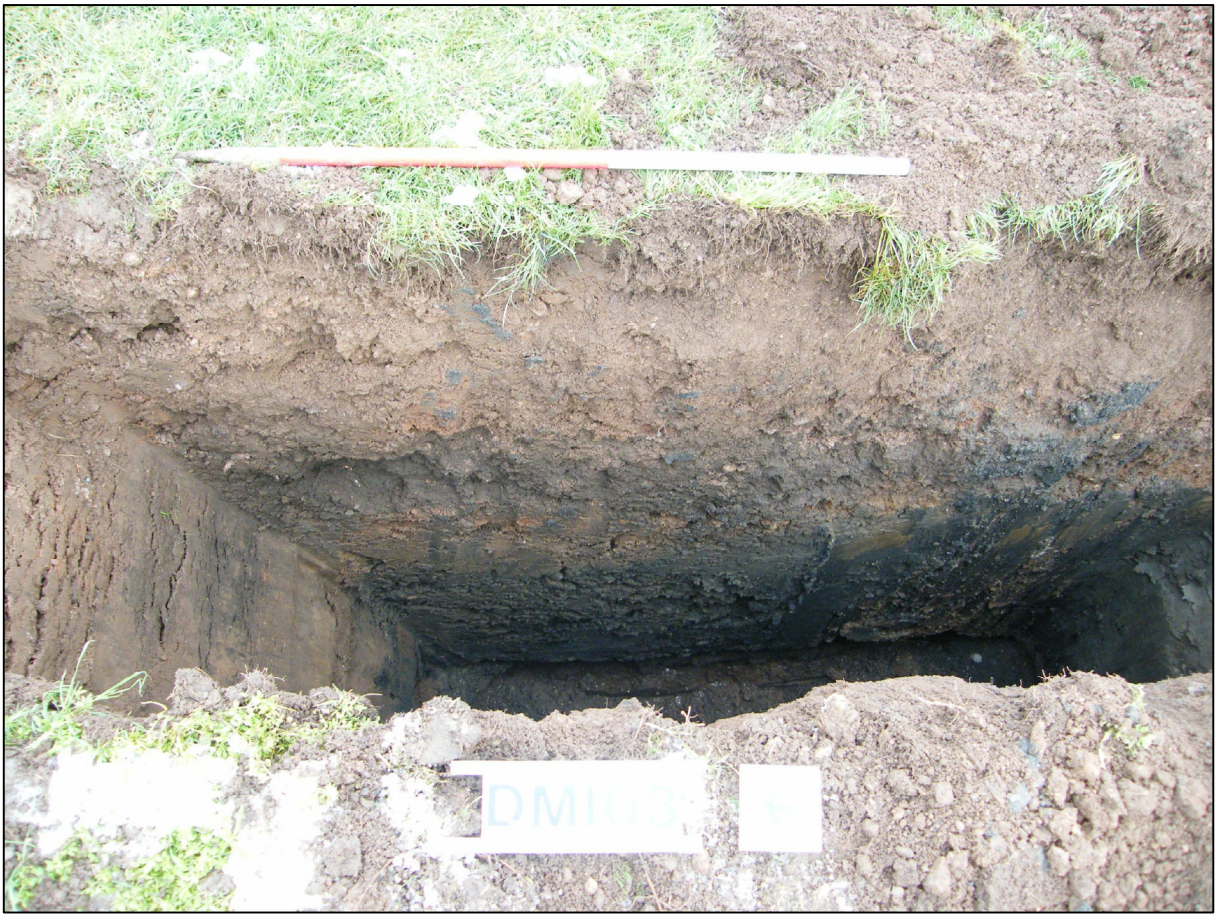
DMI Dishley Mill, Loughborough, Leicestershire
Figure 4 Representative west facing section Area 03
Scale at A4 1:20

0m 1m

DMI Dishley Mill, Loughborough, Leicestershire
Plate 1 West facing section Area 01

Trent & Peak ARCHAEOLOGY

DMI Dishley Mill, Loughborough, Leicestershire
Plate 2 North east facing section Area 02



DMI Dishley Mill, Loughborough, Leicestershire
Plate 3 West facing section Area 03