

**An Archaeological Excavation at Dean
Street/Upper Dean Street, Birmingham**
NGR: SP 47267 286352 centre
Dr. Roger Kipling



**An Archaeological Excavation at Dean Street/
Upper Dean Street, Birmingham**

(NGR SP 47267 286352)

Dr. Roger Kipling

For: CgMs Consulting

Checked by

Signed:



Date: 01-03-2010

Name: Patrick Clay

University of Leicester

Archaeological Services

University Rd., Leicester, LE1 7RH

Tel: (0116) 2522848 Fax: (0116) 2522614

ULAS Report Number 2010-034

Accession Number: EBM 472

©2010

REPORT REVISION SHEET

Doc. Name	Revision No.	Description	Date	Issued to
Draft Report	00	Original Draft	17-02-2010	ULAS
2010-034	01	Edited by VS	22-02-2010	ULAS
2010-034	02	Edited by PNC	01-03-2010	CgMS
2010-034	03	Corrections by RWK Edited by VS	07-04-2010	ULAS CgMs
2010-34	04	New map added VS	05-05-2010	CgMs

CONTENTS

Summary	1
1: Introduction.....	1
2. Site Description, Topography and Geology.....	2
4: Aims and Methods	5
5: Results.....	6
Trench 01	6
Trench 02	8
Brook Deposits.....	10
Possible Osier Pit	13
Modern Features	15
6. Assessment of Archaeobotanical Material (Pollen and Plant Macrofossils) - James Greig	16
Introduction	16
Samples	16
Laboratory work.....	16
Results.....	18
Acknowledgements	19
7. Wood Identifications - Anita Radini.....	22
Comments	22
8. The Post-Roman Pottery and Clay Pipe - Deborah Sawday	23
9: Discussion.....	24
Phase 1: The Dirty Brook.....	24
Phase 2: Post-Medieval Waterside Activity.....	24
Phase 3: Infilling of the Watercourse and Building Construction	25
The Environmental Evidence - Angela Monckton.....	25
11. Conclusions.....	26
12. Archive & Publication	27
13. Acknowledgements.....	27
14. Bibliography	28
Appendix 1: OASIS Information	29

FIGURES

Figure 1: Site Location (Scale 1:50 000)	2
Figure 2: Trench location plan overlain with details of the brooks and osier pits shown on the 1808 Sherriff Map of Birmingham.	3
Figure 3: Sherriff's 1808 Map of the area with the trenches overlaid in red.	4
Figure 4: Trench 01: south-facing section across riverine gravels and silts (2m scale) 6	
Figure 5: Trench 01, South-facing section.....	7
Figure 6: Trench 02: view north across channel deposits and associated features; 2m scales	8
Figure 7: Trench 02: Plan of channel deposits and associated features.....	9
Figure 8: Trench 02, Composite west-facing section across river silts & gravels and corresponding photos.	11
Figure 9: River gravels observed in machine-cut slot, view north-east; 2m scales.....	12
Figure 10: Possible osier pit (01) during excavation	13
Figure 11: East-west section across possible osier pit (01) and corresponding photo.	14
Figure 12: 1837 OS Map showing buildings in the study area.....	15
Figure 13: Location of samples.....	17

TABLES

Table 1: Samples analysed for Environmental Data.....	16
Table 2: Information from pollen sub-samples.....	18
Table 3: Plant list from 100 ml sediment, names and order according to Kent (1992)	20
Table 4: Pollen and spores	20

An Archaeological Excavation at Dean Street/Upper Dean Street, Birmingham (NGR SP 07267 86352)

Dr. Roger Kipling

Summary

An archaeological excavation was undertaken by University of Leicester Archaeological Services (ULAS) on behalf of CgMs Consulting between 26th October and 6th November 2009 at Dean Street/Upper Dean Street, Birmingham, in advance of a proposed mixed use development scheme.

Trench 01 revealed truncated river gravels and silts likely to represent part of the post-medieval Dirty Brook also identified in excavations in 2003 to the north. The full width of this channel could not be ascertained due to truncation by modern cellars. A wide expanse of river gravels and silts was also identified in Trench 02. Although this evidence was clear with two channel bases and a large spread of river gravels and silts it seems likely that this also represents the 18th-century Dirty Brook. It is possible that this was a marshy area created by river meanders and overbank flooding episodes. Post-medieval deposits of compacted rubble along the western edge and overlying part of the brook deposits seems to indicate some form of consolidation of the area adjacent to the brook, with twigs and branches found on the surface representing either waterside trees or the remnants of some form of revetment.

A pit partly lined with wooden planks and plant debris was cut into the made-ground adjacent to the brook. The feature appeared to date to 1700 at the earliest and to postdate the infilling of the western channel although it was being infilled by the close of the 18th century. Worked fragments of wood from the backfill may suggest it was originally a more robust structure, truncated by later disturbance. The lower fill of the pit comprised willow twigs and bark and given the presence of osier pits marked on an early 19th-century map of the area, it seems likely that willow processing was taking place here during this time.

The site archive will be deposited with Birmingham City Council under the accession number EBM 472.

1: Introduction

University of Leicester Archaeological Services (ULAS) was commissioned to undertake archaeological excavations at Dean Street/Upper Dean Street, Birmingham (Fig. 1), in advance of a mixed use development scheme.

A desk-based assessment and historic building recording had been undertaken prior to the excavation (Litherland & Watt 2000). This determined that two medieval/post-

medieval streams, the Pudding and Dirty Brooks crossed the site. This research also raised the possibility of the presence of features associated with osier beds and other industrial activity known to have been undertaken in the area during the 18th century.

It was considered that the proposed development would have a damaging effect on any archaeological deposits present within the application area. Archaeological excavation was therefore recommended by the Senior Planning Archaeologist, Birmingham City Council, as archaeological advisor to the planning authority addressing the requirements for an archaeological impact assessment following Planning Policy Guidelines 16 (PPG16, Archaeology and Planning, Paragraph 30).



Figure 1: Site Location (Scale 1:50 000)

Reproduced from Landranger 1:50 000 by permission of Ordnance Survey[®] on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2005. All rights reserved. Licence number AL 100029495.

2. Site Description, Topography and Geology

The site is approximately 0.5ha and lies in the centre of Birmingham (NGR SP 07267 86352 (centred)) on land bordered by Upper Dean Street, Dean Street, Pershore Street and an Ice Rink (Fig. 2). It comprises various buildings (including Nos 42-45 Upper Dean Street which are grade II listed) and several enclosed areas of hard standing being utilised as car parks.

The site lies on the south-west facing side of the sandstone ridge overlooking the Rea Valley, close to the Birmingham Fault. The drift geology consists mainly of scattered patches of sand and gravel, while deposits of alluvium have built up on the Rea Valley floor (CgMS 2009). An environmental review undertaken in 2000 stated that the underlying solid geology of the site consists of Middle Triassic Bromsgrove Sandstone Formation (Litherland & Watt 2000, 2). It also found 'made ground' across the site that varied in depth from 2.10-3.25m below ground level. Materials including pottery, timber, mortar, ash, shale, glass, tile, clinker and slag were also recorded.

The investigations also recorded the existence of occasional intact brick walls and concrete footings.

Water trapped between the Mercia Mudstone and the Sandstone of the fault line created a series of springs that gradually flowed south-east towards the River Rea. Because of the plentiful supply of water historically, this area was significant and the complex of watercourses helped shape the development of the town (Patrick 2009, 1). The area has changed greatly over the last few hundred years and none of these watercourses are now visible.

The site is mainly flat at a height of approximately 110m AOD, with a gentle slope from east to west in the area of the car park and is currently a mix of tarmac and concrete car parking with palisade fencing around the perimeter. No evidence of the former water courses of Pudding and Dirty Brooks are evident on site.

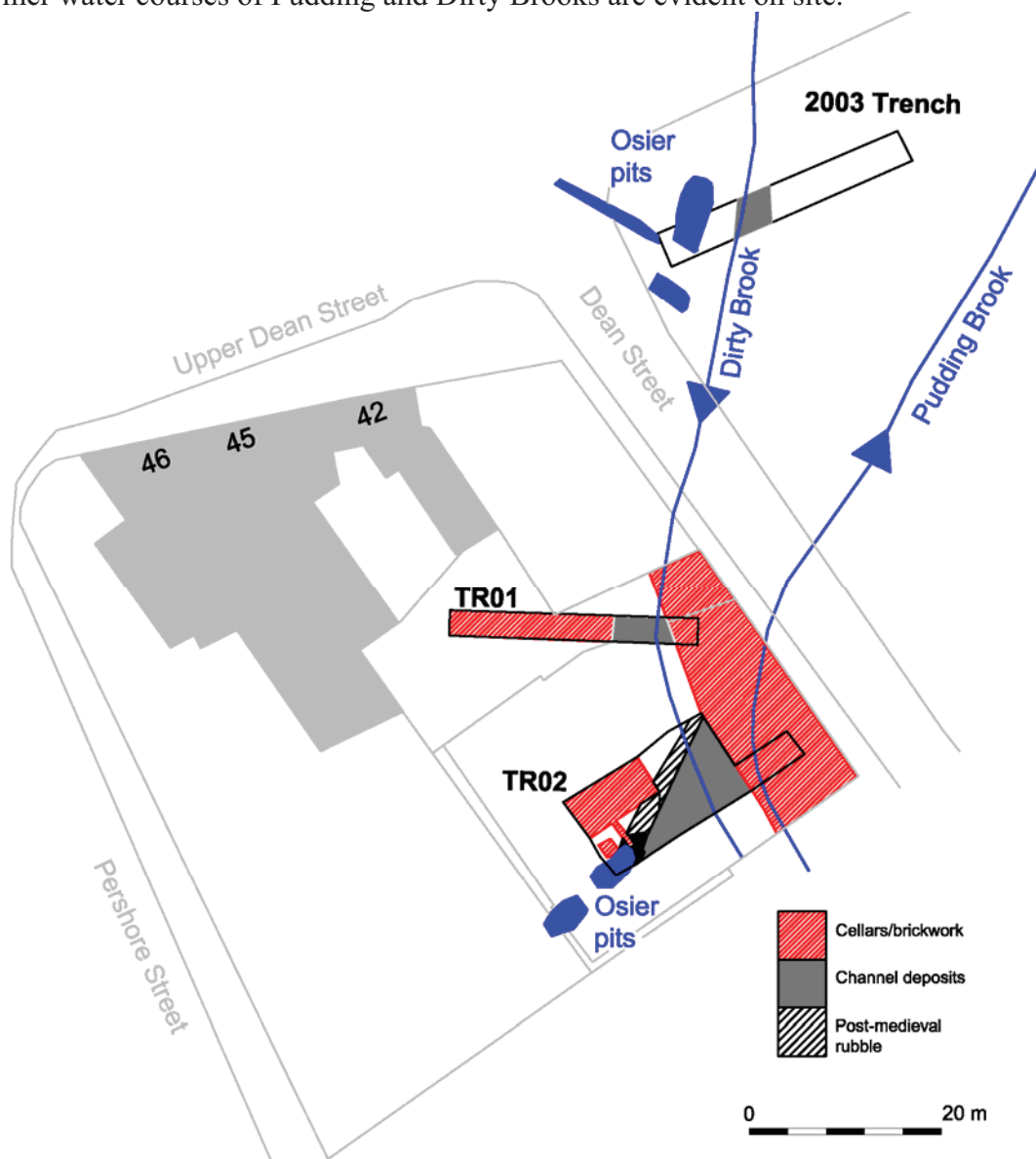


Figure 2: Trench location plan overlain with details of the brooks and osier pits shown on the 1808 Sherriff Map of Birmingham.

3. Historical and Archaeological Background

The desk-based assessment found little historical documentation for the study area as it lay in fields outside the main town. A large watercourse serving the two moats (the Manorial Moat and the Parsonage Moat) lay to the north. The Pudding Brook carried clean water from Edgbaston north-east into this watercourse while the Dirty Brook is thought to have carried waste from a tannery on Edgbaston Street southwards away from the town (Litherland & Watt 2000, 6). The fact that the two Brooks flowed in opposite directions was commented on by Hutton in his *History of Birmingham* (1783, 332). The area attracted industries that required water for their operation notably tanning, hemp retting, willow processing and basket makers (Litherland & Watt 2000, 7). An early 19th-century map of this area (Sherriff 1808) shows brooks as well as osier pits and a skin yard probably associated with tanning close to the site (Fig.3). Shortly after the moats were filled in and the watercourses vanished into the drainage system as the area began to be built up. By 1847 the study was completely built over with domestic and industrial buildings. The Ordnance Survey map of 1888 shows a mixture of businesses including the Birmingham Toy Manufactory, a whip, saddle and harness works, two boot and shoe factories as well as housing. By the 20th century much of the buildings were warehouses and by 1978 the area had fallen into decline.



Figure 3: Sherriff's 1808 Map of the area with the trenches overlaid in red.

A small scale excavation in 2003 at Dean House, to the east of the site revealed a pit and post-holes of post-medieval date and deposits that probably represented the base of the Dirty Brook (Martin and Ratkai 2005).

4: Aims and Methods

All work followed the *Archaeological Written Scheme of Investigation, Upper Dean Street, Birmingham, West Midlands* (WSI; CgMS 2009) and was carried out in accordance with the Institute for Archaeologists' (IfA) *Code of Conduct* (2008) and *standard and Guidance for Archaeological Excavations* (2008).

The archaeological excavation was undertaken between the 26th October and 6th November 2009 by Roger Kipling and Steven Baker.

The objective of the excavation (from the WSI) was to

- determine the date, form and function of the Pudding and Dirty Brooks;
- identify, sample and analyse environmental and industrial residues in the Pudding and Dirty Brooks which could provide information on the past environment and surrounding medieval and post-medieval industrial activity;
- identify, sample and analyse the osier pits and environmental or industrial residue in them;
- identify and examine any archaeological features predating the 18th century maps of the area including former water courses and environmental or industrial residues in them.

A 360° machine excavator equipped with a toothless ditching bucket was employed to excavate two trenches measuring 26m x 3m and 25m x 3 m. Trenches were positioned in order to target the lines of the two brooks and possible osier pits identified on historic maps. Full archaeological supervision was undertaken throughout this work in order to monitor for evidence of archaeological deposits or remains. The trenches were hand cleaned and recorded. After assessment of the archaeological deposits, Trench 01 was backfilled due to the unstable nature of the trench and Trench 02 was widened to 9m (avoiding the cellars to the east) to further investigate the archaeological deposits.

Following the cleaning of the extended Trench 02, two primary research tasks were identified.

- to excavate representative sections across the river gravels and silts. To identify the Dirty and, potentially, Pudding Brooks.
- Secondly, to identify and excavate other features located in the trench in order to determine their character, function, date and relationship with the brook(s).

5: Results

Trench 01

Trench 01, measuring 26m x 3m (78m²) was initially opened in the northern area of the development site in order to target the Dirty Brook, believed to have traversed the site from the north-west at this point (Fig. 2). Whilst it was apparent that cellared 19th-century industrial buildings had caused severe disturbance in this area (Fig. 12), a sequence of up to 0.60m-0.80m accumulation of dark grey/black organic water laid silts overlying coarse river gravels (Fig. 4; Fig. 5, (32), 33)) was revealed below *c.*2m of 19th-century demolition material.

Although heavy truncation from the 19th-century cellars prevented the characterisation of the river deposits, it is likely that these represent the Dirty Brook. Environmental samples of the organic silt material were taken in order to establish the presence of plant or pollen remains. For safety reasons the trench was promptly backfilled following recording.



Figure 4: Trench 01: south-facing section across riverine gravels and silts (2m scale)

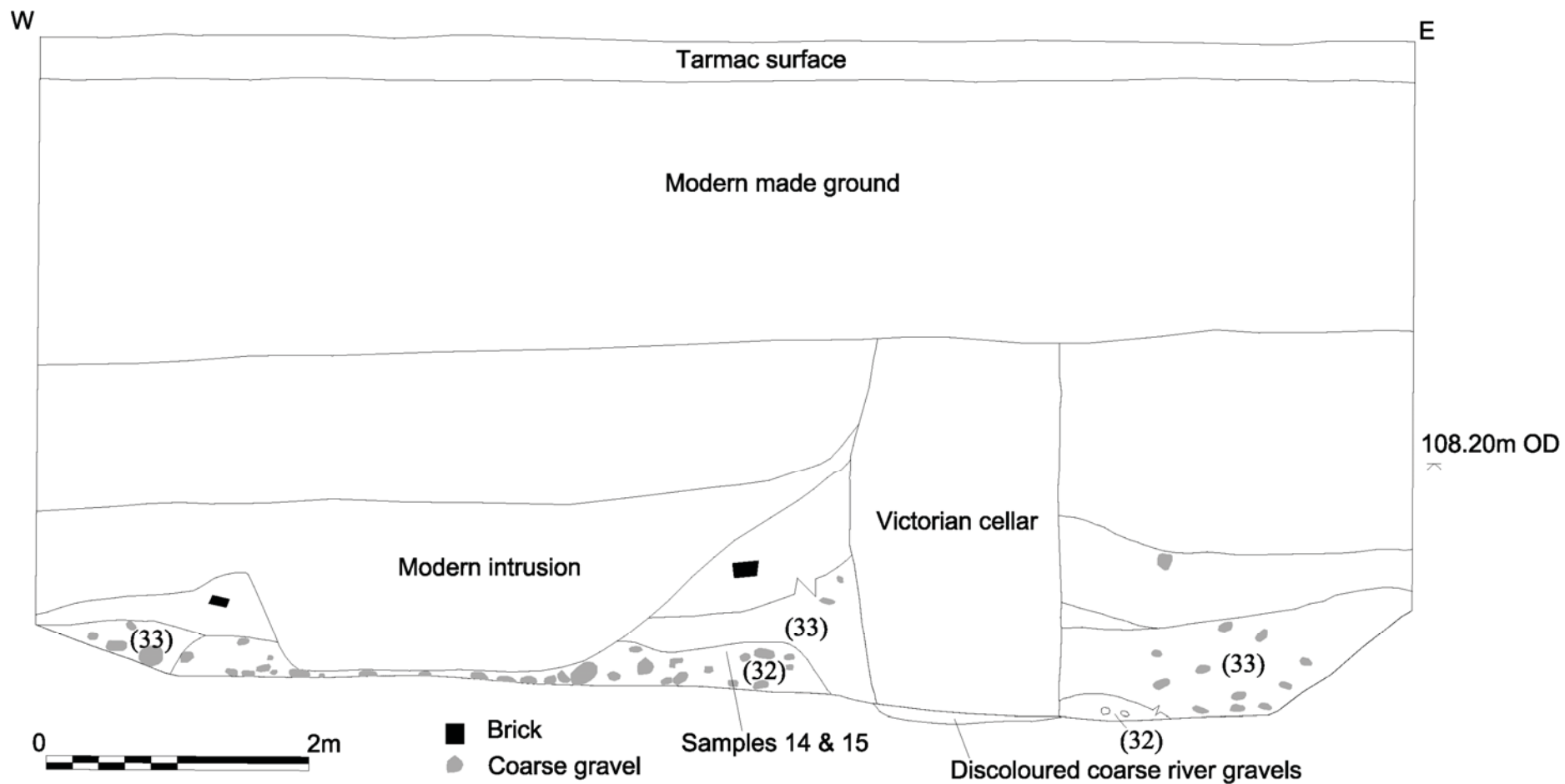


Figure 5: Trench 01, South-facing section

Trench 02

Trench 02 was opened in the southern area of the site, with the aim of locating both the Dirty Brook and the Pudding Brook. It soon became obvious that Victorian cellars along the Dean Street frontage had disturbed much of the eastern area (Fig. 7). Cartographic evidence suggests that these structures date from the early 19th century and the rapid urbanisation of this extramural area. However, organic deposits were recorded to the south and the trench was widened out to open area of 16m x 9m (144m²)

Machine excavation and subsequent hand-cleaning of the area quickly established that the area comprised two distinct sectors, defined by a cut feature running diagonally north-east to south-west along the trench (Figs 6 & 7). To the east, an expanse of coarse river gravels and silts were visible, along with a number of timber fragments. To the west the area had been disturbed by post-medieval building foundations.



Figure 6: Trench 02: view north across channel deposits and associated features; 2m scales

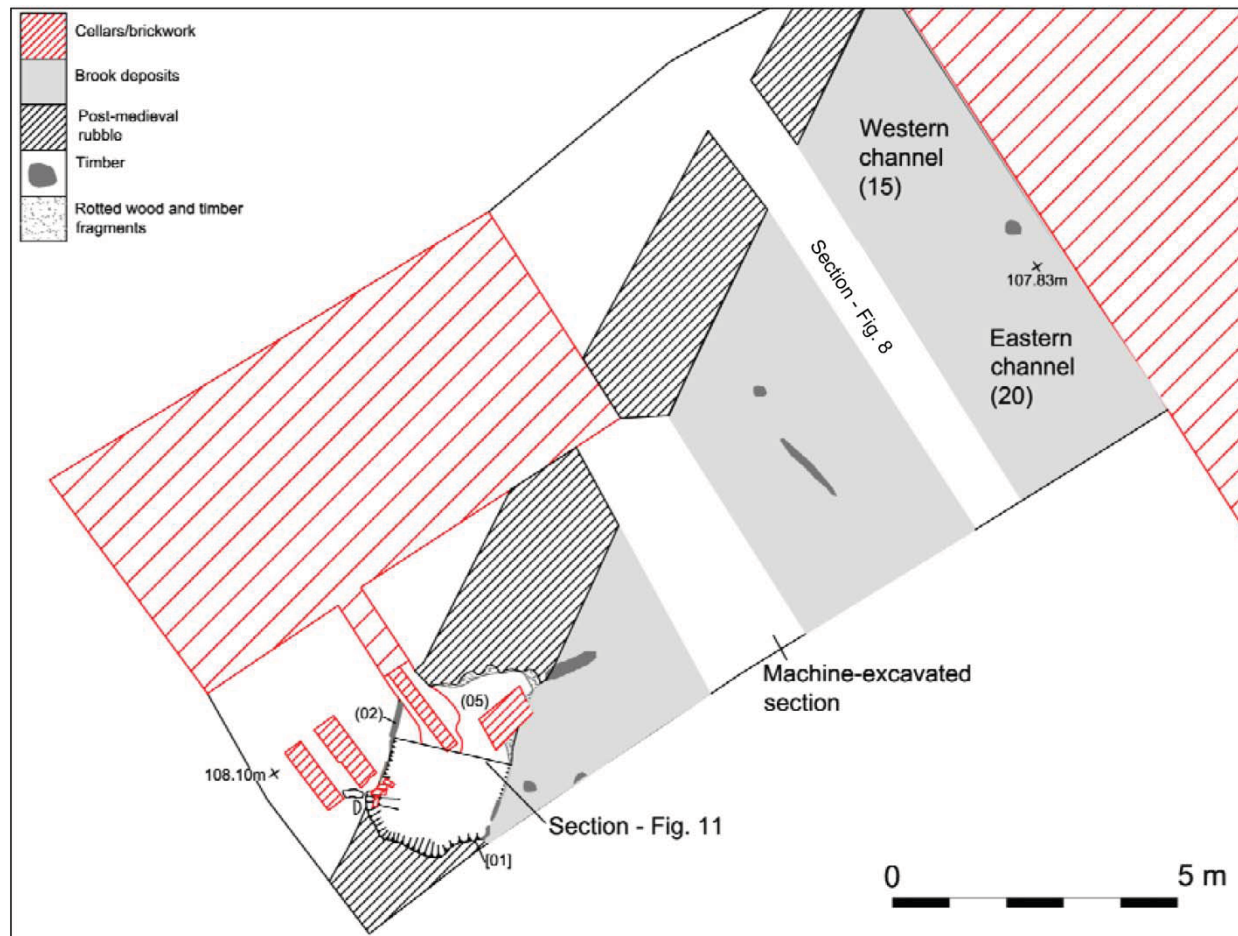


Figure 7: Trench 02: Plan of channel deposits and associated features.

Brook Deposits

A 1m-wide slot was cut diagonally north-west – south-east by hand, at the northern end of Trench 01 in order to target the presumed Dirty Brook river course. Excavation revealed a 10m wide, *c.* 0.40 - 0.60m thick sequence of coarse river gravels and organic silts overlying natural sands and gravels (Figs 7-9). Two probable shallow water channels or scouring episodes were discernible. The eastern channel was approximately 0.4m deep and was disturbed by cellars on its eastern edge. It comprised layers of silty sand and coarse gravel and rounded pebbles, (Fig. 9; contexts (20), (21) & (23)), alternating with bands of pale brown sandy silt (Contexts (22), (24)).

The western channel measured *c.* 2.5m wide and 0.50m deep, filled with dark silts and gravels (Fig. 9). The upper fill of the channel (15), was sealed by coal, mortar and brick-rich dump layers (contexts 13 & 14), likely representing early 19th century attempts at land consolidation prior to construction. A single pottery sherd dating to between *c.* 1600 and 1800 in date was recovered from (15), along with a clay pipe bowl dating to *c.* 1680-1730.

The two channels were divided by a *c.* 1m wide bank of naturally-formed coarse gravel (Fig. 9; (18)) overlain with a 0.40m-thick gravel deposit (19). These appear to be naturally formed river gravel deposition that had been eroded by the two water channels to either side. Contexts 16 and 17 underlay both the bank and the channel and represent natural gravel deposits. Environmental samples of silts from both channels were taken for purposes of pollen and macrofossil identification. Both channels were overlain by a further 0.40m- thick accumulation of heavily cellar-disturbed homogeneous possible brook silt material, identified in section following initial machining.

Timber fragments on the surface of the channel deposits appear to be mainly twigs and branches although it is possible some of these could represent revetment.

A machine-excavated section across the river deposits south of the hand-dug section (Figs 7 & 9), revealed a comparable sequence of silts and gravels separated by a bank of coarse gravel. This secondary section did not, however, provide further clarification as to the specific course of the brook.

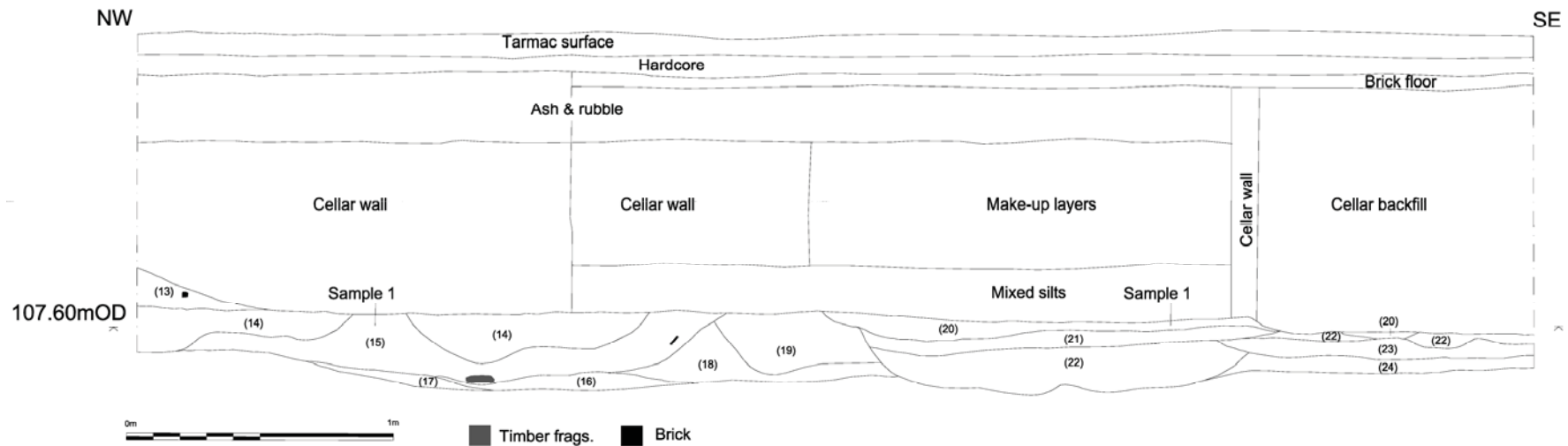


Figure 8: Trench 02, Composite west-facing section across river silts & gravels and corresponding photos.



Figure 9: River gravels observed in machine-cut slot, view north-east; 2m scales

Possible Osier Pit

A sizeable pit (Fig. 7, [01]) was recorded in the southern part of the trench, cutting into the edge of the channel and the dump of post-medieval rubble (context 13). The sub-rectangular bowl-like feature was aligned broadly north-south and measured c.3.80m x 1.90m and 0.30m deep with near-vertical sides and a probable concave base (Fig. 10).



Figure 10: Possible osier pit (01) during excavation

The primary fill (Fig. 11; 03) consisted of a heavily organic dark brown deposit of densely compacted plant and/or plant debris. Environmental analysis indicated that this material consisted of willow (*Salix*) twigs and leaves. A secondary fill of brownish-grey sandy silt (05) contained organic debris and timber fragments, possibly from a now collapsed wooden structure. Pottery from this fill provided a date of c.1700-1800.

The landward (western) side of the pit appeared to have been braced against collapse using a revetment of oak and alder timber posts and planks (Fig. 7; (02)) built against the 19th century dump deposits which the pit cut into.

The pit cut a 0.40m deep sequence of sandy grey-brown riverine silts (Fig. 11; (06), (08), (10)) and coarse sand with rounded river gravel deposits (Fig. 11; (07) & (09)). These deposits were similar to those seen in the two sections to the north-east. A pipe bowl dating to c.1710-1720 was recovered from (06).

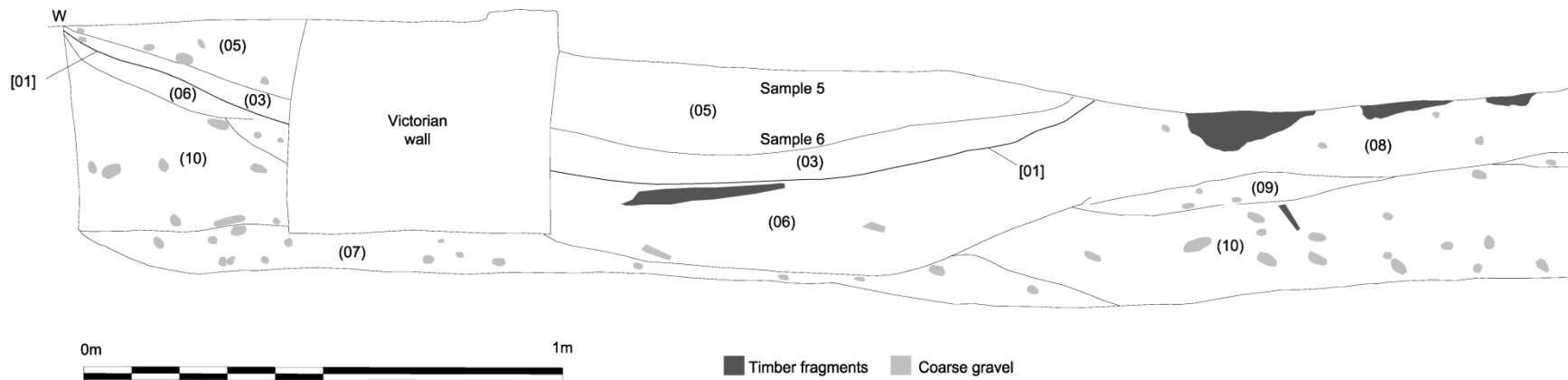


Figure 11: East-west section across possible osier pit (01) and corresponding photo

Modern Features

The adjacent north-western area was occupied by dumps of compacted brick rubble, mortar and demolition debris running south-west to north-east and likely represents 19th century attempts at consolidation of unstable ground adjacent to the brook. This material was also visible in section (Fig. 8; (13 & 14)). Further north-west the area was characterised by heavy disturbance from cellars.

A square brickwork building or structure measuring approximately 1m square truncated the pit at its south-west corner (Figs 7 & 11). Examination of a sample brick revealed it to be handmade and measuring 230 x 100 x 64 (cm) or 9 x 4 21/2 ". Whilst not closely datable, it is broadly attributable to the early 19th century (Neil Finn, pers. comm.). This tallies with the 1825 Goad Insurance company map and the 1837 OS map which show buildings in that area by this date (Fig. 12).

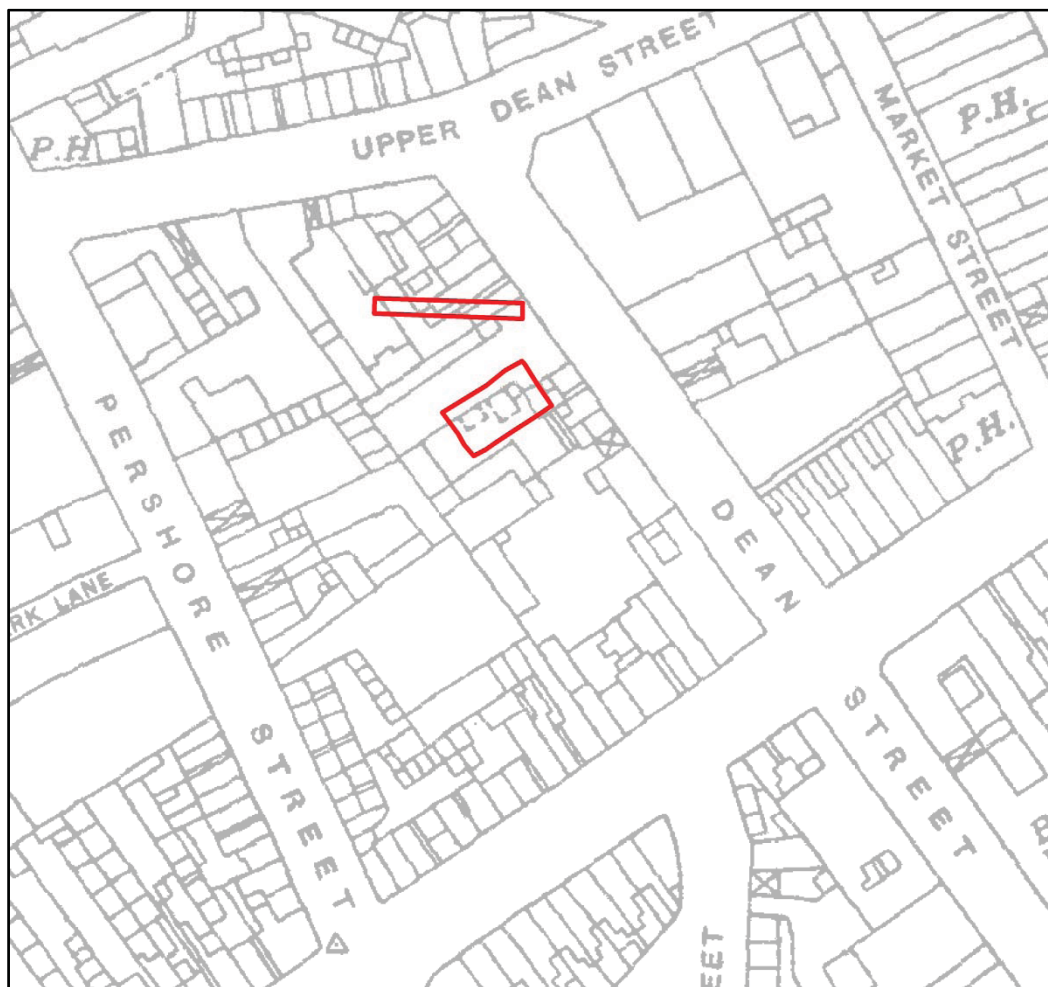


Figure 12: 1837 OS Map showing buildings in the study area.

6. Assessment of Archaeobotanical Material (Pollen and Plant Macrofossils) - James Greig

Introduction

The site consisted of an open area with a series of channel fills containing features with conditions suitable for the preservation of plant remains, with sediments appearing to be organic. The site was visited by the writer on November 5th 2009 and some samples collected; other samples were taken during the course of the excavation. Samples were taken to investigate for waterlogged preservation of organic material which may provide evidence of the local environment or activity on the site. The deposits encountered were thin layers with little potential to see change over time; all were dated to the post-medieval period by finds and pottery.

Samples from Trench 1 were taken from a deposit thought to be part of the Dirty Brook as well as from two thin layers thought to represent silted channels in Trench 2. In addition a pit, thought to be an osier pit because of the presence of wood and twig fragments, was sampled from the top and bottom of the deposit to investigate for evidence of its function.

Samples

A number of features were sampled and numbered 1-6 (Table 1). The location of the samples is shown on Figs 5, 9, 11 & 13.

Table 1: Samples analysed for Environmental Data

Sample No	Context	Description	Taken by
1 (ULAS 11)	Trench 2: (20) Eastern channel	Eastern channel	JG
2 (ULAS 10)	Trench 2: (15) Western channel	Western channel	JG
3 (ULAS 14)	Trench 1 (32)	sample of A	ULAS
4 (ULAS 15)	Trench 1 (33)	sample of B	ULAS
5 (ULAS 1)	Trench 2: (1) (05) top	fill of ?osier pit	ULAS
6 (ULAS 2)	Trench 2: (1) (05) bottom	fill of ?osier pit	ULAS

Laboratory work

Plant macrofossils

Subsamples of 100 ml were measured out from two samples thought to be representative, 15 and 2. They were broken down in water, and the lighter, organic, fraction washed over to

separate it from the inorganic material, and caught in a 300 µm sieve. The washover was sorted in water under a x10 stereo microscope and the plant remains identified and checked with the writer's own reference collections. The results are listed in taxonomic order (Kent 1992) in *Table 2*.

Pollen analysis

Pollen sub-samples from each sample were processed using the standard method; about 1 cm³ subsamples were dispersed in dilute NaOH and filtered through a 70µm mesh to remove coarser material, which was then scanned under a stereo microscope. The finer organic part of the sample was concentrated by swirl separation on a shallow dish. Fine material was removed by filtration on a 10µm mesh. The material was acetolysed to remove cellulose, stained with safranin and mounted on microscope slides in glycerol jelly. Counting was done with a Leitz Dialux microscope. Identification was using the writer's pollen reference collection, seen with a Leitz Lablux microscope. The pollen types have been listed in taxonomic order according to Kent (1992), in *Table 3*.

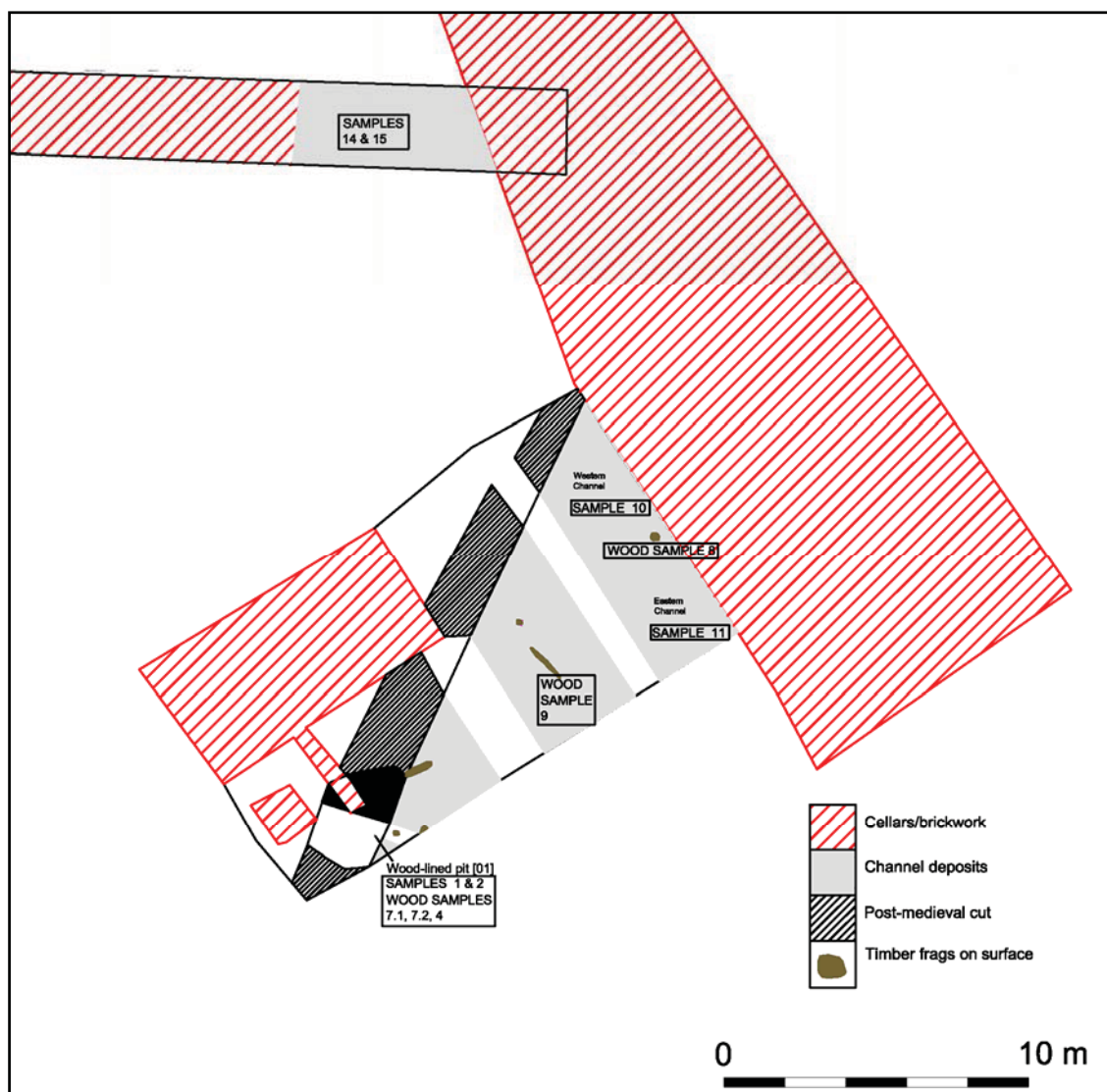


Figure 13: Location of samples.

Results

Table 2 shows the results from the pollen sub-samples. The macrofossils from samples 15 and 2 are given in Table 3, and the pollen from the six samples in Table 4 (below).

All samples contained enough well-preserved pollen for a good pollen spectrum to be obtained of each as well as macrofossils. The results from samples 15 and 2 show that the quantity of seed flora is quite small. A few insect remains were observed in Samples 11 and 10 but it was felt that further analysis would not add to the discussion of the environment.

Table 2: Information from pollen sub-samples

Sample No	Context	Contents	Biological remains
11	Trench 2: (20) Eastern channel	organic debris with a little sand/silt	<i>Juncus</i> sp., <i>Stellaria</i> , insect remains
10	Trench 2: (15) Western channel	organic debris with sand and slag-like material, perhaps coal cinder, sand and red pot/brick	<i>Juncus</i> , <i>Stellaria</i> , Cyperaceae, insect remains
14	Trench 1 (32)	Amorphous mainly organic material with a little sand and charcoal	<i>Juncus</i>
15	Trench 1 (33)	Organic debris with charcoal and coal, sand and red brick/pot	<i>Juncus</i> , cf. <i>Rumex</i>
1	Trench 2: (1) (05) top	Some organic debris, charcoal, coal and coal cinder and red brick/pot	
2	Trench 2: (1) (05) bottom	Small organic fraction, much coal cinder, red brick/pot	<i>Stellaria</i>

The results are generally typical of urban deposits, with the pollen showing a wide range of material from a number of possible sources such as the immediate surroundings (typically weeds), the more distant surroundings (typically a range of trees) and some plants that are more likely to have been brought into the town in some form or other rather than having grown on the spot, such as signs of cereal and hay crops, and crop weeds.

Trees

There were scattered records from trees associated with woodland such as *Pinus* (pine), *Ulmus* (elm), *Quercus* (oak), *Fagus* (beech) and *Tilia* (lime). The surroundings unsurprisingly do not seem to have been wooded, but there were probably trees scattered around the landscape, as there are even today. *Betula* (birch), *Alnus* (alder) and *Corylus* (hazel) grow up quickly and are abundant in the city now, with alder growing along watercourses and hazel and birch springing up in waste places. Samples 10 and 15 had the highest alder pollen. *Sambucus nigra* (elder), *Salix* (willow) Ericales (heather) and *Crataegus* (hawthorn) can be regarded as minor woodland and scrub trees and they were also present. It should be noted that elder and hawthorn in particular, leaves rather small pollen records which may understate their abundance in the landscape.

Crops and weeds

A number of crops were represented, such as possible cereals especially in samples 15, 1 and 2 and *Secale* (rye) in 10 and 14. *Vicia faba* (broad bean), possible *Pisum sativum* (pea) and

Cannabis-tp., which could be from hops or hemp, were also present. Such remains could be from materials brought in to Birmingham, and often found in such urban sites.

Sample 2 macrofossils were a range of common and ubiquitous weeds; weeds usually show up better from seeds than their pollen, although the macrofossils of *Stellaria media* (chickweed) may correspond to pollen of Caryophyllaceae, the *Atriplex* seed to the Chenopodiaceae pollen, and *Rumex* seed to *Rumex* pollen. A record of *Centaurea cyanus* (cornflower) pollen in the rich flora of sample 4 indicates a cornfield weed that may have been deposited on the site together with cereal remains, possibly in dung.

Grassland

A number of potential grassland plants were identified, such as *Trifolium pratense* (red clover) and *T. repens* (white clover) as well as the ubiquitous *Plantago lanceolata* (ribwort plantain). *Centaurea nigra* (knapweed) was present in samples 15, 1 and 2, a possible sign of hay or its products such as dung. There is a concentration of possible grassland records in samples 1 and 2 such as knapweed, *Plantago lanceolata*, Lactuceae (a large group of composites which includes a number of grassland plants) and Poaceae (grasses, which grow in almost every habitat including grassland).

Wetland and aquatic vegetation

Sample 15 macrofossils were all potentially wetland plants and the rather peaty nature of the deposit fits well with it being a channel fill of some sort. It also had high amounts of alder pollen.

Parasite ova

An ovum of the intestinal parasite *Trichuris* (whipworm) was found in sample 2, a probable sign of sewage, and often found in urban deposits.

Acknowledgements

Thanks to the excavator Roger Kipling and to Angela Monckton.

Table 3: Plant list from 100 ml sediment, names and order according to Kent (1992)

	Common Name	Sample 15	Sample 2
<i>Ranunculus</i> sect. <i>Ranunculus</i>	buttercup	17	1
<i>Ranunculus sceleratus</i> L.	celery-leaved buttercup	1	-
<i>Ranunculus flammula</i> L.	lesser spearwort	-	8
<i>Urtica dioica</i> L.	common nettle	-	6
<i>Atriplex</i> sp.	orache	-	1
<i>Montia fontana</i> subsp <i>minor</i> Hayw.	blinks	6	-
<i>Stellaria media</i> (L.) Villars	chickweed	-	10
<i>Persicaria</i> cf <i>hydropiper</i> (L.) Spach	cf. water-pepper	-	1
<i>Polygonum aviculare</i> L.	knotgrass		1
<i>Rumex</i> sp.	dock	1	1
<i>Rubus</i> cf. sect. <i>Glandulosus</i> Wimmer & Grab	possible bramble	-	1
other remains			
<i>Geococcus</i>		-	1
? tree bud		-	1
Trichoptera		+	+
Coleoptera		+	-

Table 4: Pollen and spores

	Common Name	Sample 11	Sample 10	Sample 14	Sample 15	Sample 1	Sample 2
Spores							
<i>Pteridium</i>	bracken	3	3	3	1	2	2
<i>Polypodium</i>	polypody	1	1	1	2	-	-
Pollen							
<i>Pinus</i>	pine	-	1	1	4	-	1
<i>Ranunculus</i> -tp.	buttercup, crowfoot	4	6	1	4	+	1
<i>Ulmus</i>	elm	2	1	-	-	-	1
<i>Cannabis</i> -tp.	hemp, hop	-	-	1	-	-	-
<i>Quercus</i>	oak	5	10	7	6	5	11
<i>Fagus</i>		1	-	-	-	-	-
<i>Betula</i>	birch	-	1	1	3	1	2
<i>Alnus</i>	alder	34	78	11	42	3	9
<i>Corylus</i>	hazel	5	10	6	5	2	2
Chenopodiaceae	goosefoot, orache	-	-	-	-	1	1
Caryophyllaceae	stitchwort family	1	2	1	-		2
<i>Rumex</i> -tp.	docks and sorrels	-	2	1	1	4	5
<i>Tilia</i>	lime	1	4	-	1	-	+
cf. <i>Salix</i>	willow	-	1	-	1	-	1
Brassicaceae	brassicas	-	-	-	1	-	-
Ericales	heathers	-	-	-	4	-	-

	Common Name	Sample 11	Sample 10	Sample 14	Sample 15	Sample 1	Sample 2
<i>Filipendula</i>	meadowsweet	-	-	-	1	-	-
<i>Potentilla</i> -tp.	tormentil, cinquefoil	-	-	-	1	1	-
cf. <i>Crataegus</i>	hawthorn	-	-	-	1	-	-
<i>Trifolium repens</i> -tp.	white clover	-	1	-	-	-	1
<i>Trifolium pratense</i> -tp.	red clover	-	-	-	2		3
<i>Vicia faba</i>	broad bean	-	-	1	-	+	-
cf. <i>Pisum sativum</i>	pea	-	-	-	-	-	1
<i>Ilex</i>	holly	-	-	-	?	-	-
Apiaceae	umbellifers	-	-	1	1	-	1
<i>Mentha</i> -tp.	labiates including mint	-	-	-	1	-	1
<i>Plantago lanceolata</i>	ribwort plantain	+	3	2	4	10	14
<i>Fraxinus</i>	ash	-	-	1	-	1	-
<i>Sambucus nigra</i>	elder	-	-	-	-	-	1
Dipsacaceae	scabiouses	1	1	-	-	-	-
<i>Cirsium</i> -tp	thistles	-	2	-	-	-	-
<i>Centaurea cyanus</i>	cornflower	-	-	-	1	-	-
<i>Centaurea nigra</i>	knapweed	-	-	-	2	1	3
Lactuceae	a group of composites	-	2	9	5	11	16
<i>Aster</i> -tp	daisies etc.	2	-	2	1	1	5
<i>Artemisia</i>	mugwort	1	2	-	-	-	-
<i>Anthemis</i> -tp.	mayweeds etc.	-	-	-	-	-	2
Cyperaceae	sedges	1	1	7	4	1	1
Poaceae	grasses	59	40	66	79	172	138
large Poaceae / Cerealia-tp.	possible cereals	6	-	-	9	6	4
cf. <i>Secale</i>	possible rye	-	1	1	-	-	-
<i>Sparganium</i>	spike-rush	+	-	-	2	-	-
pollen sum		119	169	119	185	200	228
Other							
<i>Trichuris</i>	whip worm ova						1
charcoal							++

7. Wood Identifications - Anita Radini

Four samples of wood were submitted for identification. The identification is based on Microscopic Wood Anatomy by Schweingruber (1982), and modern reference material. The results are presented in Table 1 (below).

Sample No	Context	Identification
4	Trench 02 (03) Primary fill of pit [01]	numerous twig fragments of willow <i>Salix</i> spp. and willow bark.
7.1	02 Wooden posts associated with pit (01)	large wood post of oak <i>Quercus</i> sp., oak heartwood.
7.2	02 Wooden posts associated with pit (01)	small pointed post also made of oak wood <i>Quercus</i> sp., oak heartwood.
8	08 Wood on top of channel	alder, <i>Alnus glutinosa</i> , twig,
9	08 Wood on top of channel	hazel, <i>Corylus avellana</i> L., twig.

Comments

Sample 4 came from a layer at the bottom of the pit and consisted of twig fragments and bark of willow. Willow was used for making baskets, hurdles or wattle and the layer may have derived from twigs being soaked and processed in the pit. This could indicate that the feature was an osier pit as suggested from the 1808 plans.

Samples 7.1 and 7.2 comprised two posts of different sizes, both cut from an established large tree of oak. It is impossible to say if the two posts came from the same cut of wood, although it is possible. The large wood post from 7.1 has an end worked into a tenon to fit into a mortice joint as well as some saw marks. It is not a major timber but could have been used in a building or other structure.

Sample 8 consisted of a young twig of alder, possibly used as a post. Alder wood is a soft wood (especially twigs) which is often used to make handles for artefacts as well as for pit linings.

Sample 9 consisted of twig of hazel, which is likely to have grown nearby the site. The twigs grow quickly in large numbers from coppiced trees, or from the base of major trees making hazel wood a common resource for small wood. The twigs are easily bent when fresh or soaked in water and useful for making hurdles and baskets.

8. The Post-Roman Pottery and Clay Pipe - Deborah Sawday

The pottery, six sherds, weighing 135 grams, was catalogued with reference to the to the Warwickshire County Council pottery fabric series (Ratkai 1998). The clay pipes were examined with reference to similar examples from both Coventry and Birmingham (Muldoon 1979, Higgins 2009). The results are shown below.

Context	Fabric/Ware	Nos	Grams	Comments
POT				
(05) pit	SLPW - Slipware	1	17	Predominately red fabric with white clay and quartz and ?Fe inclusions, iron rich slip under black glaze, post med/modern
(05) pit	MB02 – Later Black ware	1	11	c.1600-1800.
(05) pit	MANG – Mottled ware	2	60	Cup rim & tankard base & rim, c.1680-1740
(05) pit	STEO3 – White Stoneware	1	13	Base fragment, c.1720-1780
(15) channel	MB02 – Later Black ware	1	34	Body fragment, c.1600-1800.
CLAY PIPE				
(05) pit		1	stem	
(06) riverine silts		1	stem	
(06) riverine silts		1		Plain bowl fragment, with spur, burnished externally, cut rim, similar but not identical bowl profile at Coventry dated c.1720 by the maker's mark (Muldoon 1979, fig.259.16), and at Birmingham c. 1710-1780, (Higgins 2009, fig.9.3.50 and fig.9.7.115) although both the latter are not burnished.
(15) channel		1		Complete bowl, burnished, partially milled below rim, illegible makers mark on the tailed heel. Similar but not identical bowl profiles with maker's stamp dies from Birmingham dated c.1680-1730 (Higgins 2009, fig.9.1. 11-13, 9.19-16.44.).

9: Discussion

Evidence from the excavations at Dean Street/Upper Dean Street excavation largely reflects information from other archaeological investigations in the extramural area south of the Bull Ring, both in terms of environment and human activity during the post-medieval period. Deposits relating to the post-medieval Dirty Brook were recorded, consistent with findings from the 2003 excavation located a short distance to the north at Dean House (Martin & Rátkai 2005). Although the medieval Pudding Brook was thought to run through the site to the east, it appears that modern cellars along the Dean Street frontage have destroyed any archaeological evidence in this area. No evidence was recovered from the site for any deposits earlier than the 18th century and it seems likely that this area remained unexploited until the 18th century.

Phase 1: The Dirty Brook

Both Trenches 01 & 02 revealed river gravels, pebbles and overlying waterlain silts representing the base of a watercourse flowing approximately north-east to south-west. An examination of surviving historic maps, notably the Sheriff Map of 1808, suggest that this represents the south-flowing post-medieval Dirty Brook also recorded in 2003 at Dean House as a 4m wide layer of redeposited gravel (Martin & Rátkai 2005, 76).

The brook deposits had suffered heavy disturbance from 19th century cellars and 20th-century buildings. However, the bases of at least two channels were identified in Trench 02. These channels could represent meanders within a single watercourse rather than individual streams, resulting in a wide marshy area. Silt spreads overlying the gravels may in part have been caused by overbank flooding episodes, possibly arising from subsequent land reclamation.

The small amount of dating evidence forthcoming from the excavation, in the form of clay pipe fragments and pottery sherds from the watercourse gravels, largely date to the 18th century indicating that the watercourse was still depositing silt well into the 18th century, during which time the environmental data points to a largely rural setting with little evidence for human activity or occupation in the vicinity.

Phase 2: Post-Medieval Waterside Activity

Throughout the 18th and into the early 19th century the west bank of the watercourse appears to have been the location of some industrial activity. A linear band of compacted brick rubble, mortar and demolition debris running south-west to north-east was recorded compacted into the western edge of the brook. This could represent 19th century attempts at consolidation of unstable ground adjacent to the brook, perhaps to use as a base for water-based industries. Wood fragments found on the surface of the brook deposits were found to be twigs and branches rather than worked timber; however, post-holes from the Dean House excavations suggested the presence of a timber revetment or fence along the brook dating to the 18th – 19th centuries (Martin & Rátkai 2005, 77). It may be that these pieces of wood also represent the remnants of some form of revetment associated with the consolidation of the land along the western edge of the Dirty Brook.

An unlined pit partly revetted with wooden planking was cut into the made-ground to the west, extending out into the water channel. Worked fragments of wood recovered from the

backfill suggest it was originally a more robust structure, truncated by later disturbance. A similar rectangular pit containing dark grey fills with wood twigs as well as 18th – 19th century pottery was also recorded at Dean House in 2003 (Martin & Rátkai 2005, 77). Willow pollen from the deposits and documentary evidence for willow processing suggest that the Dean House feature could have been ‘Matthews Osier Pit’ shown on the 1808 map. Osier pits are also shown on the same map close to the Dirty Brook in the area of Trench 02 and there is documentary evidence for a basketmaker living and working in premises in close proximity to the site at Castle Street (Litherland & Watt 2000, 17). The primary fill of willow twigs and bark suggest that this feature is also likely to be one of the documented osier pits used for the processing of willow. Pottery from both this pit and the one at Dean House suggest that willow processing was being undertaken in the 18th century, prior to the rapid expansion of the town south into this area during the early 19th century.

Phase 3: Infilling of the Watercourse and Building Construction

Waterside activity appears to have come to a close with the sealing and/or truncation of the Dirty Brook gravels and silts with rubble-filled dump material with an accumulation of mixed silts over the top. Once again, the archaeological evidence would appear to parallel the levelling and dumping identified in 2003 at Dean House where evidence for the infilling of the watercourse and levelling of the area was recorded prior to the construction of domestic and industrial premises in the early 19th century as the town expanded southwards (Martin & Rátkai 2005, 78). Although the cellar disturbance made it difficult to establish whether the overlying clay deposits represented levelling material, this is entirely possible.

The brick-built structure adjacent to the osier pit may tentatively be identified as the building first appearing on the 1825 insurance map and on the 1837 OS map probably associated with the industrial premises occupying adjacent land for the first time. The cellared buildings occupying the Dean Street frontage and truncating the river silts and gravels are likely to date from the same period of building expansion south from the historic urban core.

The Environmental Evidence - Angela Monckton

Environmental evidence suggests that by the 18th century the woodland in Birmingham had begun to reduce (Greig 2009, 208). The pollen evidence from the watercourse joining the Parsonage and Manor Moat’s to the north of the site included alder, hazel, birch and elm, all of which were also found at Upper Dean Street along with oak, pine, lime and willow. The surrounding vegetation would appear to be mixed trees scattered in the landscape with alder growing along the watercourse, and scrub trees including elder and hawthorn.

At the Smithfield Market site of the Birmingham Moat the pollen diagram from post-medieval deposits showed rural surroundings with woody thickets, hedgerows, pasture and heath, and arable land with cereals, hemp or hops. A rich assemblage of water plants and waterside vegetation was found with slight sewage contamination (Greig 1979). Insects from the Smithfield Market site showed marshy ground or a pond in an area of grassy vegetation; probably pasture, with vegetation as found today.

Extensive excavations at the Bull Ring by Birmingham University investigated medieval and post-medieval deposits although not sufficiently deep to produce a pollen diagram. The same types of vegetation were found as at the Birmingham Moat throughout the phases of the site with some woodland present. A wider range of plants was found from the more extensive

waterlogged deposits with the presence of hemp confirmed by a seed (Greig 2009). Sampling of deposits with charred plant remains produced a wide range of food plants, particularly of the post-medieval period (Ciaraldi 2009). The insect remains were found to be essentially similar whether from ditches, watercourses, tanning pits, tanks and ponds indicating that function could not be identified by the insect fauna (Smith 2009). The environmental data indicated that the watercourse to the north lay in a damp area within an open or disturbed area surrounded by woodland (Martin & Rátkai 2005, 82). The Dirty Brook may well have been in a similar habitat with rushes and other waterside plants consistent with deposits expected from a watercourse.

Grassland plants were recorded at Upper Dean Street suggesting that prior to industrialisation the area was pasture rather than cultivated. This is also consistent with the lack of artefacts on the sites. At Dean House there was a distinct lack of evidence for cultivated plants other than a minimal amount of cereal pollen and little to suggest any contamination. At Upper Dean Street a number of crops present including rye, broad bean, pea and *Cannabis*-sp., which could be from hops or hemp, although the remains are minimal. Such remains could be from materials brought in to Birmingham, and are often found in such urban sites. The hemp or hop pollen, might suggest hemp processing nearby.

Despite the documentary evidence that the Dirty Brook flowed away from the town, the lack of contamination from both this site and at Dean House would seem to suggest otherwise (Martin & Rátkai 2005, 82). It seems likely that by the post-medieval period, human waste and the by-products of industries such as tanning (it had been suggested that the Dirty Brook carried waste material south from the post-medieval Edgbaston Street tannery) would have contaminated any watercourses flowing away from town (Litherland & Watt 2000, 6). However, the absence of artefacts, faunal and pollen evidence would suggest an unpolluted watercourse with the sole indication of waste the single whip worm ova from the possible osier pit feature, which would be unremarkable from an industrial context.

A range of common and ubiquitous weeds were also recorded; weeds usually show up better from seeds than their pollen, although the macrofossils of *Stellaria media* (chickweed) may correspond to pollen of Caryophyllaceae, the *Atriplex* seed to the Chenopodiaceae pollen, and *Rumex* seed to *Rumex* pollen. A record of *Centaurea cyanus* (cornflower) pollen in the rich flora of sample 4 indicates a cornfield weed that may have been deposited on the site together with the cereal remains, possibly in dung. Evidence possibly representing hay may indicate this was brought into the site or included in dung (see Greig above).

The samples from the possible osier pit were rich in pollen and contained evidence of parasites found in the lower sample, as sewage contamination often found in urban deposits, particularly in pits. The wood identified from the pit included oak as possibly structural timber, with alder twigs. Willow twigs were found in the bottom of the pit which may have been used for making hurdles or baskets. They may also have been used together with alder for pit linings or for wattle for plaster walls.

11. Conclusions

Excavations at Dean Street have revealed evidence of localised post-medieval activity centred on the Dirty Brook. It seems very likely that the watercourse identified in the excavations is the Dirty Brook, also encountered to the north in 2003. The environmental evidence also mirrors previous discoveries from the area, providing further corroborative

evidence for an open landscape of scrub or pasture. Comparisons with the excavations of the Dirty Brook at Dean House to the north-east produced similar evidence of crops and weeds with some woodland persisting with waterside alder and wetland plants. There are few indications of human intervention until the rapid urban expansion of the early 19th century which witnessed the infilling of the watercourse and the construction of domestic and industrial premises which henceforth occupied the area. Interestingly the lack of waste from the deposits would refute the documentary evidence that the Dirty Brook carried waste away from the town.

Historical records and map evidence indicate the presence of osier pits in the locality during the early 19th century and given the presence of willow twigs in the base of the excavated pit next to the watercourse, willow processing seems the most likely function. The Dirty Brook at this time seems to have been a mixture of small channels and marshy ground and compacted rubble appears to have been spread along the western bank in order to consolidate the area for use. The small quantity of pottery recovered serves to highlight the absence of any human intervention during the preceding medieval period, where both the archaeological and documentary evidence suggests the area was most likely to be pasture.

Water was of extreme importance to post-medieval industrial Birmingham and was an integral part of many industries in the area. However it seems that most of these activities are likely to have centred on the water course to the north with this area being limited to willow processing.

12. Archive & Publication

The site archive (EBM 472), consisting of pottery sherds, ceramic building material, environmental samples, paper and photographic records and site drawings, will be housed with Birmingham City Council.

The archive consists of:

- Pottery sherds
- 1 ceramic building material fragment
- 33 single context record sheets
- 3 x A3 drawing sheets
- 72 digital photographs
- 106 monochrome (film) photographs
- A risk assessment form

A short summary report will appear in due course in the journal *West Midlands Archaeology* and a larger report submitted for the *Transactions of the Birmingham and Warwickshire Archaeological Society*.

13. Acknowledgements

The project was commissioned by CgMs Consulting at the instruction of DBK and on behalf of Calco 103 Ltd. The fieldwork was undertaken by Roger Kipling and Steve Baker and was managed by Vicki Score. Specialists included James Grieg - plant macrofossils and pollen; Debbie Sawday - Post-Roman pottery; Angela Monckton - environmental advice and

interpretation; Anita Radini and Graham Morgan - Wood ID; Neil Finn - Brick ID. Thanks also to Mike Hodder at Birmingham City Council for advice and James Gidman and Cathy Patrick of CgMs Consulting.

14. Bibliography

CgMs Limited, 2009. *Specification for Archaeological Excavation at Upper Dean Street, Birmingham.*

Greig, J. 2009 'The Pollen' in Patrick and Rátkai *The Bull Ring Uncovered; Excavations at Edgbaston Street, Moor Street, Park Street and The Row, Birmingham, 1997-2001* Oxford 2009.

Higgins D.A., 2009. 'The Clay Tobacco Pipes' in S. Rátkai (ed.) *The Bull Ring Uncovered; Excavations at Edgbaston Street, Moor Street, Park Street and The Row, Birmingham, 1997-2001* Oxford 2009, 188-226.

Hutton 1783, *History of Birmingham.*

Institute for Archaeologists' (IfA) 2008, *Code of Conduct.*

Institute for Archaeologists' (IfA) 2008, *Standard and Guidance for Archaeological Excavations* (2008).

Kent, D.H., 1992. *List of vascular plants of the British Isles.* Botanical Society of the British Isles, London.

Litherland, S. & Watt, S., 2000. *An Archaeological Desk-Based Assessment of Land at Upper Dean Street, Birmingham City Centre.* Birmingham University Field Archaeology Unit.

Martin, H. & Rátkai, S., 2005. The Dirty Brook: Excavations at Dean House, Upper Dean Street, Birmingham. *Transactions of the Birmingham and Warwickshire Archaeological Society* **109**, 75-84.

Muldoon, S., 1979. 'Marked Clay Pipes from Coventry' in P.J. Davey (ed.). *The Archaeology of the Clay Tobacco Pipe, I.* Oxford. BAR (Brit. Ser) **63**, 255-278.

Patrick, C., 2009, 'Introduction' in Patrick and Rátkai *The Bull Ring Uncovered; Excavations at Edgbaston Street, Moor Street, Park Street and The Row, Birmingham, 1997-2001* Oxford 2009.

Rátkai, S., and Soden, I., 1998. *Warwickshire Medieval and Post-Medieval Ceramic Type Series.* Warwickshire Museum Archaeological Field Services (Unpublished).

Schweingruber, F. H., 1982. *Microscopic Wood Anatomy*, 2nd Edition. F. Flück- irth, Internationale Buchnadrung Fur Botanik und Naturwissenschaften, CH-9053 Teufen Ar.

Appendix 1: OASIS Information

Project Name	An Archaeological Excavation at Dean Street/Uper Dean Street, Birmingham, NGR SP 47627 286352
Project Type	Excavation
Project Manager	Vicki Score
Project Supervisor	Roger Kipling
Previous/Future work	Construction
Current Land Use	Derelict land
Development Type	Mixed use
Reason for Investigation	PPG16
Position in the Planning Process	Planning consent granted.
Site Co ordinates	NGR SP 47627 286352
Start/end dates of field work	26 th October and 6 th November 2009
Archive Recipient	Birmingham City Council
Study Area	c.0.5ha

Dr Roger Kipling
ULAS
University of Leicester
University Road
Leicester LE1 7RH

Tel:0116 252 2836
Fax: 0116 252 2614

Email: rwk1@le.ac.uk

© ULAS 08/02/2010

Contact Details

Richard Buckley or Patrick Clay
University of Leicester Archaeological
Services (ULAS)
University of Leicester,
University Road,
Leicester LE1 7RH

T: +44 (0)116 252 2848

F: +44 (0)116 252 2614

E: ulas@le.ac.uk

w: www.le.ac.uk/ulas



INVESTOR IN PEOPLE

