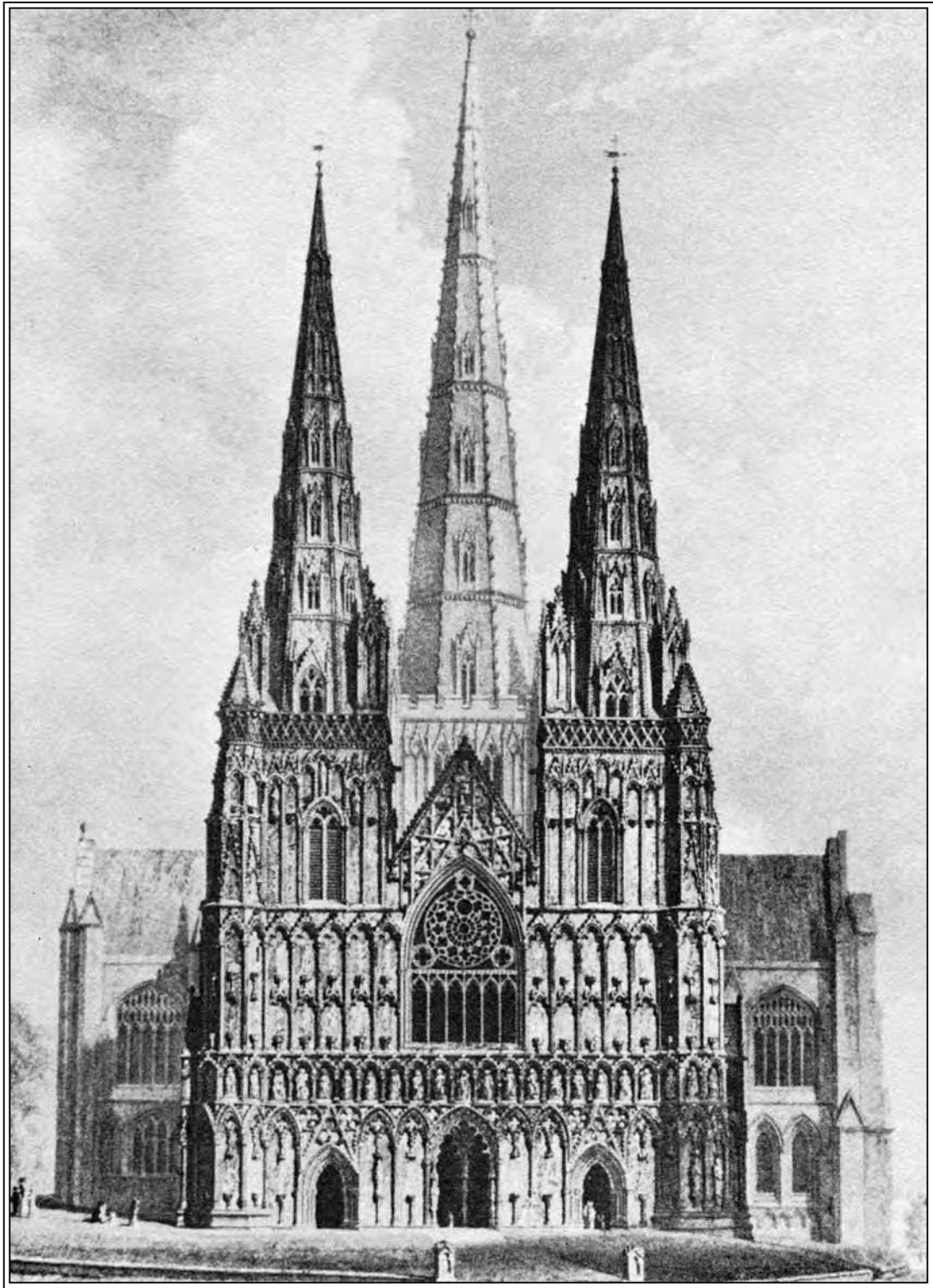




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THE LANDSCAPE OF THE STAFFORDSHIRE HOARD

DELLA HOOKE

INTRODUCTION

In July 2009 a metal detectorist, Mr Terry Herbert, surprised the archaeological world when he found gold objects buried in a field beside the Watling Street in Ogle Hay, Staffordshire. The site was immediately excavated by archaeologists from Staffordshire County Council and Birmingham Archaeology and the remainder of the 'hoard' retrieved. It was made up of mainly small gold objects (with some silver and alloy) that appear to represent war-gear, perhaps battle booty, including pommel caps (or pommel-cap fragments) and other sword fittings, parts of a helmet, folded crosses such as might have been carried into battle, and other probable talismen in the form of small gold serpents. The ironwork had been stripped away from the swords and even most of the garnet decoration removed from the objects. One strip of gold alloy bore a Biblical inscription asking God to disperse enemies (Leahy, Bland, Hooke, Jones, and Okasha 2011).

THE ARCHAEOLOGY OF THE HOARD

The hoard was located close to the Watling Street where it crossed through a spine of upland that linked the Cannock Hills to the uplands of the southern part of the Birmingham Plateau. It was, in the Anglo-Saxon period, a remote area of woodland and heath. The Roman Watling Street was the most obvious man-made feature running through the area and was still in use in the Anglo-Saxon period (Champness 2008, 59).

As far as is known this was an area relatively empty of settlement in the Roman period, apart from the centre at Wall (*Letocetum*) and a few outlying villas and farms. There had been two Iron

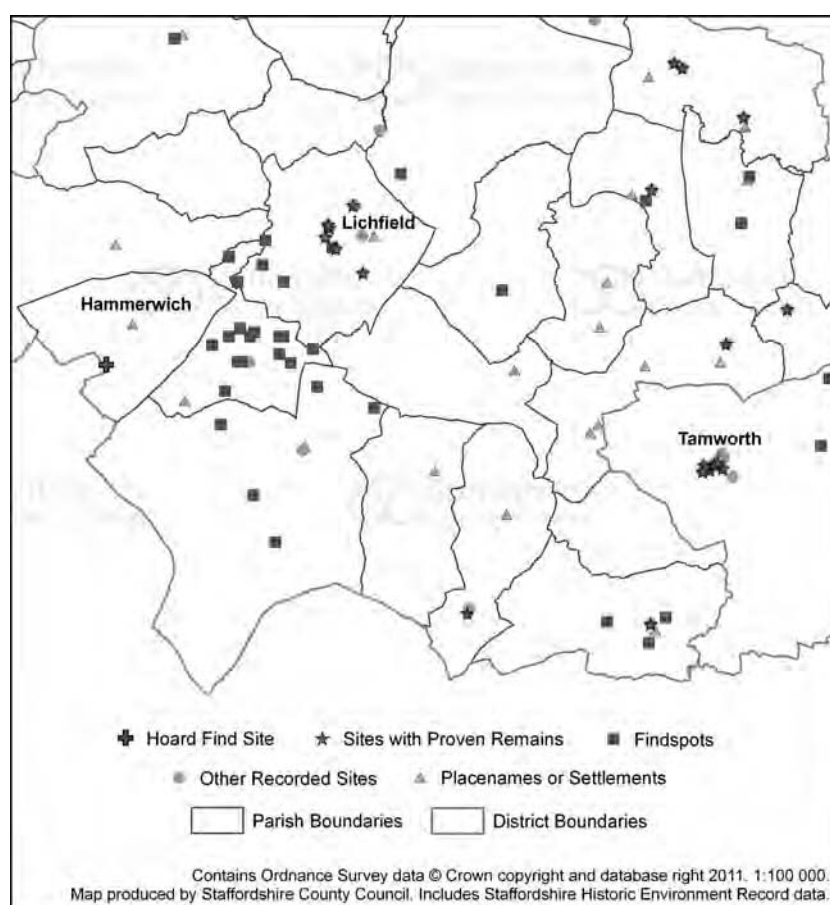


Fig. 1 Staffordshire HER record of Anglo-Saxon sites in the vicinity of the hoard

Age hillforts on the upland spine – Castle Ring to the north and Castle Hills to the south – but these may have been placed to control pastoral resources in a period when cattle, especially, were a sign of status and wealth. For the early medieval period one finds a scatter of find-spots in the vicinity of the Watling Street and Roman Wall (Fig. 1) – as might be expected – and now, also, evidence of occupation at Lichfield before the establishment of Chad's see in the 660s (S. Dean, pers. comm.). The Mercian capital of Tamworth (if the earlier *Tomtun*) was already described as a royal *vicus* in the late 7th century but it lay away to the east, and there was little to provide any reason to suspect such a significant find as the Staffordshire Hoard. (The boundary of the West Midlands which runs north–south close to the find spot did not exist until modern times when the new county was demarcated in 1974.)

The site lay towards the westernmost end of the Lichfield/Tamworth territory and this may have been a significant boundary in the Anglo-Saxon period, forming a boundary between two south Staffordshire folk groups. This area of highland running north–south through southern Staffordshire

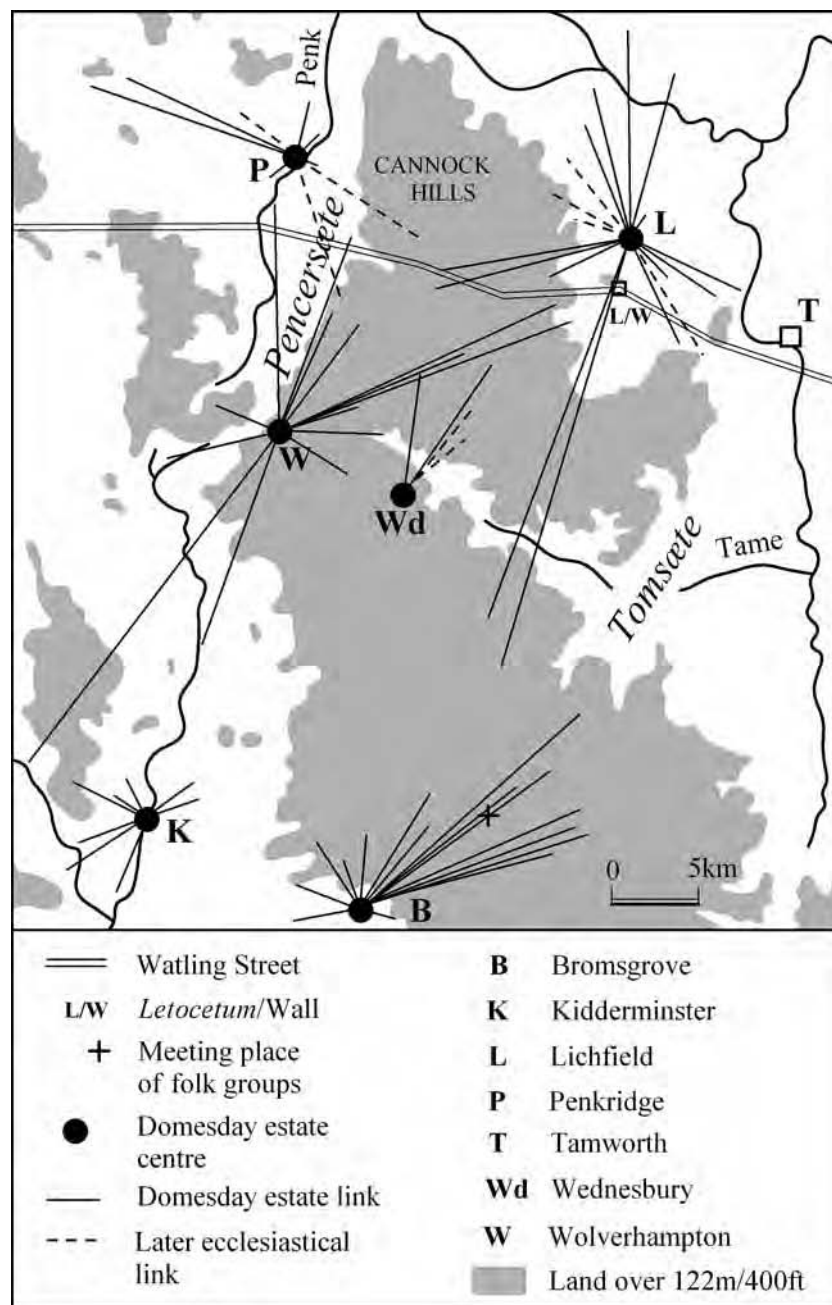


Fig. 2 Domesday estate links in south Staffordshire

from the Cannock Hills southwards separated the territories of two folk-groups (Fig. 2), the ‘Pencersæte’ to the west, their heartland being the valley of the River Penk, and the ‘Tomsæte’ to the east, focused on the valley of the River Tame. The ‘Pencersæte’ took their name from a hill or barrow near Penkridge (British **penno-* ‘head, end’ and OBr. *cruco* ‘hill, mound, tumulus’), while the ‘Tomsæte’ were named after the River Tame (perhaps Br. ‘dark river’). Between these two groups lay the upland, an area of Triassic sandstones often overlain by glacial drift which, with the stony Pebble Beds that underlie Cannock Chase and the area east of Aldridge, give rise to particularly infertile soils (more fertile sandstones occur to the east in the Lichfield region and boulder clays to the west). The meeting point of the ‘Pencersæte’ and ‘Tomsæte’, as recorded in a north Worcestershire charter (Sawyer 1968, S 1272; Hooke 1990, 135–42) lay on the Birmingham Plateau, almost due south of the find-spot.

It is not clear whether any barrow or tumulus once marked the find-spot but some feature appears to have caused a late 19th-century hedge and/or ditch boundary to swerve away from it (Dean, Hooke, and Jones 2010). Certainly there were other tumuli in the area: to the east Muckley Corner on the Watling Street may be *mycel hlaw* ‘great tumulus’ or perhaps ‘Mucca’s tumulus’, while Catshill in Ogleigh was recorded in the 13th century as *Catteslowe*, meaning either ‘Catta’s’ or ‘cat’s tumulus’. Knave’s Castle beside the Watling Street some 1 mile (1½ km) to the west of the find-spot has also been interpreted as a tumulus despite this being doubtful.

BURIAL OF THE HOARD

Until all of the objects have been thoroughly examined, little can be said about the exact date of the hoard, the origin of the objects, or the reason for the hoard’s burial in this locality. Indeed, it may never be possible to answer all these questions. Various scenarios have been proposed.

Firstly, the hoard site lay upon a hillock beside the Watling Street. The material was heavy – a bag of gold objects, collected from a battle or battles, which may have had to be hurriedly buried by someone or some people fleeing along this road, placed in a location at the end of a low ridge that might be recognisable for future retrieval – something that was evidently never possible. The material, however, was of a selective nature with military fittings such as buckles conspicuously absent.

Secondly, does the hoard represent the ritual burial of a trophy hoard, perhaps incorporating some pre-Christian belief? It is known that paganism survived in the region very late. This is evidenced by a number of place-names referring to Wōden on the South Staffordshire Plateau: Wednesbury (*Wadnesberie* in 1086) and Wednesfield (*Wodnesfeld* in 996) refer to the name of this god, the first compounded with OE *burh* ‘fortification’ and the second with OE *feld* ‘open land’. Although Christianity was gaining ground in the 7th century, it is known that Penda, king of Mercia, remained pagan until the time of his death in 655. No human remains accompanied the hoard and most items were mainly of gold, whose burial might represent a ritual which echoed that in the poem *Beowulf* after the death of the hero; this is a poem thought to have been composed in Mercia sometime in the 9th century but one perhaps containing older pre-Christian material. In a barrow deliberately constructed for the purpose were laid the objects which had been taken from another barrow protected by a dragon; although *Beowulf* had killed the dragon he was himself mortally wounded:

Hi on beorg dydon	beg ond siglu,
eall swylce hyrsta,	swylce on horded ær
niðhedige men	genumen hæfdon;
forleton eorla gestreon	eorðan healðan,
gold on greote,	þær hit nu gen lifað
eldum swa unnyt	swa hit æror wæs.

In the barrow they placed rings and brooches, and all such trappings as men disposed to strife had earlier taken from the hoard; they let the earth keep the warriors’ treasure, gold in the dust, where it still remains now, as useless to men as it was before (*Beowulf* = Swanton 1978, 184).

Such a burial of ‘ill-gotten’ goods could have been carried out at the death of a Mercian warlord. One is reminded that the great Mercian warlord Penda died in battle in 655 and there is no record of his body having ever been found.

A third scenario might link the hoard of mainly gold objects with the neighbouring estate of Hammerwich, if its name is derived from OE *hamor* ‘hammer’ and so perhaps suggesting a metal-working site in the vicinity; no such site, however, has been located (see below). Until more is known about the hoard’s date and origin, however, all of these suggestions remain entirely speculative. At present scholars are considering, largely upon the evidence of the inscription, a date around the early 8th century for the hoard. Particularly striking is the closeness of the decoration on the presumed cheek-piece of a helmet to that found on an early 7th-century helmet from the royal burial ground of Sutton Hoo in East Anglia (Leahy and Bland 2009, 22–5).

THE HISTORICAL BACKGROUND

The 7th and 8th centuries were a period of considerable unrest in Anglo-Saxon England and Penda, a Mercian warlord and later king, who remained heathen throughout his life, was intent on aggressively extending his kingdom. His armies are said to have killed the East Anglian king Sigeberht c. 635 but his main enemy was the previously dominant Northumbrian kingdom. He killed their king, Edwin, in a battle in which the Welsh were his allies at Hatfield Chase in 633 and then killed Edwin’s successor, Oswald, in a battle at *Maserfeld* (at or near Oswestry) in 642. He continued to raid deep into Northumbrian territory, attacking the royal fortress at Bamburgh in the early 650s (Sherley-Price 1968, 167 = Bede, Book III, chapter 16) and by that date he was probably overlord of the southern English (Williams, Smyth, and Kirby 1991, 203–4). He himself was to die in battle against the Northumbrians at *Winwæd*, a lost location near Leeds (on the eve of this battle, his ally, Cadafael of Gwynedd, is said to have slipped away). Penda’s successor Wulfhere re-established the supremacy of Mercia south of the Humber, but in spite of success in conquering the Isle of Wight he died a year later shortly after invading Northumbria c. 674 and it was left to another of Penda’s sons, Æthelred, to bring Northumbrian supremacy to an end. Merian supremacy faded in the mid 8th century under Æthelbald, who was murdered by one of his own warband, but was recovered, even more strongly, by Offa who became king in 757.

These are not the only battles recorded in Mercia in this troubled period, for Welsh literary sources (a poem, the *Marwnad Cynddylan*) refer to an attack upon *Caer Luitcoed* (near Lichfield) by the men of Powys in the reign of Cynddylan sometime in the mid 7th century, a raid in which they are said to have carried off ‘extreme booty’ (which included 1,500 cattle and (probably) five herds of swine), much of the battle-train’s moveable wealth:

Maured gymined mawr ysgafael
y rhag Caer Luitcoed neus dug moriael
Pymtheccant muhyn a phum gwriael

‘The greatness of swordplay – great booty –
before Lichfield Morfael took it:
fifteen-hundred head of cattle and five ?.... (Rowland 1990, 176–7, 398–402).

Moreover, the book-holding monks there could not offer protection (this interpretation depends upon the translation of the poem). This account has traditionally been interpreted as an attack by the men of Powys under one Morfael during the leadership of Cynddylan on monks established in the vicinity of Lichfield (Rowland 1990, 132–4). *Letocetum* was the name of the small Roman town and fort at Wall. The name may have referred to the district, rather than to either the site of the Roman town or a settlement at Lichfield, perhaps as a forest name applied to an extensive area of woodland stretching from Wall to Lichfield (Gelling 1978, 57). Several scholars have suggested that the monks were actually located in the vicinity, perhaps at Wall rather than at Lichfield, perhaps as a surviving Christian community. There is evidence for Christianity here in late Romano-British times with a Chi-Rho symbol found on a bronze bowl and a stone fragment with a carved cross (Gould 1993, 4), but the site of the monastery remains unknown and nothing has been found archaeologically to site it at Wall. Evidence of early Anglo-Saxon occupation has also now been found at Lichfield, pre-dating the establishment of a see there between 666 and 669. The attack upon *Caer Luitcoed* has, however, recently been interpreted anew by Rowland (1990, 133–4), who suggests that the men of Powys were actually supporting Cadwallon of Gwynedd and Penda against a Northumbrian enemy,

the booty being the animals from the Northumbrian army's train. She argues that the monks of the poem were serving the religious needs of the Northumbrian army.

The battles noted here may all be too early for the material found in the hoard but it will be a considerable time before a date can be established.

THE LANDSCAPE OF THE HOARD

The Anglo-Saxon landscape

The upland spine was an area of marginal land which was probably being used as seasonal pasture by estate centres established to the west and east (Fig. 2). The known estate centres to the west include Wednesbury and Wolverhampton (the former a royal manor with dependencies at Bloxwich and Shelfield). According to Domesday Book, the minster that had been founded or re-founded at Wolverhampton in the 10th century by the lady Wulfrun, a Mercian noblewoman, held the vills of Ogle Hay and Hilton in this region, these estates almost interlocking with other vills held by Lichfield in 1086 – Wyrley and Norton Canes. (Tipton is a strange addition to the Lichfield Domesday estates but with no earlier or later linkage known). The Wolverhampton estates are also listed in a spurious foundation charter of the minster (S 1380; Hooke 1983, 64–85) claiming to date from AD 996 (for 994), which lists the estates allegedly acquired by the minster when it was re-established. The document is a forgery and it is Domesday Book that gives the most reliable information of the minster estates, but the charter included those apparently genuine Old English boundary clauses that the monks had in their possession (see Appendix). This region was probably similar at this time to the Wealden dens of south-east England, with little permanent settlement at first. In that region the seasonal pastures seem initially to have been held in common by the people within the various early folk regions, only gradually being acquired by specific manors and acquiring fixed boundaries. At some time in the Anglo-Saxon period the northern boundary of the Hwicce, the Anglo-Saxon kingdom established across Worcestershire, Gloucestershire, and part of Warwickshire, was pushed northwards while land was also lost to the south and south-east (Hooke 1985, 12–18). Bromsgrove in north Worcestershire was a royal manor which acquired dependencies in the south of this region.

Place-name and charter evidence (Fig. 3)

Habitative place-names show a concentration of *tūn* and topographical names in the riverine heartlands of the two folk-groups (the 'Pencesæte' and 'Tomsæte') with other names being more indicative of less developed marginal regions – especially *lēah* meaning 'wood' or 'wood-pasture' (see below). There are also a number of dependent *wīc* settlements. These were settlements with a specialised function but were not necessarily any more than clusters of charcoal workers or herds-men perhaps living and working purely on a seasonal basis. The woods of this region would have provided charcoal to the smiths of Hammerwich and Smethwick, both *wīc* dependencies of Lichfield. While the possibility that Hammerwich derived its name from the OE *hamor* for 'hammer' (rather than OE *hamor* 'hill'), and so signifying metal working, may be intriguing, it does not necessarily indicate a place of importance and there is little indication of a 'productive' site in the sense of a rural market. Only one other significant Anglo-Saxon find has been made within the parish: a gold and garnet pendant found in 2004. The 'two Hammerwiches' of Domesday Book may possibly have been just administrative divisions of the same vill. In the 13th century Hammerwich was a straggling settlement with three recognisable foci: Overton, Netherton, and Middleton (VCH *Staffordshire* XIV, 258–73). Other *wīc* settlements in the immediate area were Bloxwich ('Blocc's *wīc*'), a dependency of Wednesbury in 1086, and Aldridge ('alder *wīc*').

Even the *tūn* settlements here may not have been real village centres – Ogle Hay was originally known as *Hocintune/Ogintune*, probably 'Hocca's or Ocgā's *tūn*' but it was declared waste at the time of Domesday Book and was always referred to later as Ogle Hay ('Ocgā's *lēah*') (below). The site of the original settlement is not known. Other *tūn* settlements in the area included Hilton ('hill *tūn*') and Norton Canes ('north *tūn*' in the 10th century), with Canes possibly from Gains Brook on its southern boundary; the name probably referred to its location north of the Watling Street. Topographical names here include Walsall ('Wahl's *halh*' in the 11th century) – the personal name possibly indicating a Briton – which was probably an appendage of Wednesbury; Pelsall ('Peolh's *halh*'), lying between two streams; and Cannock (*Chenet* in 1086, derived from Welsh *cnwc* 'hill' or OE *cnocc* 'hill'). Shenstone (*Seneste* in 1086), is unexplained – it may have been 'beautiful stone', or 'stone' with a personal name.

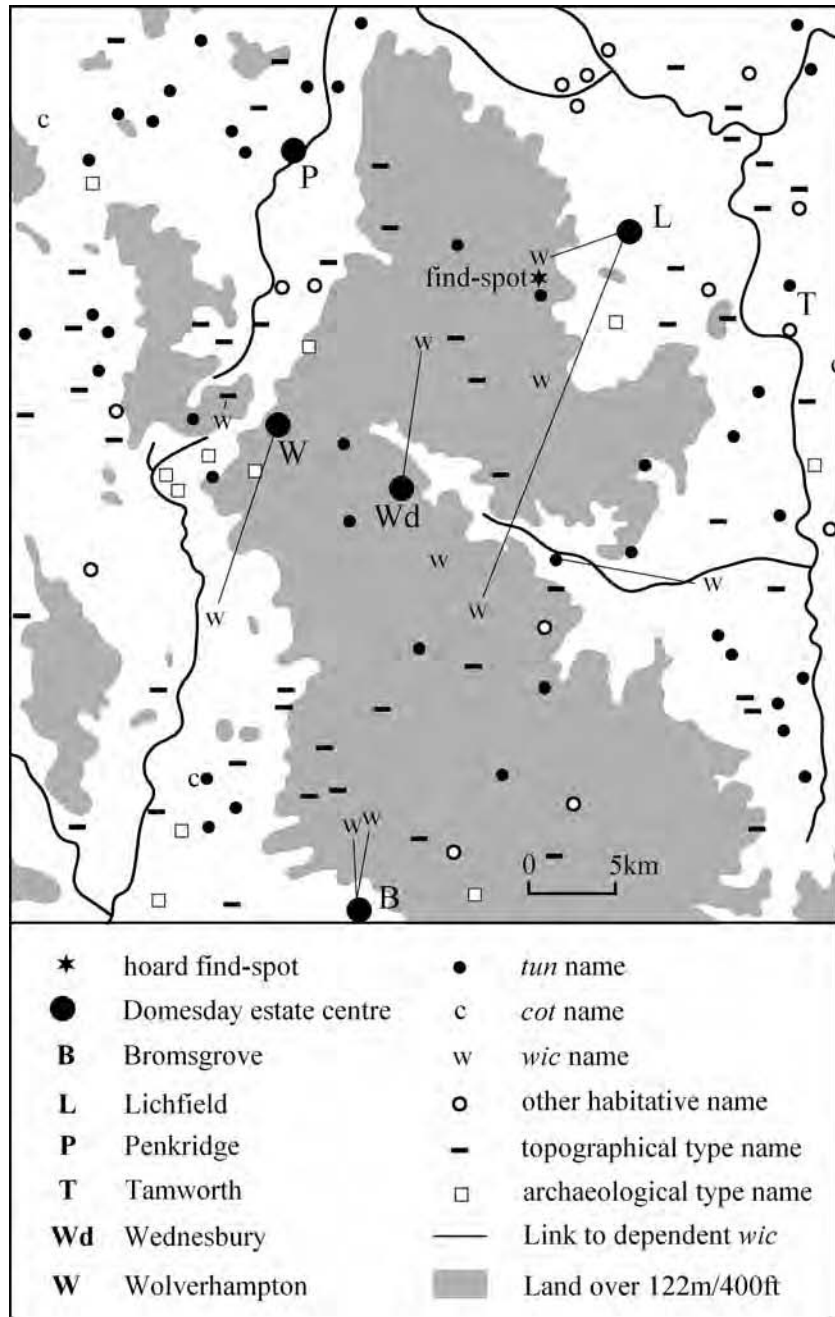


Fig. 3 Habitative place-names in south Staffordshire

To the east of the region one district name stands out. Located beside the Watling Street the Roman centre of *Letocetum* (later Wall) took its name from ‘the grey wood’ (PrW **Luitgēd* or *Lētged*). Lichfield, recorded as *Liccidfeld*, *Anlicciftelda*, *Licidfelth* in pre-Conquest contexts, is ‘the open land at or called *Lyccid*’ (Watts 2004, 372), the *feld* term indicating open land on the edge of a wooded area – presumably the ‘grey (grey-brown) wood’ indicated in the Roman name, which itself may have described a large area. The battle of *Caer Luitcoed* recorded in Welsh literary sources (see above) cannot be accurately identified but obviously took place in this region (Rowland 1990, 132–5, 176–7).

The real nature of the area is more clearly indicated by the distribution of the OE *lēah* term, implying a kind of open woodland landscape used mainly as wood-pasture (Fig. 4). The term was readily applied to the settlements established and scattered across such a region and *Ogintune* became known as *Oggeleye* by the 12th century; and Wyrley to the west was ‘bog-myrtle *lēah*’ (myrtle was used to flavour ale and also to repel moths and fleas). Throughout the region there are references

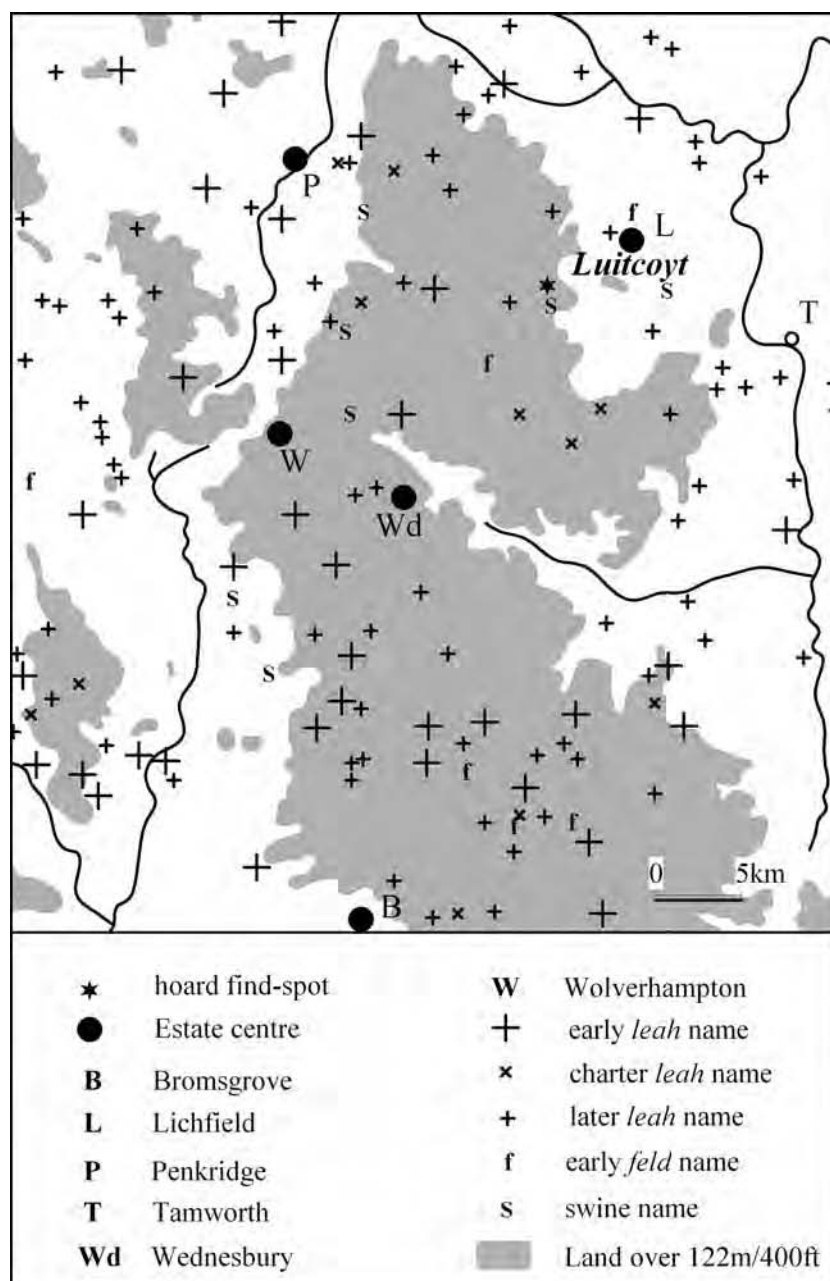


Fig. 4 Woodland names in south Staffordshire

to pigs in charters and place-names, pigs being the main animals pastured in such areas taken into the woods in late summer and autumn to forage on acorns. Swinfen (*Swinescho* in 1203), some 2½ miles (4 km) to the south-east of Lichfield, is 'swine wood', while earlier references to swine occur in the charter boundary clauses: swine folds on the boundaries of Ogley Hay and Wednesfield and a mast oak on the boundary of Hatherton (all in the Wolverhampton charter noted above). Hunting is also suggested in the area at an early date. Another of the Wolverhampton boundary clauses describes an estate at Hatherton to the north-west of Ogley on the west side of the forest, and also refers to *pam hagan heies* 'the hedge of the enclosure', a *haga* being (outside towns) an enclosure for capturing or retaining deer (Hooke 1983, 78–81).

It is the boundary clauses attached to the forged so-called Wolverhampton 'foundation charter' that tell us so much about the early medieval landscape. They indicate three routeways crossing south Staffordshire: Watling Street; the road from Wolverhampton to Ogley, beginning as a made-up 'street' but crossing Pelsall as a 'hunter's path'; and, probably, the road running south-east from the Watling Street towards the Roman Ryknield Street. The hoard site appears to have lain within

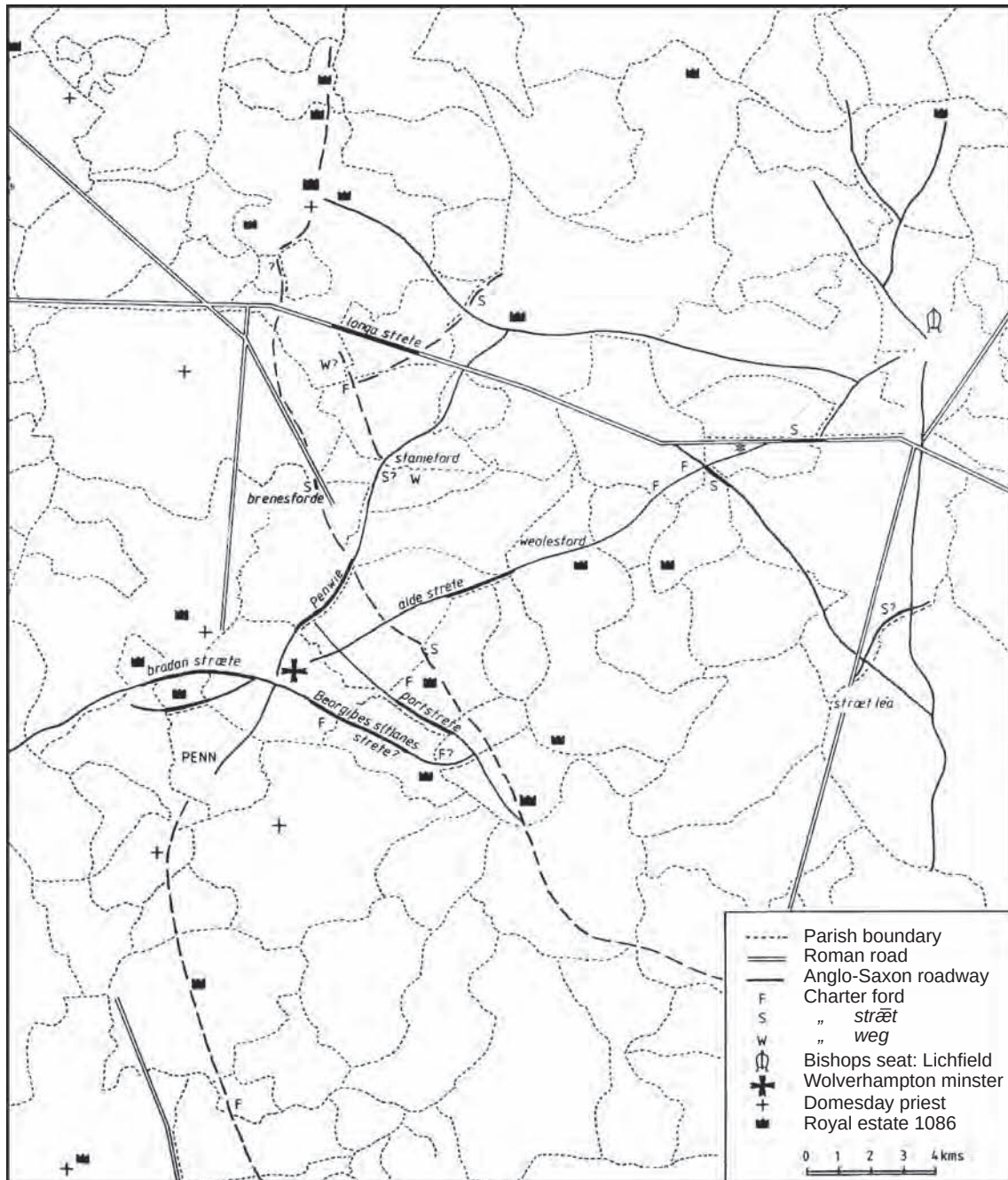


Fig. 5 South Staffordshire charter routeways

a triangle of roads but these cannot all be dated (Fig. 5), although it lay within the extra-parochial area of Ogley Hay, now part of the parish of Hammerwich.

Some of the charter boundary landmarks of Ogley Hay are shown on Fig. 7 (Hooke 1983, 76–8; see also Appendix). The northern boundary followed the Watling Street and a further road, perhaps the old Chester road, formed part of the western boundary. Later sources suggest that another route-way crossed the Watling Street near the hoard find-spot but the origins of this cannot be dated. The southern boundary seems to have passed through sparsely settled countryside, the boundary clause noting the ‘great alders’ and a fen in the south-eastern part where several streams including the Crane Brook run down towards the Black Brook. A swine-fold lay near the fen. Further west after a hedgerow was the ‘black *lēah*’, an area of woodland or wood-pasture. The wooded nature of the area is further revealed by another boundary clause describing an estate a short distance away to the south-west. Not only did the road from Wolverhampton approaching the Watling Street in Ogley

Hay diminish from being an ‘old street’ where it crossed the eastern boundary of Wednesfield to a ‘hunter’s track’ where it crossed that of Pelsall but ‘the wallowing-place of the hart’ lay close by the latter.

The later landscape

After the Norman Conquest the whole of this region became royal forest – primarily a royal hunting ground but one that was also pastured by the tenants of the surrounding communities. This helped to keep the woods open and made hunting, whether on foot or horseback, easier. Most of the core of Cannock Forest was to be given to the bishop of Lichfield, thus becoming a private Chase (Cannock Chase), while Sutton Chase was given to the earls of Warwick. The hays of the forest (Fig. 6), however, continued to be maintained by the royal officials throughout the middle ages (Hooke in prep.).

The upland spine remained a sparsely populated region, including the area of Ogley Hay. Indeed, travellers along the Watling Street in the late 17th century were still afraid to pass this way and Knaves Castle, a mile or so west of the hoard spot and a site first recorded in the 14th century (Horovitz 2005), had a reputation, according to Plot (1686), of being a place where watch was kept here to guard travellers crossing the heath (formerly wooded) – presumably from highwaymen and the like. Knave’s Castle was a raised hillock beside the road but, in spite of being variously described as a possible tumulus or even a moated site, nothing unnatural was observed during road-widening in 1971 (WM HER 2664) and it was then thought that the mound might be natural. Nevertheless, Plot’s story indicates how little the nature of this area changed over hundreds of years.

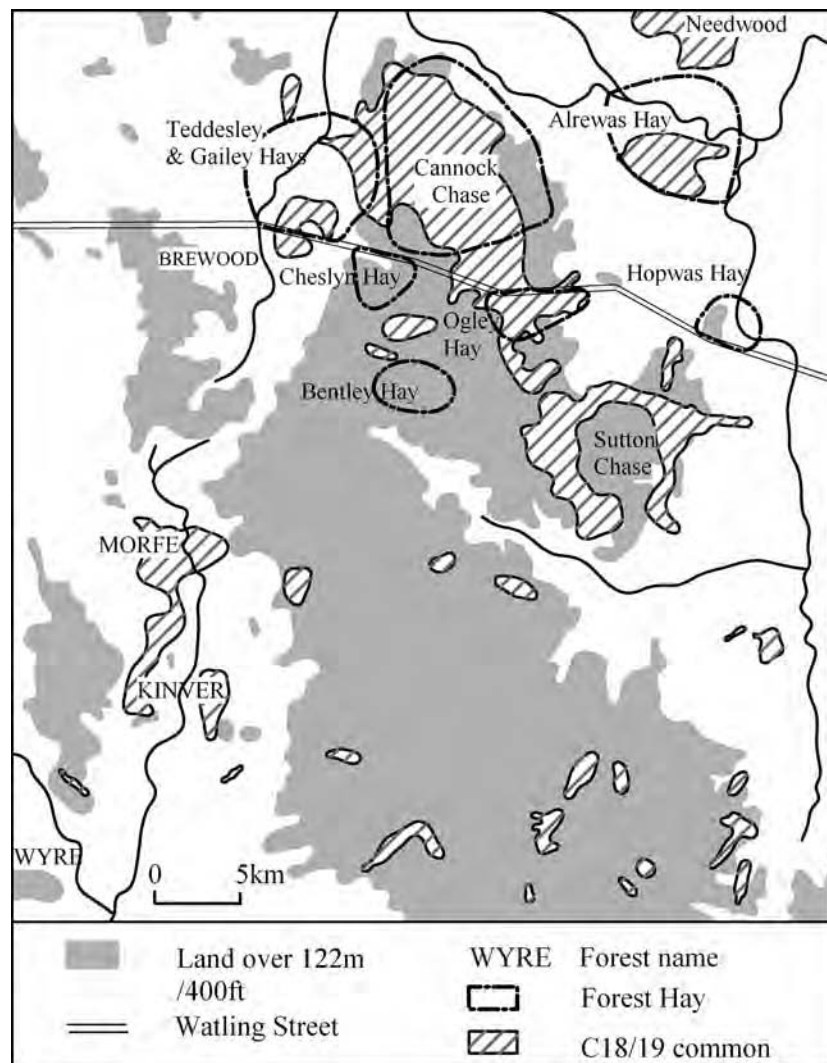


Fig. 6 The remaining hays of Cannock forest and later surviving commons

The hays were the last remnants of the forest. Detailed proceedings of the forest courts show how little the landscape was to change – Ogley Hay was noted for its oaks in the 13th century and there were the usual presentments for illegally felling trees here or the illegal poaching of venison, sometimes by the foresters themselves or by local manorial lords. Assarts for cultivation had been allowed in some parts of Cannock Forest but this does not seem to have been a prevalent practice in Ogley. A boundary of the hay of Ogley Hay survives from 1300 (Wrottesley 1884, 177) but the western boundary is as difficult to follow as that of the earlier charter. These bounds also note a lost *Prestwode* ('priest's wood') which 19th-century Shenstone field-names reveal as lying on the southern side of Watling Street at the eastern end of Ogley Hay (the name was evidently not uncommon: Horovitz 2005, 445; Staffs Record Office, QRDc/76) (Fig. 7). Bull Moor was another named area of marshy land near here and probably the place where a stag was killed by the forester in 1316 (Birrell 1999, 200) – 'Boar's Dean' was another field-name in the vicinity, probably referring to the hunting of this animal. *Cleyhungermore* ('Clayhanger marsh') is named on the 1300 western boundary. Apart from the *tūn* settlement of Wolverhampton's dependency of Hilton, the impression continues to be that of a lightly-settled area throughout the middle ages. The immediate locality remained unenclosed waste with no field-names recorded even in the middle of the 19th century.

Rabbit warrens were established in the region by landowners in the 16th and 17th centuries, much to the dismay of tenants with grazing rights. One was the Old Warren near Catshill, perhaps the forerunner of that located on the heath in Ogley Hay as Warrenhouse Farm by 1838: this seems to have been the lodge shown as 'Hogley Lodge' on Yates' map of 1775 and is likely to have been a warrener's lodge, built for the occupier to manage the rabbit warren. Another rabbit warren was established in 1717 at Lamb's Lodge in Hammerwich, upon the common in the west of the parish, again shown on Yates's map. Destroyed by local people, it had been restocked in 1753. Full enclosure was pushed through here only in the 18th and 19th centuries. (Figure 7 shows the commons surviving

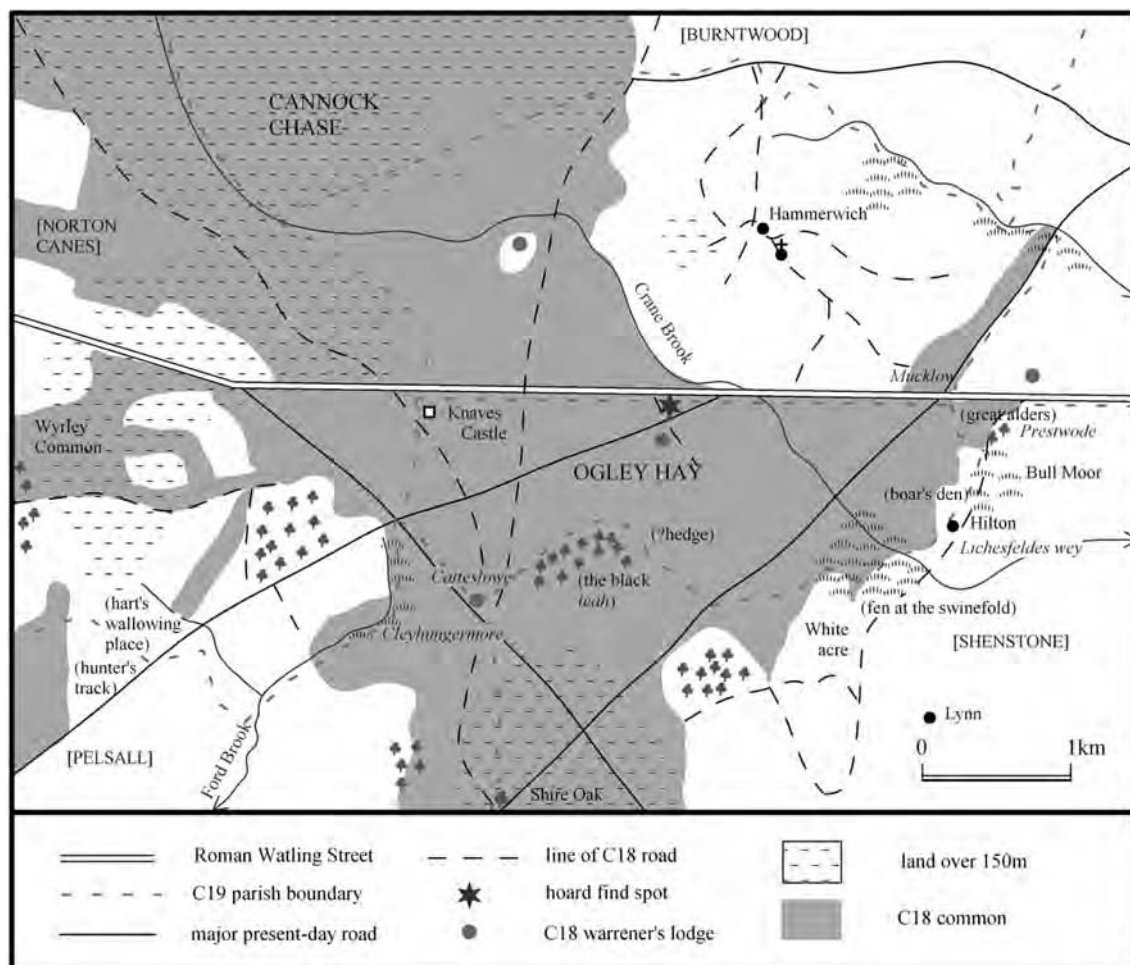


Fig. 7 Ogley Hay and Hammerwich: minor names and 18th- and 19th-century common

at that time.) In Ogley, it was in 1838 that most access roads onto the common were stopped up, the closures leading to local riots. Perhaps this continued land use as woodland and heath used mainly for pasture was what led to the survival of the hoard (Hooke in prep.).

CONCLUSIONS

The region around the hoard find-spot was obviously a marginal area. Why, then, was the hoard buried in this location? The answer has not yet emerged. From a landscape point of view, possibilities for pollen analysis may confirm the suggestions made here for the nature of the local environment at the time but the medieval and later environmental character must surely have safeguarded the site from destruction until its recent discovery.

APPENDIX

The Ogley Hay Anglo-Saxon charter (Sawyer 1968, S 1380)

This document allegedly confirming a grant by Wulfrun to the ‘monastery’ at Wolverhampton, incorporates apparently reliable pre-Conquest boundary clauses. It is reproduced in Dugdale’s *Monasticon Anglicanum* (1846), VI, 1443–46 (no.1). One of these sets of bounds refers to 1 hide of land at *Ocgintun/Ogintune*:

This beoþ ða land ymere into Ogintune. erest on ða greata alres. efter ða more on Wassawillan. of ða ... on ðe dic. efter ðare dic on ðat fen. et hare suinsete þet on þone heig. efter þan heie þet forþ richte on blaca leige. on sa leie suþ forte eft on þe ... efter strete on þane ford. efter þa broce on-gea streame on þa dic. efter heredic ðet on þes ford on þone broc. efter broce on-gea streame þat on ... on ge stret efter strete þat on þa dic. efter dice þat eft in þa greata alres.

OS map 1:25,000 SK 00

1. ‘First to the great alders’;
2. ‘following the marsh to the spring of the swamp’ [the marsh is later known as Bull Moor, lying to the south of Bull Moor Lane in Shenstone];
3. ‘from the ... to the dyke’ [an artificially straightened headwater stream of the Crane Brook];
4. ‘following the dyke to the fen at the swine-fold’ [the fen lay along another small headwater stream of the Crane Brook, an area later known in Shenstone as ‘Rushy Hay’];
5. ‘then to the hedge’;
6. ‘following the hedge then straight on to the black wood’ [the black wood was probably that shown on Yates’ map of 1775 which lay in Shenstone either side of Carter’s Field Lane, a remnant of which survived as Sandhills Coppice];
7. ‘from the wood southwards again to the ...’ [*on* is here a mistake for *of* and the missing landmark is probably ‘the road’ which follows; the boundary is actually running south-westwards];
8. ‘following the road to the ford’ [the boundary here may meet and run along the Chester Road (the present A452) but drainage has been altered by canal construction. A later set of bounds for the forest hay of Ogley in 1300 appears to take the western boundary further to the west of its 19th-century line along the road through Brownhills (Wrottesley 1884, 177). Running in the opposite direction (i.e. southwards), this description of the boundary from Watling Street goes along a stream called *Russisiche* (‘rushy watercourse’); crosses the watercourse at *Erchenebrug* below *Cleyhunger* (perhaps OE *brygc*, ME *brigge* ‘bridge’) and so on to *Cleyhungermore* (‘Clayhanger marsh’), which lay along a headwater stream of the Ford Brook and was probably more extensive then than in later periods. It followed the stream as far as *Wirleyesty* below *Cattesslowe* (probably ‘the path – OE *stīg* ‘path, road’ – to Wyrley below Catshill’ – Catshill on the Chester Road, now part of Brownhills) and as far as the *Blakestret* (the Blake Street running from near Barr Beacon to Catshill and through Ogley Hay to the Watling Street and onto Hednesford) (Hooke in prep.).
9. ‘following the brook against the stream to the dyke’;
10. ‘following the dyke then to the ford’ [could this be the *Erchenebrug* of the 1300 survey?];
11. ‘to the brook’ [perhaps *Russisiche* recorded in 1300];
12. ‘following the brook against the stream then to ...ge road (street)’ [this is the Watling Street, recorded as *Wætlingestræt* in AD 880: Ekwall 1960, 501];

13. 'following the road then to the dyke';
14. 'following the dyke then again to the great alders' [the dyke appears to have run alongside an area of later common land south of Muckley Corner].

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MANOR FARM, WALL, STAFFORDSHIRE: AN ARCHAEOLOGICAL WATCHING BRIEF 2003

JOHN HALSTED

SUMMARY

In September 2003 an archaeological watching brief was undertaken by Birmingham Archaeology at a proposed farm composting site at Manor Farm, Wall, Staffordshire. The site lies adjacent to the Roman road, Ryknild Street, and c 1.5 km east of the Romano-British town of Wall, itself on Roman Watling Street. Recent excavations on the Birmingham Northern Relief Road had also produced Romano-British archaeology. Therefore, although no known archaeology had previously been identified on the site, the potential for archaeological remains was considered strong enough to warrant a watching brief.

No Romano-British archaeology was recorded, but a discreet group of features filled with heat-fractured stone was excavated, and produced a Middle–Late Iron Age radiocarbon date. This, together with the morphology of the feature group contrasts with burnt mound sites found elsewhere in the West Midlands, although parallels for the use of burnt stone in this period can be found in Staffordshire.

INTRODUCTION

The archaeological watching brief at Manor Farm, Wall, Staffordshire (NGR 411200/306600 and Fig. 1) was undertaken in accordance with a written scheme of investigation prepared by Birmingham Archaeology on behalf of the client, Mr A. J. Ryman, for Staffordshire County Council Historic Environment Team. The watching brief was designed to monitor the removal of topsoil over an area of c 6000m², down to the uppermost archaeological horizon. In the event of encountering archaeological deposits a mitigation strategy was to be negotiated between the curator and the client.

ARCHAEOLOGICAL BACKGROUND

A Roman fort at Wall is thought to have been established around AD 60, c 750m north-west of the junction between the Roman roads, Watling Street and Ryknild Street (Fig. 2; Wardle 2003a, 11). Further phases of the fort may have continued into the 2nd century AD (Jones 1998, 1). A large triple ditched enclosure straddling Watling Street is considered to date from the late 3rd to 4th centuries AD (Wardle 2003a, 12; Jones 1998, 1). Further civilian activity dating from the early to mid 2nd century AD through to activity in the late 2nd and early 3rd centuries AD has been identified to the south-east of the forts to the east of the junction with Ryknild Street (Fig. 2; *ibid* 3). Such activity may suggest that Romano-British occupation extended further north-eastwards into the area of the development site. This potential is highlighted by the recent discovery of a previously unknown Romano-British cemetery to the south-east discovered during the construction of the Birmingham Northern Relief Road (Wardle 2003a, 12).

METHODOLOGY

The area of the proposed composting site was stripped with a toothless ditching bucket and stripped surfaces were protected from being tracked over or driven upon, in accordance with the written scheme of investigation. Possible archaeological features were marked on the ground and recorded on a location plan. Colour and black and white print photographs were also taken during the topsoil stripping.

A mitigation strategy was negotiated on the identification of archaeological features. A second archaeologist was employed to investigate these features while the topsoil strip continued to be monitored. The archaeological features were excavated in selected sections, a 1:20 scale plan and section drawings were produced together with colour and black and white print photos. Bulk samples were taken for the assessment of palaeoenvironmental plant remains, and for radiocarbon dating.

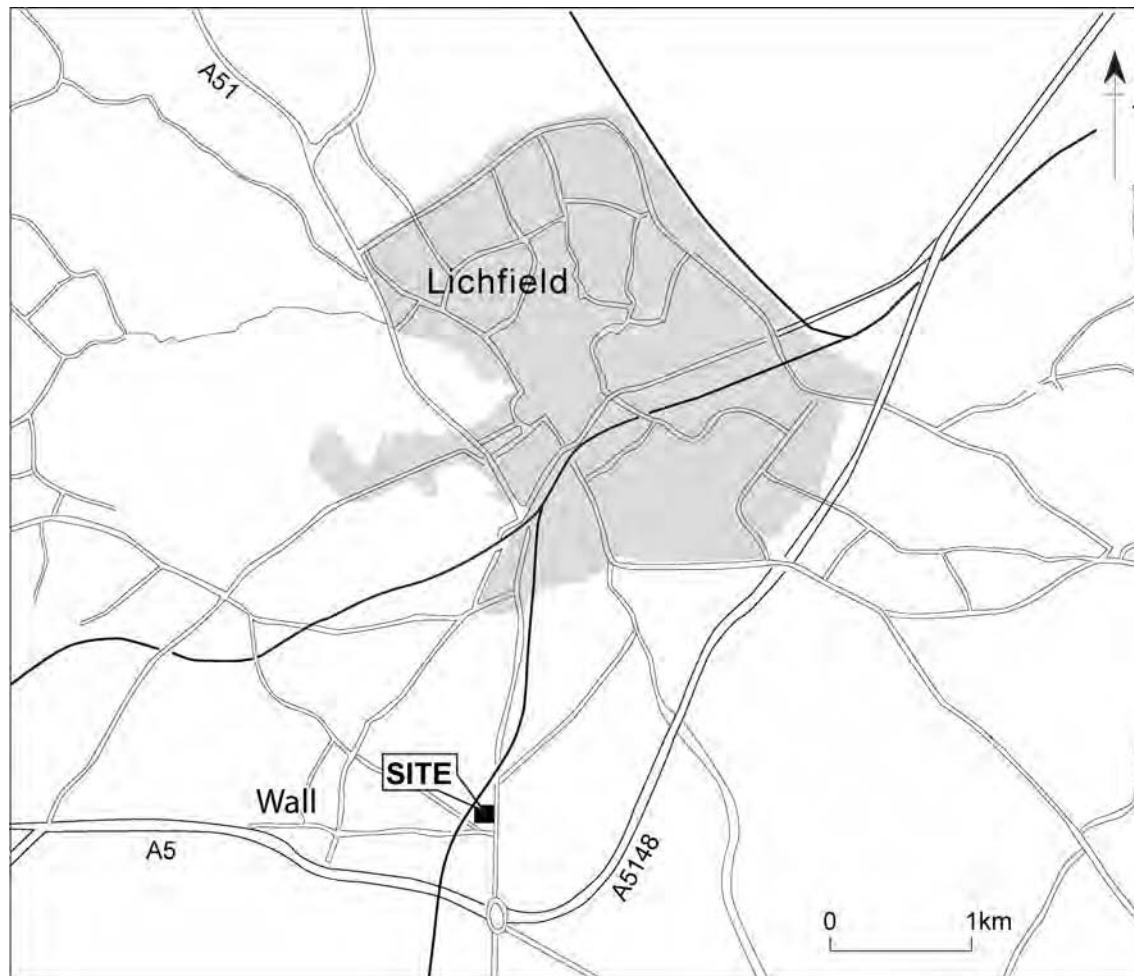


Fig. 1 Site location

ARCHAEOLOGICAL RESULTS

The ploughsoil was removed to a depth of c 0.45m across the site. This horizon (1000) was made up of an orange-brown silty clay, sub-rounded pebbles with occasional brick and tile fragments. The ploughsoil was removed to the upper surface a light brown-orange sandy clay subsoil (1001) with sub-rounded pebbles (Plate 1).

Three archaeological features were identified during the topsoil stripping of the site (Fig. 3). The first feature (F100), was a shallow gully 11.0m in length and 0.2m in depth, orientated north-west to south-east (Fig. 4; Plates 2 and 3). The feature was filled with a light grey-brown silty clay (1002) with charcoal fragments (c 5%) and a large quantity of red, purple and blue-grey angular heat fractured stones (c 25%) 0.03–0.06m in length (Fig. 5; Plate 3). The quantity and density of heat-fractured stone and charcoal diminished towards the north-west and south-east ends of the linear feature. F100 was subdivided into excavated sections numbered F100–F100.03, filled by contexts (1002), (1004), (1006) and (1008).

Two further features (F101) and (F102) were recorded to the west of F100 (Fig. 4). F101 was a shallow sub-circular feature c1.5m in diameter and 0.08m in depth. This feature was filled with a light orange-brown silty clay (1005) with occasional charcoal flecks and a large quantity (c 50%) of heat-fractured stone (Fig. 5; Plate 4). F102m, another shallow sub-circular feature c 1.0m by 1.3m and 0.06m in depth, was filled with a light orange-brown silty clay (1007) and a large quantity (c 50%) of heat-fractured stones (Fig. 5; Plate 5). No archaeological finds were recovered from these features. It is likely that F101 and F102, and therefore F100, have been substantially truncated by modern land-use regimes.

These features are interpreted as the remains of prehistoric settlement activity and are compared with a number of sites in the West Midlands and Britain in the discussion below. A charcoal sample

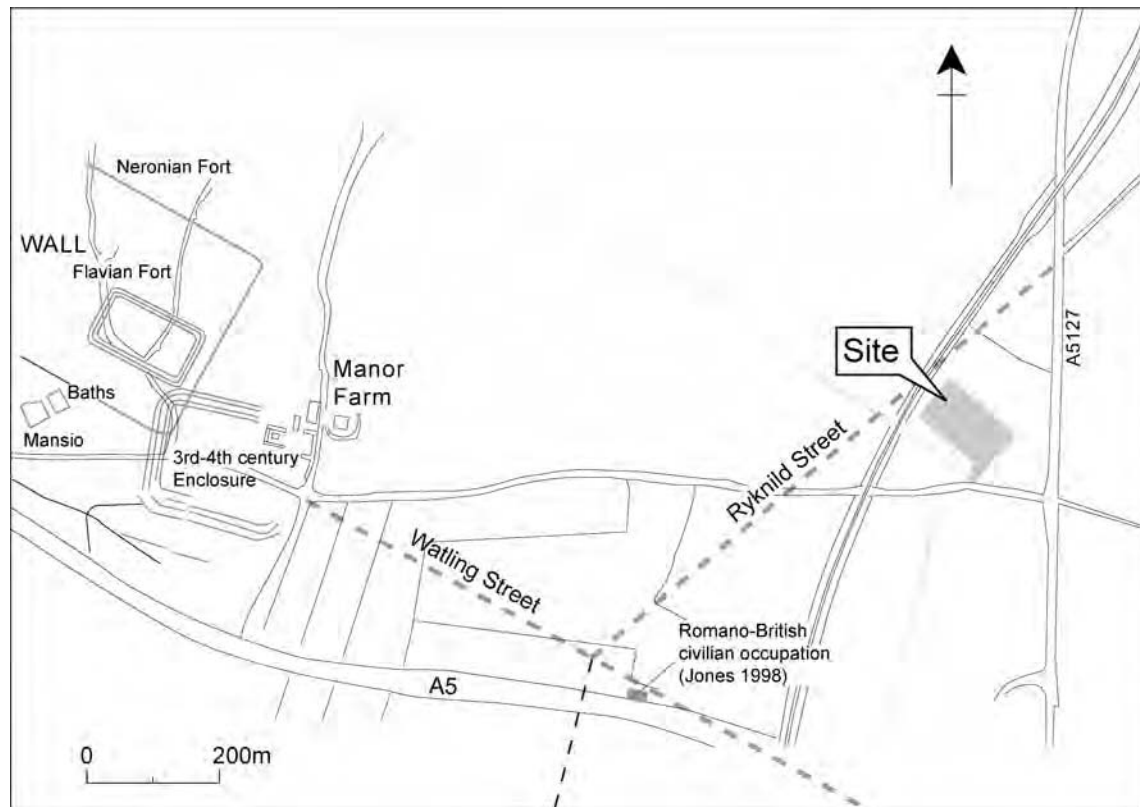


Fig. 2 Position of the excavated area in relation to known Roman sites

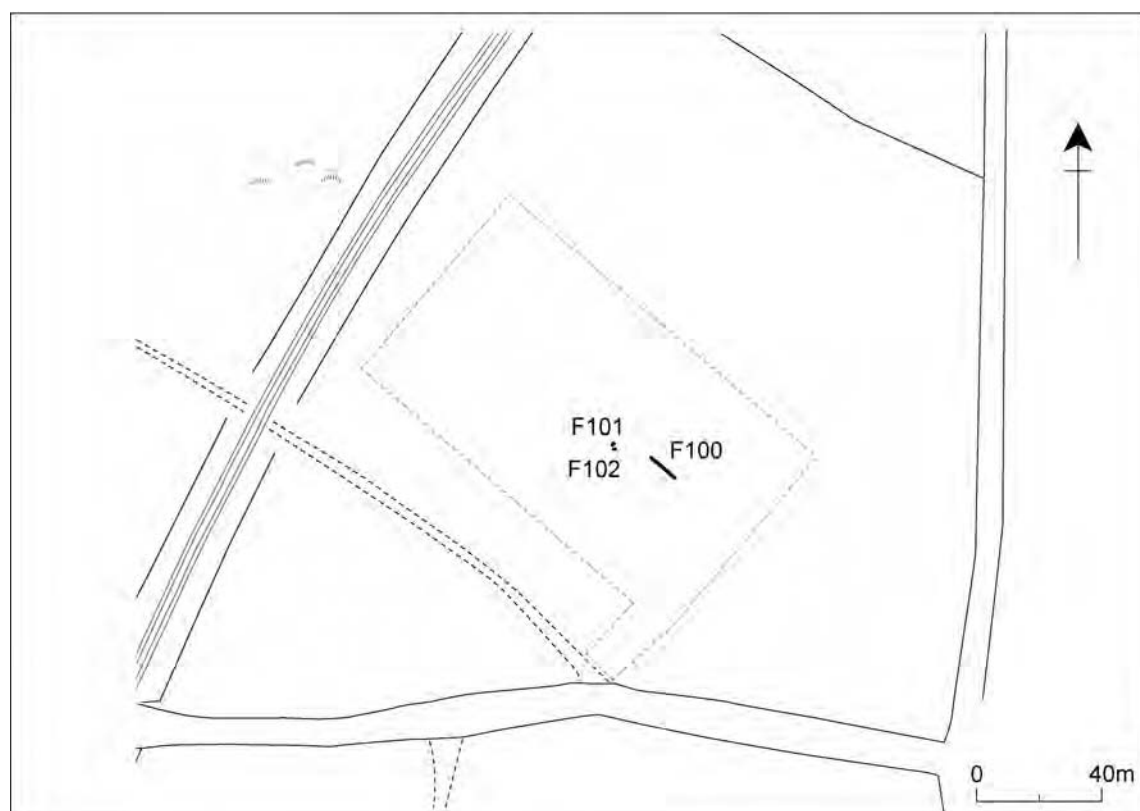


Fig. 3 Location of the principal features within the excavated area

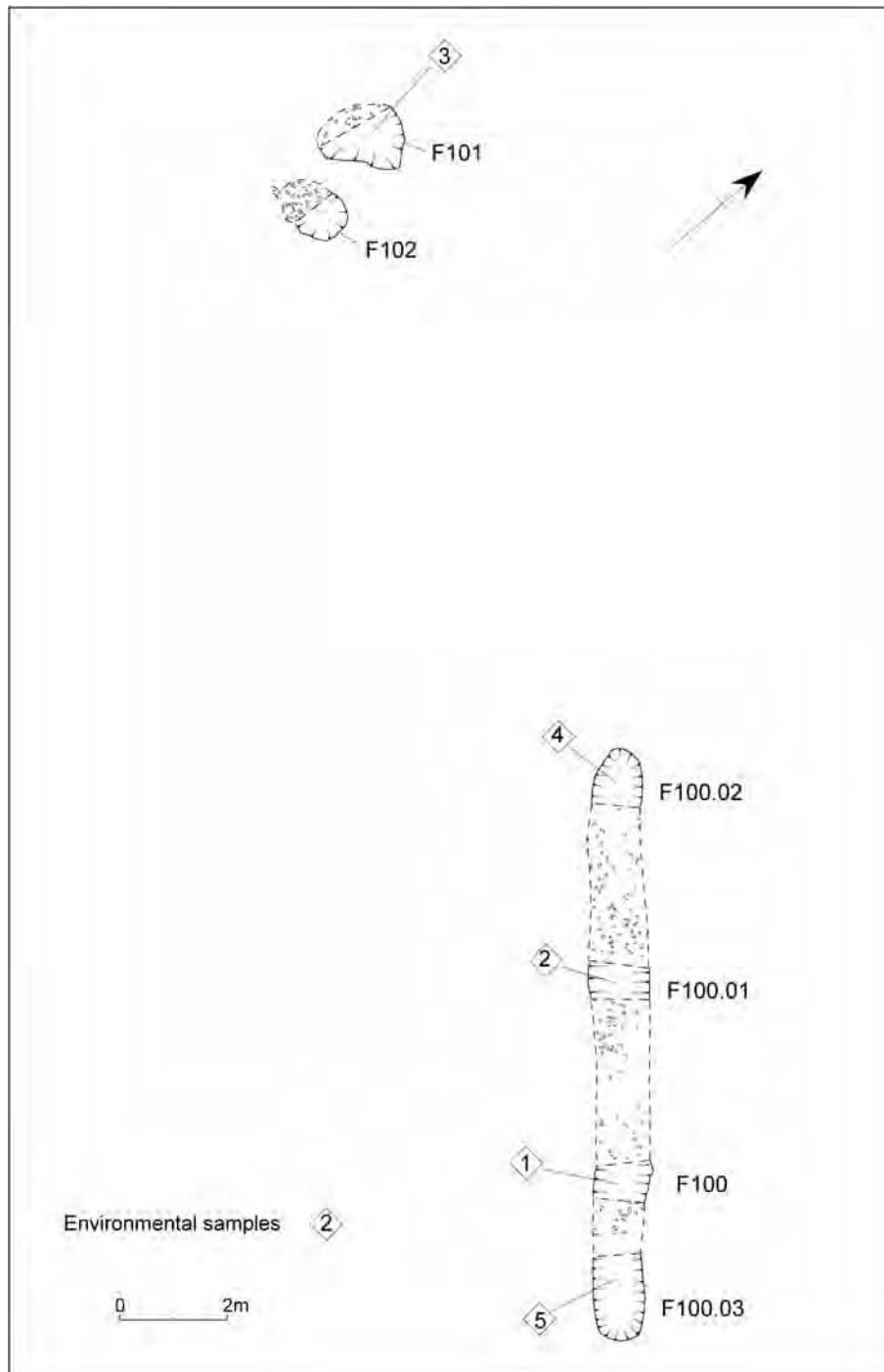


Fig. 4 The excavated features

was chosen (Sample 1, 1002) for radiocarbon dating on the basis of the quantity of charcoal in the sample and the central position within the linear feature of the section F100. The environmental sampling and charcoal processing results are described below.

ENVIRONMENTAL SAMPLING RESULTS *by Wendy Smith*

Five samples were collected for archaeobotanical analysis during the course of the excavation. Four samples were collected from a linear feature (Sample 1, F100, Sample 2, F100.01, Sample 4, F100.02 and Sample 5, F100.03) and the fifth sample was collected from a shallow sub-circular feature F101.

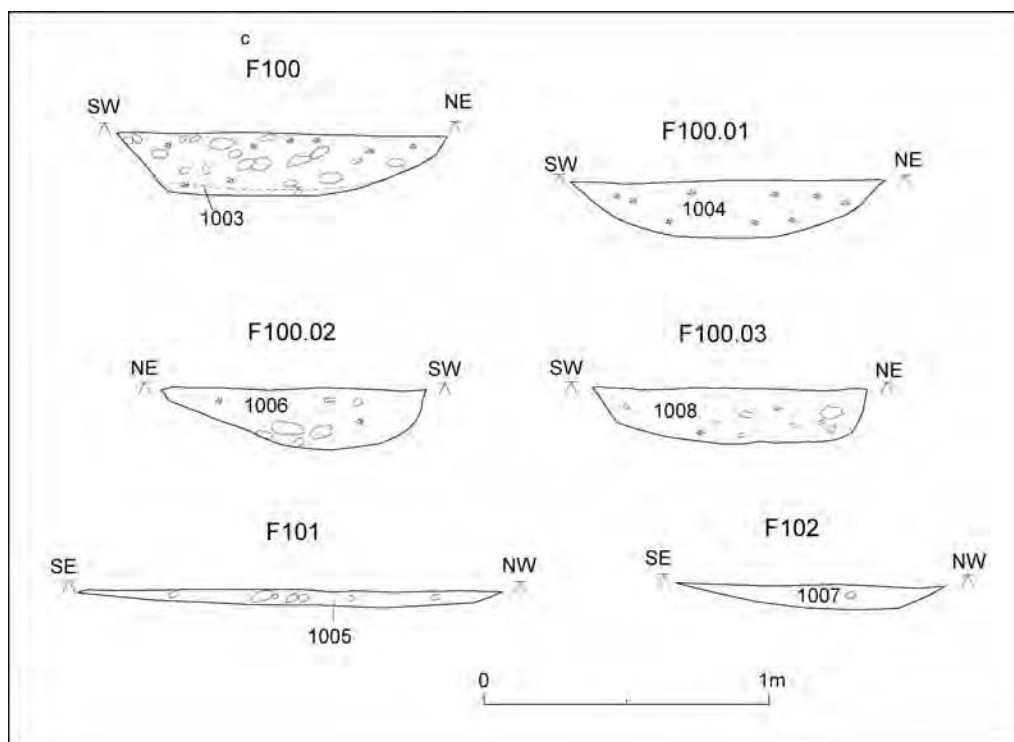


Fig. 5 Sections through the excavated area

This analysis is designed to determine if charred plant remains are present and of interpretable value. In addition, it aims to determine the potential for the charred plant remains to answer the following questions:

- Do any of the plant remains recovered provide information about agricultural practices?
- Do the assemblages recovered provide information about rubbish disposal patterns on site?
- Do any of the plant remains recovered provide information about the wider environment of the site?

Ten-litre samples were processed using the wash over technique. The flots (the material which floats) were sieved to 0.5 mm and were air-dried. The heavy residues (the material which does not float) were not available for analysis and, therefore, the results presented here are based entirely

Table 1 Charred plant remains recovered from Manor Farm, Wall, Staffordshire

Sample Number	1	2	4	
Feature Number	F100	F100.1	F100.02	
Context Number	1002	1004	1006	
Sample Volume (L)	10 L	10 L	10 L	
Flot volume (ml)	20 ml	10 ml	10 ml	
Seeds/ Litre				
LATIN BINOMIAL				COMMON NAME
Triticum sp. – free-threshing grain	-	1	1	Free-threshing wheat
Triticum sp. – free-threshing rachis node	3	2	2	Free-threshing wheat
Indeterminate Cereal/ Large Grass – caryopsis	-	1	1	Indeterminate cereal/ large grass
Indeterminate leaf/ calyx	1	-	-	Indeterminate leaf/ calyx
Indeterminate	5	-	2	Indeterminate
Other biological remains observed				
Charcoal	+	+	+	Charcoal

Scale used for charcoal: + < 10 ml and ++ > 10 ml but < 20 ml.

NOTE: No charred plant remains were observed in samples 3 and 5, but charcoal was scored as + in sample 3 and ++ in sample 5.

on the flots. The author analysed charred plant remains from the flots using a low-power binocular microscope at magnifications between x12 and x40. Comparative material from the author's personal collection was consulted for the analysis.

The results for charred plant remains from the site are presented in Table 1, which also includes a semi-quantitative record of any other environmental remains (bones, molluscs or charcoal) observed during the analysis of this material. Nomenclature for economic plants follows Zohary and Hopf (2000) and nomenclature for indigenous taxa follows Stace (1997).

Only three samples (Samples 1, 2 and 4) contained small quantities of charred plant remains, none of which was of interpretable value. However, the recovery of free-threshing wheat (*Triticum* sp.) grain and rachis nodes in all three of these samples suggests that the features excavated may not be securely prehistoric. Free-threshing wheat would not have occurred in Britain until the first or second millennium AD and, therefore, these deposits are either not prehistoric or are contaminated by material from later periods. All of the samples contained modern root and seeds (namely sedge (*Carex* sp.), goosefoot (*Chenopodium* sp.) and orache (*Atriplex* sp.). This suggests that the deposits are quite near the modern topsoil level and likely to suffer from bioturbation (reworking of deposits by modern insects, rodents, worms, etc.).

The results from this analysis are not of interpretable value but do suggest that the deposits sampled are not securely prehistoric or may be contaminated by material from a later period. The abundance of modern root and seeds in these deposits may also suggest that they are possibly subject to reworking through bioturbation.

CHARCOAL SAMPLE *by Rowena Gale*

A sample of charcoal (Sample 1) was examined in order to identify suitable material for Carbon 14 dating. The charcoal was poorly preserved and contaminated with reddish iron oxide-like deposits. The charcoal was prepared for examination using standard methods (Gale and Cuttler 2000). The wood structure was examined using incident light on a Nikon Labophot-2 compound microscope at magnifications up to x400. The anatomical features were matched to reference slides of modern wood.

Sample <1> [1002] **1 x hazel (*Corylus avellana*), <1g;**
 1 x cf. hazel (*Corylus avellana*), <1g;
 1 x hawthorn/ *Sorbus* group (*pomoideae*), <1g;
 4 x oak (*Quercus* sp.), heartwood and unknown maturity.

The taxa indicated in bold type are suitable for AMS (Accelerator Mass Spectrometry) dating. There was insufficient charcoal for conventional radiocarbon dating. The processed charcoal sample was sent to the Scottish Universities Environmental Research Centre, Glasgow for AMS dating.

RADIOCARBON DATING RESULTS

The charcoal sample from 1002, F100 produced an AMS radiocarbon date of 2140 +/-35 BP (SUERC-2656). This date calibrates to 250–40 BC (at 95.4% probability) and 210–110 BC (at 68.2% probability) using Oxcal V. 3.8 software (Fig. 6).

DISCUSSION

Concentrations of heat-fractured stone are usually represented in the archaeological record of Britain and Ireland by burnt mounds. There are particular concentrations of these features in Shropshire (Ehrenberg 1991, 47–49), the West Midlands (*ibid* 49–50) and several in Staffordshire (Wardle 2003b, 3; Welch 1991). Burnt mounds are distinctive features usually comprising a horse-shoe shaped mound of burnt stone adjacent to a pit or trough (O'Kelly 1954, 127), usually square or rectangular in plan and flat based. The sites are regularly identified adjacent to streams or bogs (*ibid* 106), and a continuous supply of water was a key feature of their function. Excavated sites from the midlands have largely produced radiocarbon dates in the mid-Late Bronze Age c 1500–800 BC (Hodder 1990, 106–7; Hannaford 1999, 73), although their use has been demonstrated from the Early Bronze Age c 2500–1500 BC to the Late Bronze Age c 1150–750 BC (e.g. Kelly 1992, 85–86; Wardle 2003b, 3). Settlement structures and artefacts are rarely associated with burnt mounds,

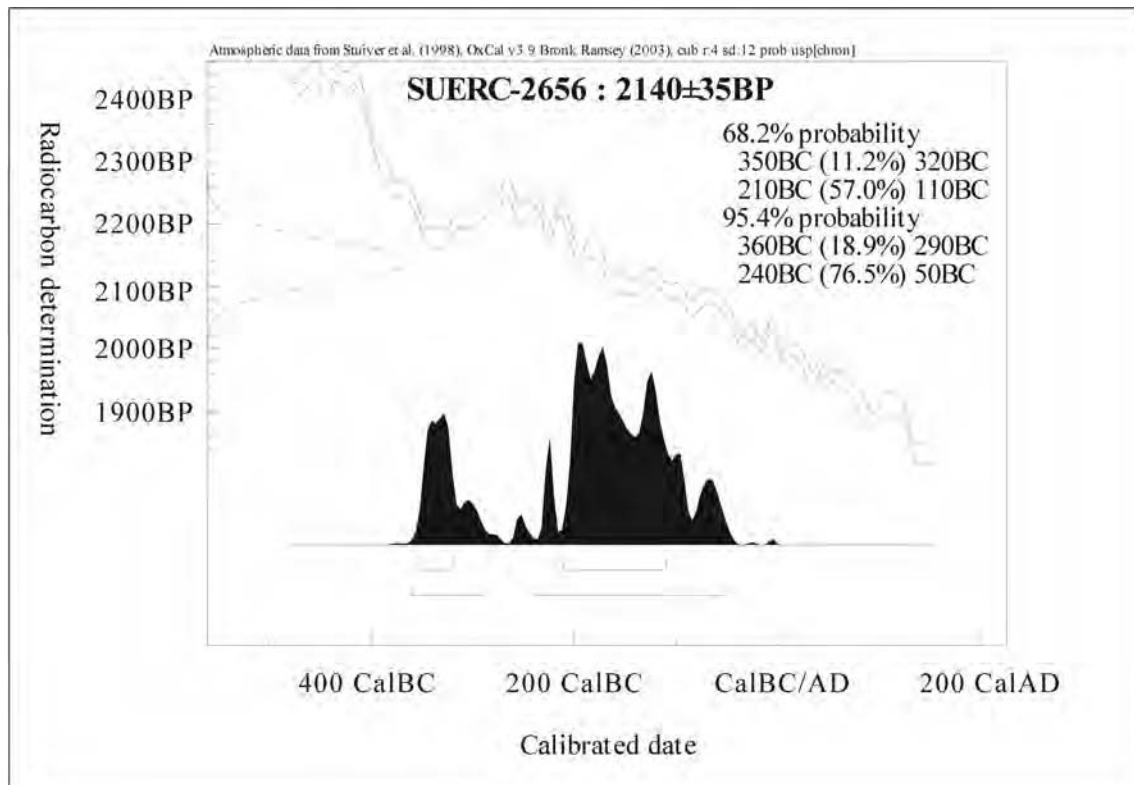


Fig. 6 Calibrated radiocarbon date

which have traditionally been interpreted as cooking sites associated with seasonal hunting forays (O'Kelly 1954, 138). Alternative interpretations have suggested their use as sweat lodges (Barfield and Hodder 1987). Nevertheless, these sites appear to represent episodic settlement or social activity, away from more sustained nodes of residency.

The Middle–Late Iron Age radiocarbon date obtained from the linear burnt stone feature at Wall clearly places it beyond the established date range of burnt mounds in Britain and Ireland. Furthermore, the morphology of the features differs from recorded Bronze Age examples in Britain (the linear feature is far larger in extent than troughs typically associated with burnt mound sites). Unlike burnt mound sites in Britain the feature recorded at Wall is not situated adjacent to an existing watercourse or palaeochannel. However, the presence of land drains across the site alludes to its naturally waterlogged nature, which may suggest that the features were originally in a wet or marshy location.

The accumulation of burnt stone in the features at Wall is unlikely to represent a single episode of use at this location. The stones were not burnt *in situ*, suggesting that the associated features were unrelated to the primary use of the burnt stones. Instead the stones were deposited into the linear feature and two associated pits after heating. The large size of the linear feature suggests that it did not act as a water trough for boiling water in the manner of pits associated with Bronze Age burnt mound sites, and that, instead, the stones were deposited, intentionally or otherwise, into it and the pits subsequent to their primary use.

It is possible that the features excavated at Wall were not isolated within the immediate vicinity. The presence of a further, previously excavated burnt stone filled linear feature at Wall, of comparable dimensions (Barfield 1991, 64), may also be regarded as Middle–Late Iron Age in view of the recent radiocarbon date. The feature was originally regarded as pre-Roman and 'from the earliest level of the site' (*ibid*), although was not associated directly with any artefactual dating evidence.

The Iron Age in Staffordshire is generally an under-researched area of the archaeological record, despite a number of hillforts being present in the county (Wardle 2003b, 4–6). However, developer-funded excavations at Whitemoor Haye adjacent to the River Tame, have recorded settlement enclosures, structures and land division boundaries dating to this period (Coates 2002). The presence of heat-fractured stone together with Middle–Late Iron Age radiocarbon dates calibrating to between

400 and 155BC (Beta-135227) and 320–205 BC (Beta-135226) in a pit alignment at Whitemoor Haye (*ibid* 13–15), further demonstrates the use of heated stone in the Iron Age in Staffordshire.

The pit alignments at Whitemoor Haye have been considered to represent a symbolic boundary between landscape zones (Coates 2002, 82) rather than having a purely utilitarian function. In a wider context, linear stone-filled channels associated with burnt stones have also been identified in Denmark dating to the Bronze Age, again recorded over several hundred metres, although their function is unknown (Barfield pers. comm.). The features at Wall do not form part of any such large-scale boundary. This does not preclude, however, the similar use of burnt stone as a symbolic deposition at a specific place, representing activities associated with its primary use. The location of the features in a potentially waterlogged location in prehistory may represent activities at the limits of a settlement in the Middle–Late Iron Age. It is also possible that the stone-filled features at Wall represent the truncated remains of Iron Age settlement activity, although no associated settlement features, structures or enclosures were present as exemplified at Whitemoor Haye (Coates 2002). The lack of additional associated Iron Age activity at the site at Wall is further emphasised by the large area stripped under controlled conditions and the fact that no artefacts were recovered. It is, therefore, unlikely that the features recorded relate to an associated nucleated settlement site. If such a site existed it must be separated from these features by some distance.

The features excavated at Wall demonstrate the use of burnt stone in contexts separated from core settlement activities beyond the Bronze Age and into the late first millennium BC in Britain. The features demonstrate that not all isolated concentrations of burnt stone are necessarily of Bronze Age date, and that the use of radiocarbon dating of all such features in Staffordshire and the West Midlands is essential. The context of depositions of burnt stone in the Iron Age in the West Midlands in relation to enclosed settlement and agriculture may be the subject of future research in the region.

The fact that no Romano-British archaeology was encountered during the watching Brief demonstrates that the civilian occupation recorded to the southeast of Wall (Jones 1998), does not extend into this area. This may be of use in future interpretations of the development of the Roman town at Wall.

ACKNOWLEDGEMENTS

John Halsted undertook the watching brief, assisted by Sally Radford. Gary Coates and Richard Cuttler managed the project. The report and illustrations were prepared by John Halsted and edited by Richard Cuttler and Mark Hewson. The charred plant remains were analysed by Wendy Smith, Institute of Archaeology and Antiquity, University of Birmingham. The charcoal sample was identified and processed by Rowena Gale, Department of Archaeology, University of Reading. I would like to thank Dr Laurence Barfield, Institute of Archaeology and Antiquity, University of Birmingham, for bringing to my attention the previously excavated burnt stone feature at Wall, and further parallels to the features recorded here. Thanks are also due to Mr Ryman for commissioning the project.

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Plate 1 F100, with burnt stones excavated, looking north-west



Plate 2 F100, looking north-west

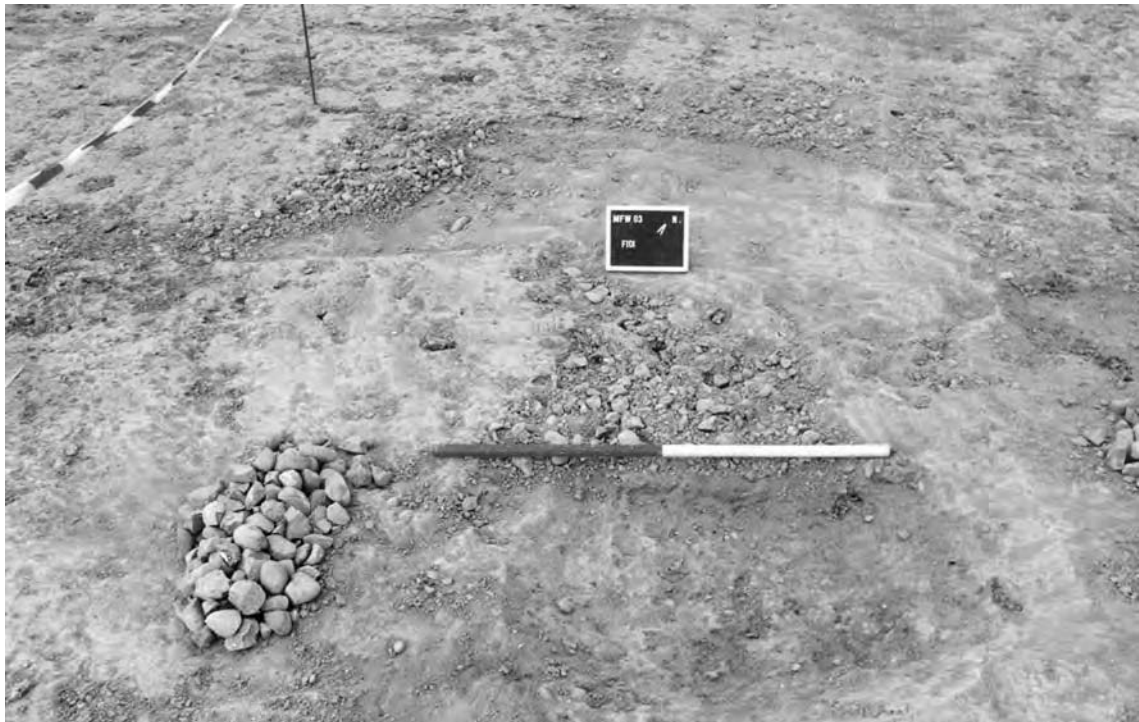


Plate 3 F101, with burnt stones excavated, looking west

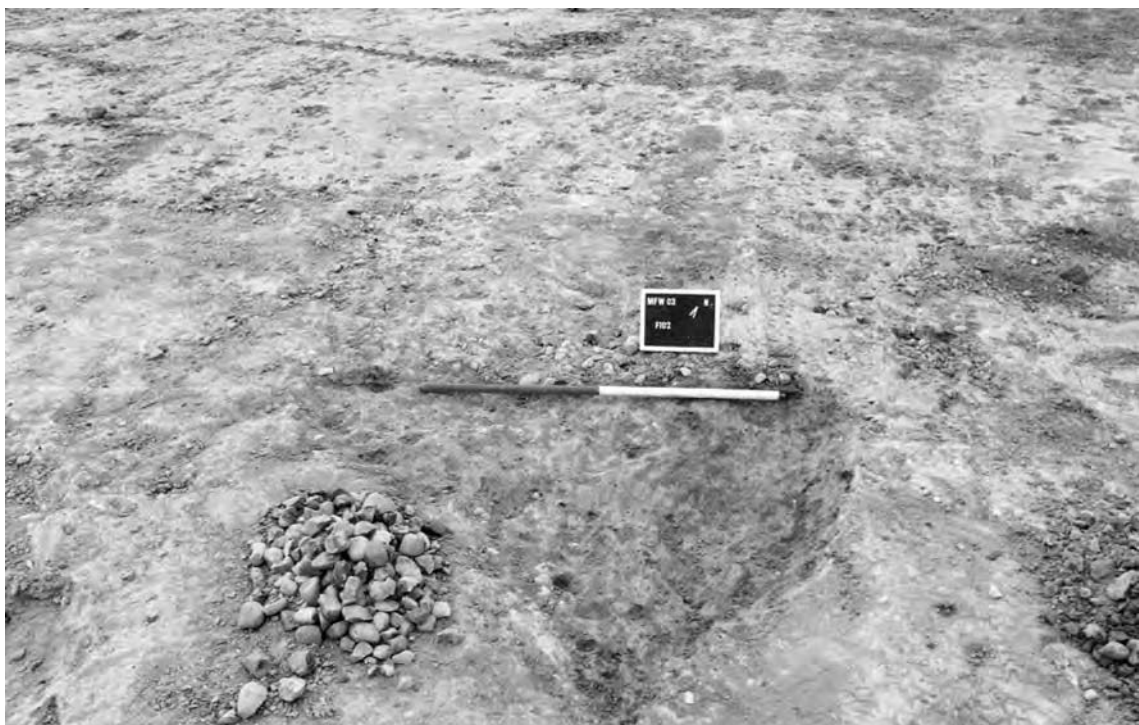


Plate 4 F102, with burnt stones excavated, looking west

ARCHAEOLOGICAL RECORDING AT SHUGBOROUGH PARK, STAFFORDSHIRE 2005

JOHN HALSTED

with contributions by Ann Woodward, James Grieg and Rob Ixer

SUMMARY

Archaeological evaluation and watching brief was undertaken at Shugborough Park, Staffordshire (centred on NGR 399000, 322900) by Birmingham Archaeology, commissioned by Staffordshire County Council, in advance of the construction of a new car park, visitor centre and access road.

The trial trenching recorded a Bronze Age pit, sealed beneath an alluvial deposit in the vicinity of a brook. Further pits were recorded, some of which corresponded with a pit alignment previously recorded by aerial photography. A large enclosure ditch containing a sherd of Romano-British pottery was recorded to the southwest of Shugborough Park Farm.

Two sandstone structures were recorded in association with a large hollow feature visible in the area of the car park, which may have represented a natural feature or a holloway. These features may pre-date the 18th-century landscaped park. A post-medieval brick building was recorded to the west of the walled garden, together with a further brick boundary wall laid on sandstone foundations.

INTRODUCTION

The evaluation and watching brief was undertaken at Shugborough Park, Staffordshire by Birmingham Archaeology (Halsted 2005). The work was commissioned by Staffordshire County Council in advance of the construction of a new visitor building, car park and access road.

Shugborough Park lies c 7km to the east of Stafford (NGR 399000, 322900; Fig. 1) and to the south of the confluence of the Rivers Sow and Trent. The park overlies sand and gravel terrace deposits, with alluvial deposits characterising areas adjacent to the rivers. The area of the evaluation lies at c 80m AOD, to the north of a ridge of higher ground rising to c 130m AOD.

The site is located to the north of the railway line and to the west of the walled garden (Fig. 1) and between this and James Stuart's Triumphal Arch of 1761–7. The Sher Brook lies to the west of the walled garden and runs northwards towards Shugborough Park Farm.

A number of archaeological sites and monuments exist within the Shugborough Estate. The earliest potential features relate to cropmarks identified by aerial photography. These appear to represent possible ring ditches which may date to the Late Neolithic or Early Bronze Age, a pit alignment which may date to the Iron Age, and a rectilinear enclosure which may date to the Iron Age or Romano-British period (Staffordshire Historic Environment Record, Primary Record Number 04612; Fig. 1).

A deserted medieval and post medieval village site (PRN 01649; not illustrated) extends either side of the road approaching the Shugborough Hall, to the northeast of the walled garden area and Park Farm. This village is documented as having been relocated as part of 18th-century improvements to the estate (Staffordshire County Council 2005, 7).

A number of mills and mill ponds (PRN 20791, 20798, 50721; not illustrated) associated both with the village and the Sher Brook also exist within the estate and are also recorded on the map of 1600 (*ibid* 24.). Shugborough Hall itself originated as a medieval moated manor (PRN 00862; not illustrated) enclosed by a diverted section of the River Sow to the north of the present site of the Hall. The location of the present hall appears to date to the late 17th century.

A number of Greek revival style monuments were constructed in the 18th century (PRN 08029, 08025, 08030; not illustrated), and a walled garden and associated cottage (PRN 12803) were constructed in the early 19th century.

AIMS AND METHODS

The evaluation and watching brief were designed to identify any archaeological features lying within the bounds of the proposed development, and to assess the date, character and significance of any such deposits. The evaluation was undertaken in two stages comprising a geophysical survey followed by the excavation of ten trial trenches.

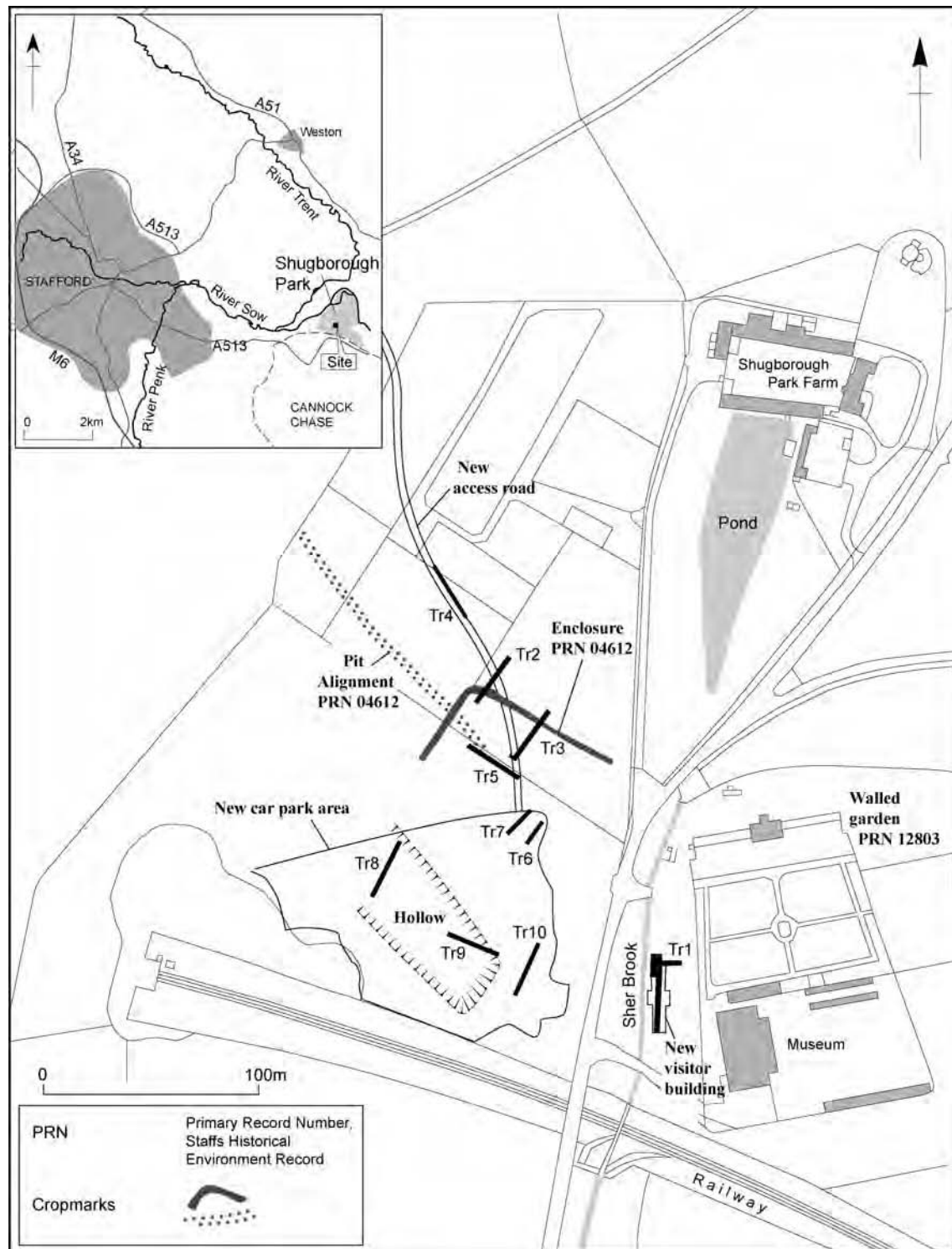


Fig. 1 Site location

A magnetic susceptibility scan was carried out over the area of the new car park and southern portion of the new access road. Detailed geophysical survey (magnetometry and resistivity) was designed to establish more fully the character of these areas. A detailed geophysical survey was also undertaken in the area of the new visitor building, to the west of the walled garden.

The trenches were positioned in the area of the new visitor centre, the area of the new car park, and along the line of the new access road (Fig. 1). The positioning of the trenches was influenced by the location of features plotted from aerial photographs of the park, which had

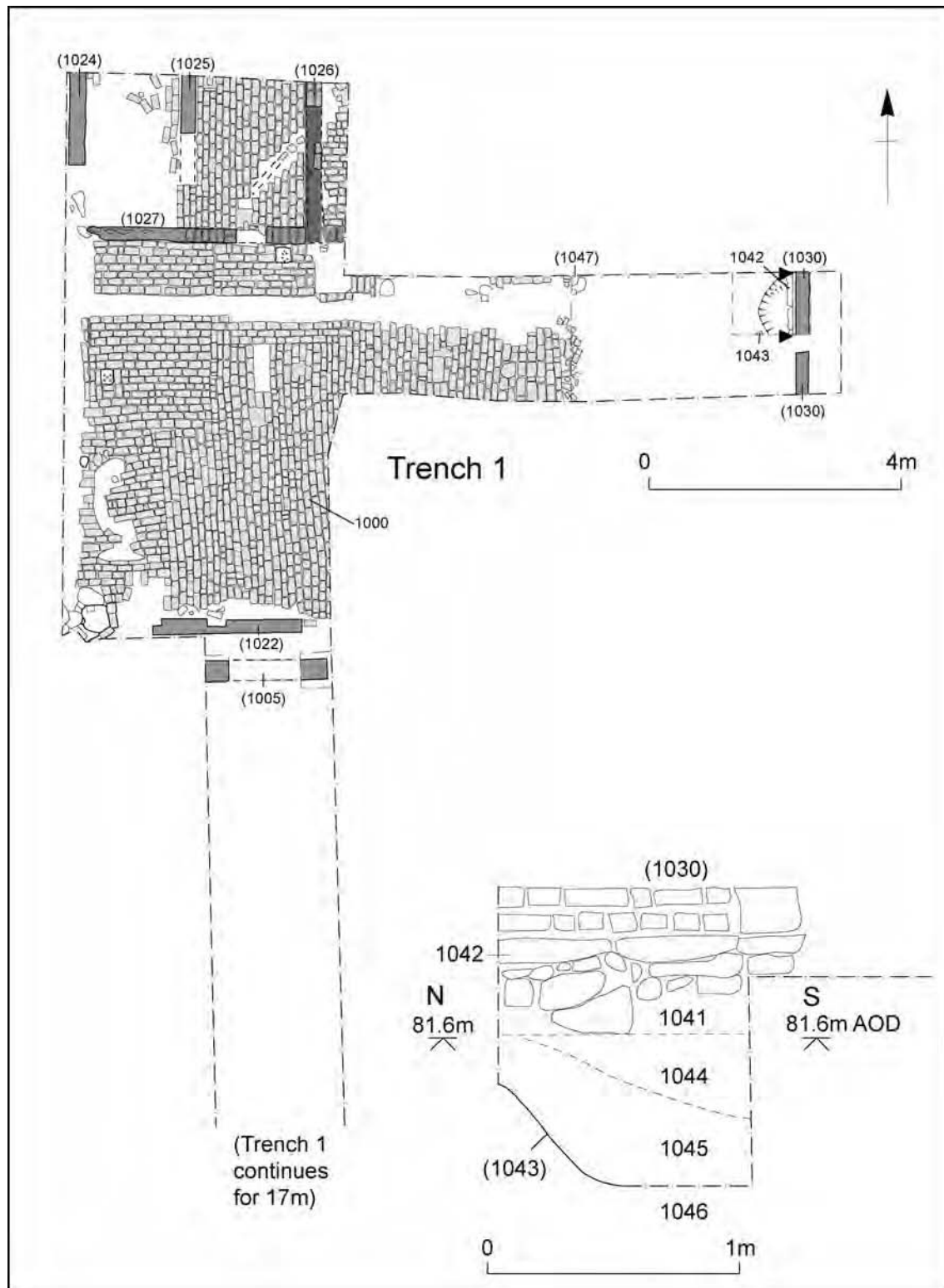


Fig. 2 Trench 1

suggested the presence of a pit alignment and an enclosure ditch of unknown date (Fig. 1). Further trenches were excavated in relation to linear anomalies present on the geophysical survey, and in areas where no archaeological information was available. A watching brief was maintained in the area of the new visitor centre during the excavation of footings and associated service trenches.



Plate 1 Trench 1: pit 1043 from the north-west

RESULTS

Geophysical Survey

A broad area of positive anomalies was recorded in the northern area of the proposed new car park, and southern extent of the proposed new access road, and to the west of the car park. The positive anomalies to the north of the car park broadly corresponded with features plotted from aerial photographs of the area. A detailed analysis of the geophysical survey can be found in the Stratascan report (Elks 2005).

Excavation

Archaeological features and deposits within the evaluated area of Shugborough Park overlay natural orange sands and gravels. These gravels were, in turn, overlain by an alluvial deposit of brown silty clay in the vicinity of the Sher Brook, and pale grey sandy silt within a large hollow feature in the area of the new car park (Fig. 1).

Phase 1: Middle Bronze Age (c 1500–1000 BC)

At the north-eastern extent of Trench 1, located on the proposed site of the new visitor building, a pit (1043; Fig. 2; Plate 1) was recorded cutting natural sand and gravel subsoil. The pit was circular in plan with a diameter greater than 1m. The feature had a concave profile and a depth greater than 0.4m. A dark grey-brown-black sandy silt (1046) formed the lowest fill of the pit. This fill was overlain by a grey-brown sandy silt (1045), with frequent charcoal and small sub-rounded pebbles. The upper fill of the pit (1044) was made up of a dark grey-brown to black silt with frequent medium-sized sub-rounded stones and occasional charcoal flecks. This context produced several prehistoric pottery sherds including a body sherd with applied decoration (Woodward below).

A possible posthole (1047) was recorded 1.8m to the west of the 1043. The feature was sub-rounded in plan with a vertical cut on its southern side, 0.36m in depth. The posthole was filled by a dark brown silty sand with frequent small sub-rounded stones (1048). The fill of the feature was also sealed by later deposits, suggesting it may be contemporary with the pit.

Phase 2: Iron Age (c 700 BC–AD 43)

A possible pit alignment had been recorded by aerial photography at Shugborough Park (PRN 04612; Fig. 1). Three trenches (Trenches 5, 6 and 7) were excavated in order to demonstrate the presence or absence of this feature and the extent to which it extended into the new car park area. No dating evidence was recovered from the features excavated at Shugborough, although elsewhere in Staffordshire pit alignments have provided later Iron Age dating evidence (Coates 2002, 15).

Two pits were recorded in the western end of Trench 5 (Fig. 3), cutting the natural sand and gravel subsoil. Pit 5001 was 0.9m in diameter and 0.26m in depth and filled by a light brown silty sand and frequent small sub-rounded stones (5002). A further pit was recorded at the edge of the trench on its southern side, 1m to the west of pit 5001. This feature (5003) appeared to be smaller with a diameter of 0.6m and a depth of 0.3m. The feature was filled by a dark brown silty sand (5004) with frequent small sub-rounded stones.

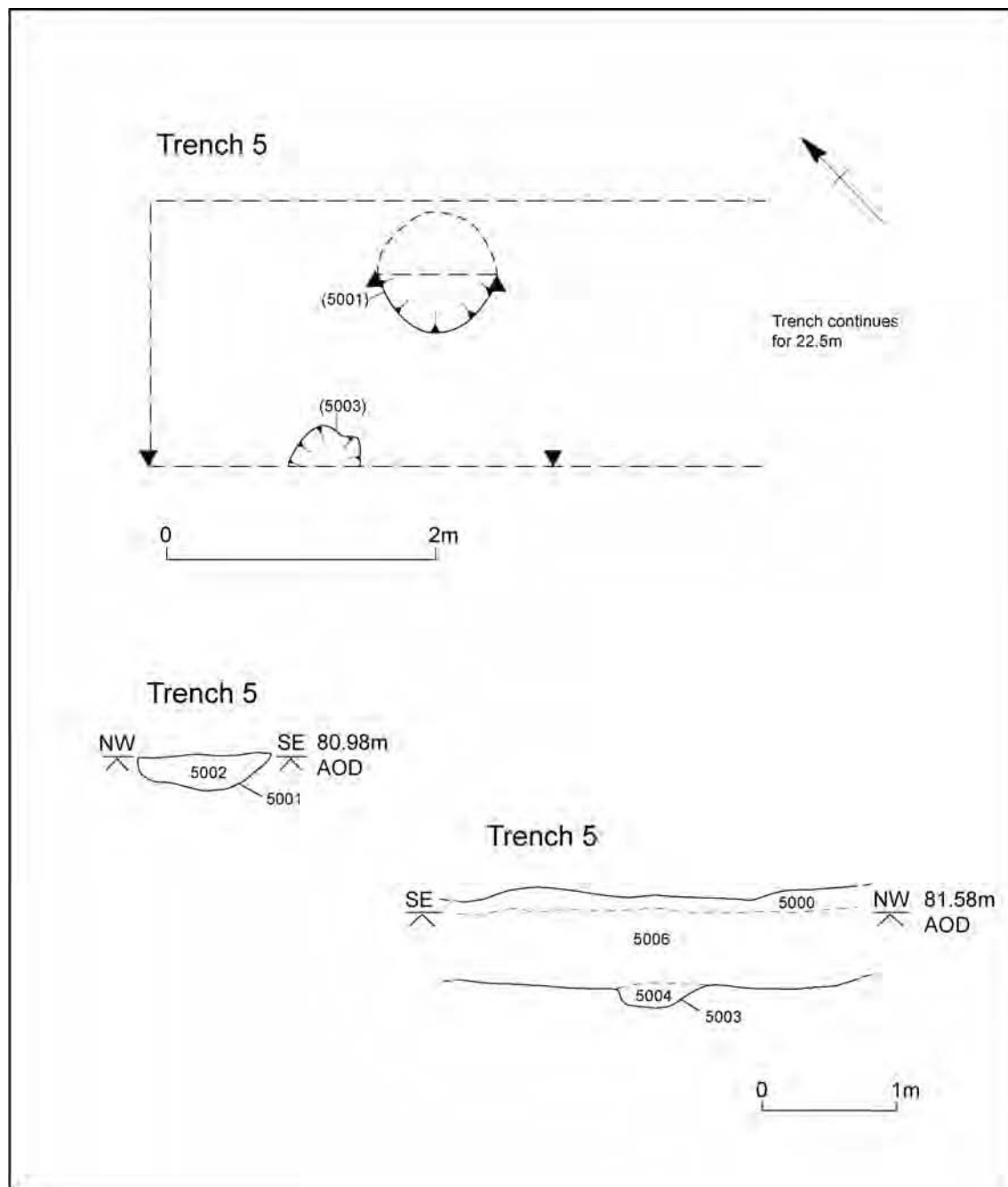


Fig. 3 Trench 5

Three relatively large, though shallow circular pits were recorded cutting natural sand and gravel in Trench 6 (Fig. 4). Pit 6003 measured 1.42m in diameter and 0.24m in depth and was filled by a dark brown silty clay (6004). A comparable feature (6015) was recorded 3.75m to the north-east. This measured 1.06m in diameter with a depth of 0.15m, and was filled by a dark brown silty clay (6016). A further feature of comparable dimensions (6017) was recorded 0.5m to the east.

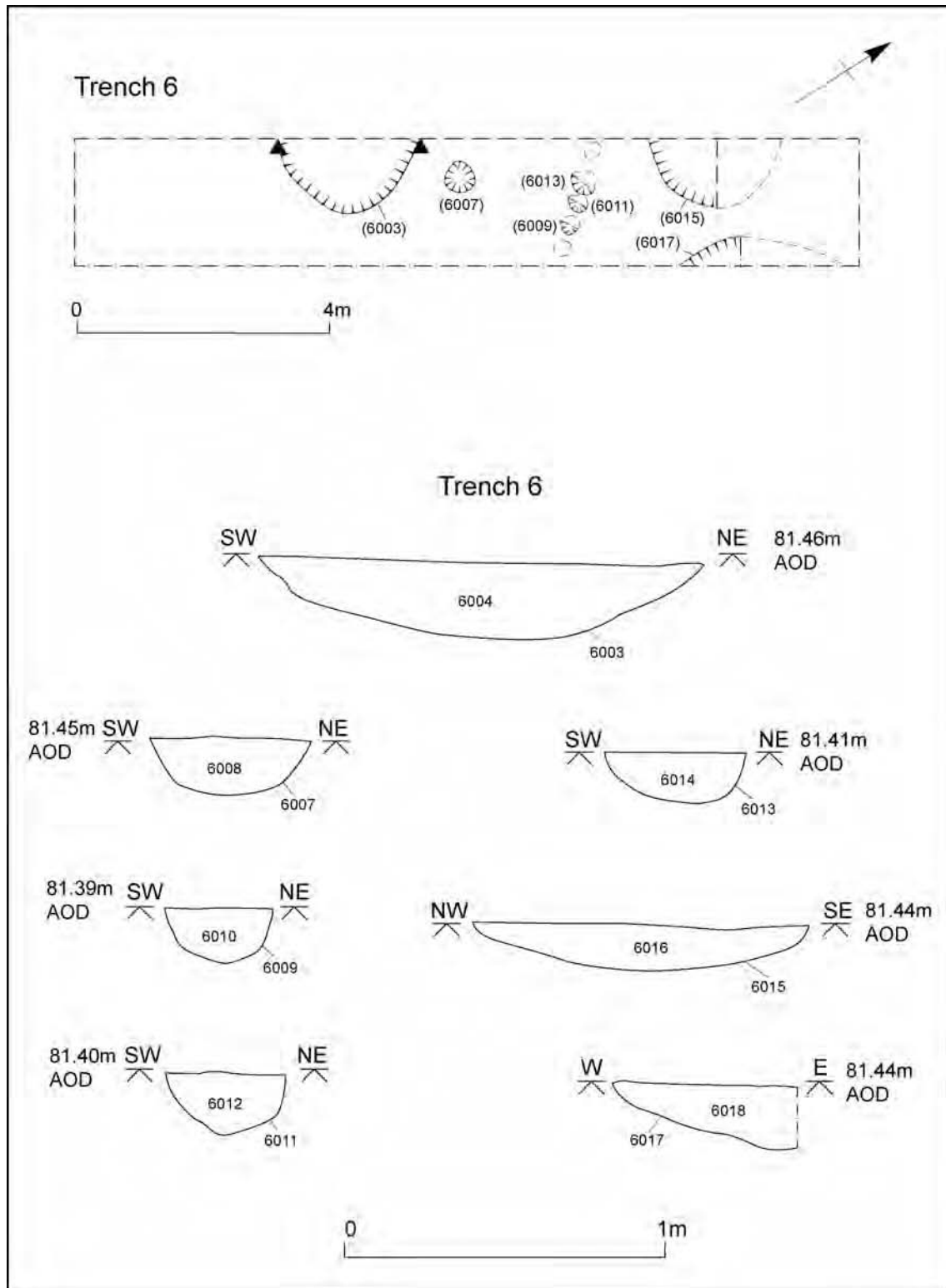


Fig. 4 Trench 6

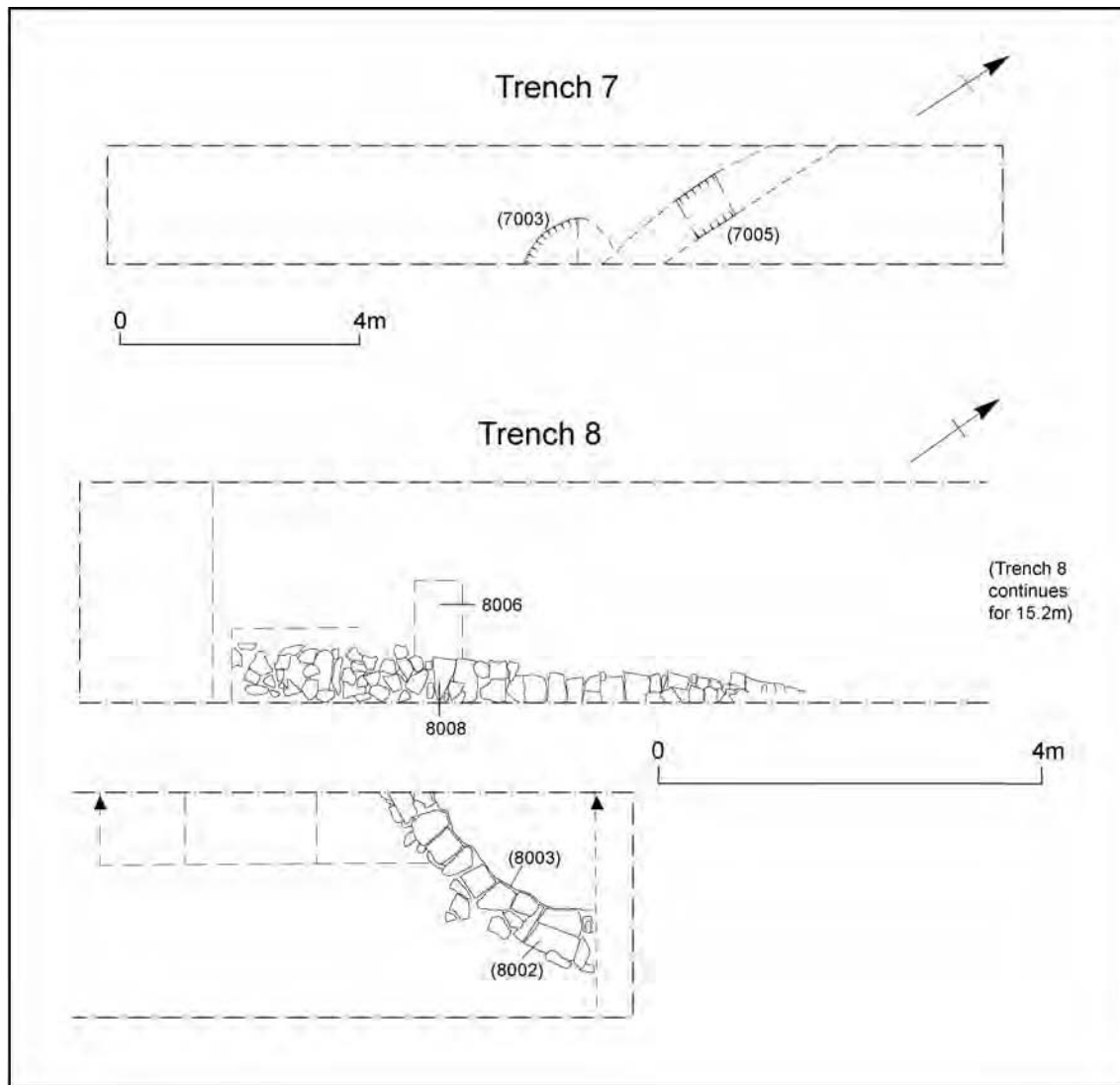


Fig. 5 Trenches 7 and 8

Three discrete circular features, which may represent postholes, were recorded forming a closely set arrangement (6009, 6011, 6013), aligned north-west to south-east. Posthole 6009 was 0.33m in diameter and 0.18m in depth, and filled by a dark brown silty clay. Posthole 6011 was 0.39m in diameter and 0.2m in depth, again filled by a dark brown silty clay (6012). Posthole 6013 was 0.47m in diameter and 0.15m in depth and filled by a dark brown silty clay (6014). A small circular pit or posthole (6007), 0.52m in diameter and 0.18m in depth, contained a relatively large quantity of fired clay fragments from its dark brown silty clay fill (6008). The fact that these features appear to respect the position of the larger pits may suggest they are contemporary. However, without dating evidence this cannot be demonstrated.

A shallow circular feature was also excavated within Trench 7 (Fig. 5), together with a gully. A shallow sub-circular feature (7003) measuring 0.62m in diameter and 0.12m in depth was recorded located against the eastern side of the trench (Fig. 5). The feature was filled by a dark brown silty clay with frequent small sub rounded stones. To the north-east a gully (7005) was recorded aligned north to south within the trench, which appeared to be cutting the pit. The feature was 0.79m in width and 0.15m in depth, again filled by dark brown silty clay (7006) with frequent small sub-rounded stones.

Phase 3: Romano-British (AD43–c 400AD)

Trenches 2 and 3 were positioned in order to test for the presence of a large rectilinear cropmark enclosure identified from aerial photographs (PRN 04612; Fig.1).

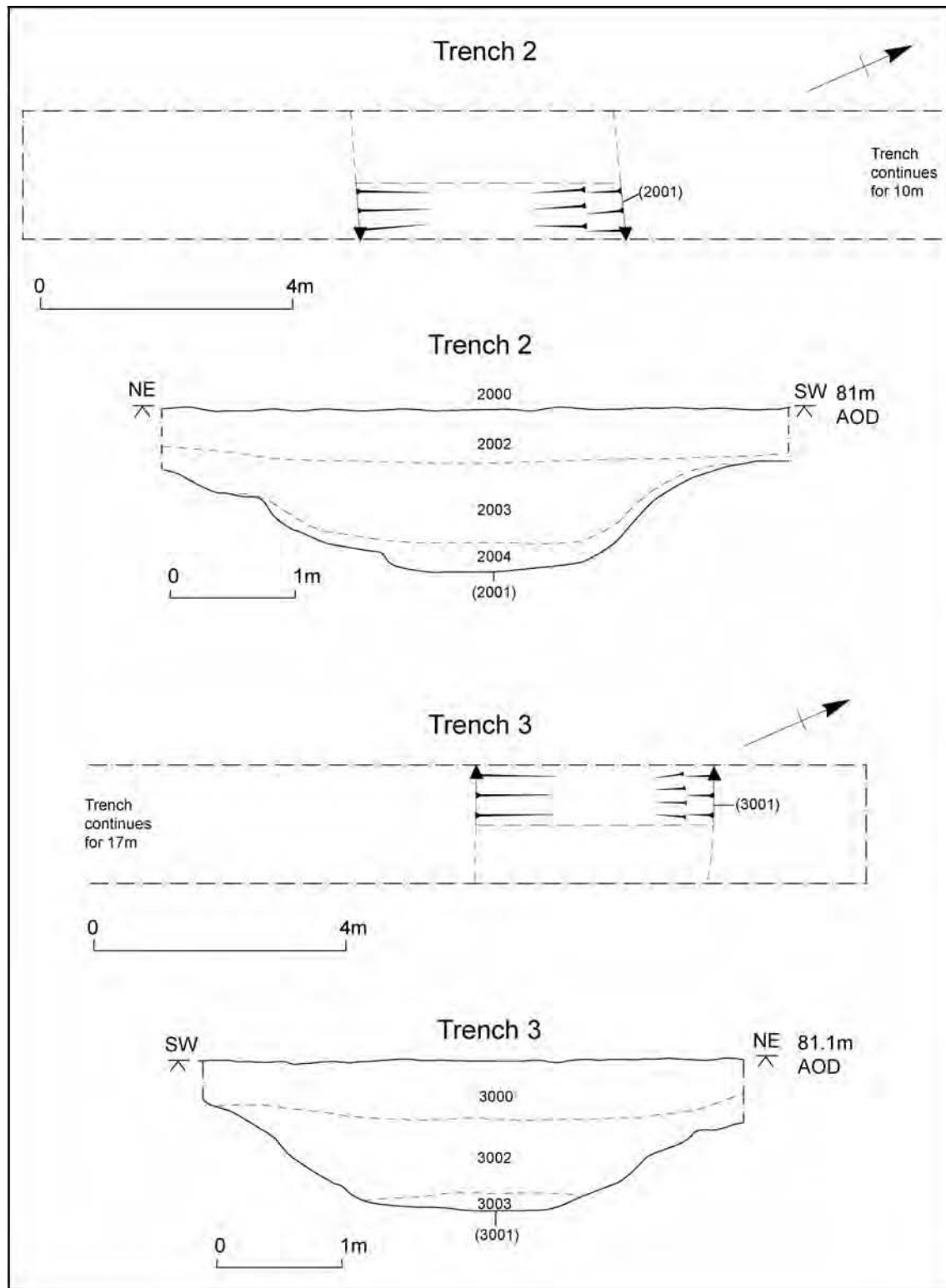


Fig. 6 Trenches 2 and 3

Within Trench 2 (Fig. 6) a substantial ditch (2001) was recorded aligned north-west to south-east, cutting the natural sand and gravel subsoil. The ditch was 4.25m in width and 0.9m in depth, with a flat base, a convex edge on its southern side and a concave edge on its northern side. The ditch was filled by two deposits; a dark brown silty sand with frequent small sub-rounded stones (2004) and an upper fill of light brown silty sand (2003). One Romano-British pot sherd (see below) and a

single animal tooth were recovered from the upper fill. These deposits were sealed by a ploughsoil horizon of dark brown silty sand (2002), 0.4m in depth below the current turf pasture.

The location of Trench 3 (Fig. 1) was also intended to establish the presence of the continuation of the ditched cropmark feature and any further associated features in the vicinity of the new access road. Within the trench a further ditch was recorded, cutting natural orange sand and gravel subsoil, and again orientated north-west to south-east (Fig. 6). This ditch (3001) represents the continuation of ditch (2001) in Trench 2. The ditch was 3.8m in width and 0.74m in depth. Again two deposits were recorded filling the feature. The lower fill (3003) was a mid-brown silty sand with frequent small sub-rounded stones. One tile fragment was recovered from this context. The upper fill (3002) was a light brown silty sand with a moderate quantity of sub-rounded stones. One sherd of post-medieval pot was recovered from this fill (Nichol 2005). It can be suggested that this pot is intrusive, being derived from the overlying ploughsoil. These deposits were again sealed by 0.4m of dark brown silty sand ploughsoil horizon (3000) and turf.

Phase 4: Medieval and Post-medieval

A number of undated archaeological features were recorded within the evaluation trenches which may relate to medieval or early post-medieval activity. A post-medieval building was recorded, west of the walled garden, in the area of the new visitor centre.

A light grey clay-silt was recorded filling a large hollow (Fig. 1) in both Trenches 8 (8006, Fig. 5) and 9 (9002, not illustrated). The full depth of the silt was not established and no datable material was recovered from it. At the northern end of Trench 8 a curvilinear wall (8003) was recorded, made up of light yellow-green sandstone blocks (8002; Fig. 5). The sandstone blocks were roughly hewn, rather than neatly dressed. At the southern end of the trench, and the southern lip of the large hollow feature, a further sandstone wall was recorded (8008; fig. 5) cutting a layer of light grey silt (8006). The wall was aligned south-west to north-east and was linear in plan. No neatly dressed facing stones were visible and the wall sloped into the large hollow.

In Trench 1, to the west of the walled garden, a layer overlying the Bronze Age pit (1041, Fig. 2) produced 17th-century pot sherds. A comparable layer of orange-brown silty clay with small sub-rounded stones, up to 0.5m in depth, was consistently recorded overlying natural gravel in the area of the new visitor centre and associated service trenches observed during the watching brief. The layer appears to represent an alluvial deposit related to the Sher Brook to the west.

The foundation of a sandstone wall (1042) cut into layer 1041 (Fig. 2). The sandstone foundation was aligned north-south and appeared to comprise four courses of stone. Three courses of red brick with lime mortar were laid on top (1030). The brick wall was observed on the same alignment and extending to the south, during the watching brief. A large pit was recorded during the watching brief to the east of this brick wall measuring c 8m in length and recorded cutting into natural gravel and filled by a dark brown silt with sandstone blocks in the upper fill (not illustrated).

To the west, a post-medieval building was recorded (Fig. 2). The building was aligned on the road and the Sher Brook, running parallel to its west. It is possible that the western wall (1024), the east-west aligned wall 1027, and walls 1025 and 1026 in the northern area of the trench, represent a brick-built structure, with the area to the south and east of wall 1027 representing a covered yard surface, rather than a fully enclosed brick building. This suggestion is reinforced by the presence of *in-situ* wooden posts recorded to the west and east of the brick surface (1000) in Trench 1 and during the watching brief. The brick surface is bounded by wall 1022 to the south. A further wall was recorded immediately to the south (1005) and the watching brief suggested that this wall extended eastwards beyond the eastern extent of the new visitor building. Pottery associated with the building in Trench 1 has been dated to the late 19th and early 20th centuries (Nichol 2005).

FINDS

Prehistoric Pottery by Ann Woodward (Fig. 7)

A group of six non-joining sherds, probably from two vessels, can be dated to the Middle Bronze Age (c 1400 to c 1000 cal BC). The pottery was found in the upper fill (1044) of pit 1043 in Trench 1.

Form

The six sherds weighed in total 136g. All were pink buff in colour on the exterior surface, with buff to pale grey core and buff interior surface. Macroscopically, it seemed that all the sherds derived

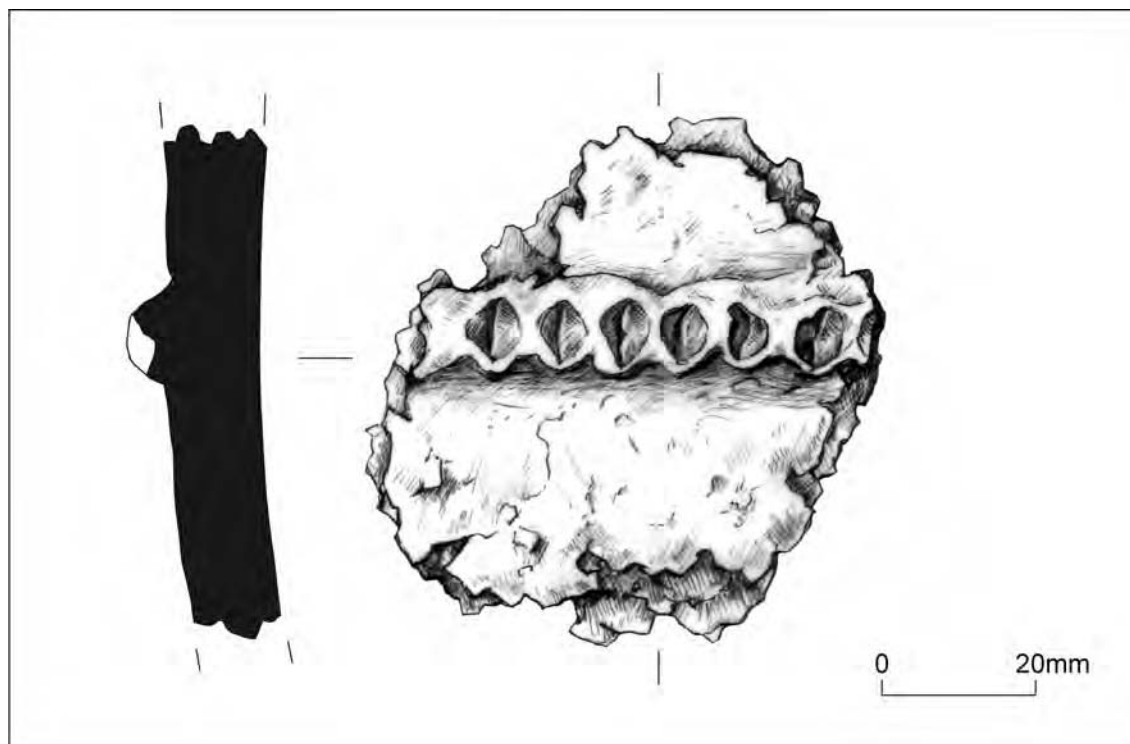


Fig. 7 Middle Bronze Age Urn (1044, from pit 1043) with applied cordon

from a single vessel, but petrographic analysis (Ixer below) demonstrated that two vessels were represented: one by a single large plain wall sherd from an urn-sized vessel, with the rest of the material (one large sherd and smaller pieces) coming from another urn which had an applied horizontal girth cordon decorated with vertical fingertip impressions (Fig. 7). The diameter of this vessel was 280mm at the level of the cordon. The exterior surfaces of all the sherds were well smoothed, and some showed traces of vertical finger smearing. All the pottery was in fresh condition, and the breaks were fresh, but mainly ancient.

Fabric

The fabrics of all the sherds appeared to be similar, containing varying amounts of grog and rare rock fragments. However petrographic analysis (Ixer below) showed that two distinct fabrics could be recognised microscopically. The plain wall sherd contained grog which had been intentionally added, and fine-grained sand/gravel which may also have been added deliberately. The sherds from the cordoned vessel contained far less grog, while fine-grained gravel may have been added deliberately to a naturally clean or cleaned clay. All the gravel contained igneous and metamorphic rock components. Also the plain wall sherd showed evidence of different firing conditions from the other sherds. Dr Ixer concluded that the lack of any local (Triassic) sandstones and quartzites amongst the inclusions suggests that they did not derive from local bedrock. The altered volcanic/igneous rocks appear to have been deliberately selected, either from local or regional glacial drift deposits, or, if from *in situ* deposits, from further afield in North Wales, Cumbria or further north.

Discussion

The size of the Shugborough vessels, and the presence of the fingertip-impressed cordon suggest that the pottery belongs to a Deverel-Rimbury related tradition dating from the Middle Bronze Age. Middle and Late Bronze Age pottery is very rare in lowland Staffordshire, and this group of pottery therefore provides an important addition to the known corpus. A group of three urns from Barton-under-Needwood all possess fingertip-impressed cordons (Martin and Allen 2001, fig. 7, 1–3). However, the presence of other decorative motifs on two of these urns indicates that the group may belong to the slightly earlier tradition of Cordoned Urns, current in the later part of the Early Bronze Age. In Warwickshire, the group of eleven restorable urns from a cremation urnfield

at Ryton-on-Dunsmore included eight vessels with rows of fingernail or fingertip impressions and four with horizontal cordons (Longworth 1977, figs. 6 and 7). Further comparable vessels from Warwickshire include those from Baginton (Edwards 1938) and Wolston (Chatwin 1944), all of which carried fingertip ornament. One of the Wolston urns was associated with a cremation. The large assemblage of pottery from cremation cemetery C1 at Bromfield, Shropshire also includes 14 vessels with rows of fingertip impressions, three of which are placed on horizontal cordons (Stanford 1982, fig. 16, 16 and 47; fig. 17, 15). The assemblage also includes urns with plastic decoration, such as horseshoe cordons, which are more Early Bronze Age in style, but the urnfield appears to have been very long lived (see below). Geographical links to the classic Deverel-Rimbury groups of the Thames valley and Wessex are provided by various assemblages from Gloucestershire, such as Aston Mill, Kemerton (Dinn and Evans 1990, fig. 16, 8–9) or Roughground Farm, Lechlade (Allen *et al* 1993, figs. 22–4).

Radiocarbon dating from several of these sites would place the Shugborough vessels in the Middle Bronze Age period. At Ryton, three dates give a calibrated range in the area of 1100 to 900 cal BC (Bateman 1977, 22), whilst at Roughground Farm a date for the ceramic group from F1001 (Allen *et al* 1993, fig. 24, 21–29) calibrates to 1410–1170 at 68% probability. Three dates for the Bromfield cemetery indicate that burial was taking place for about a millennium (Stanford 1982, 316) but the fingertip-impressed vessels may not have been the earliest in the sequence there.

The urns from Baginton and Wonston were coarse but with little grit, and those from Ryton contained local sand only, as identified by the use of heavy mineral analysis (Ellison 1977). The Barton-under-Needwood urns also contained sand, plus sparse but coarse grog, and occasional quartzite, flint and mica. All these non-plastic components would have been available from the local gravels and drift (Williams in Martin and Allen 2001, 9). In the Cotswolds, the pottery fabrics from Kemerton and Roughground Farm also included materials from local deposits, in these cases sand and limestone (Dinn and Evans 1990, 29) and mainly shell or shelly limestone (Allen *et al* 1993, 29, Table 8). The only urns previously analysed from the West Midlands that have been shown to contain igneous inclusions are those from Bromfield, which contain significant quantities of Clee Hills dolerite (Stanford 1982, 309). The sherds from Shugborough do not carry West Midlands dolerite clasts, but do contain other igneous-derived inclusions. Thus they provide an important contribution to the study of Early and Middle Bronze Age pottery fabrics in the region.

Romano-British Pottery

A sherd of oxidised pottery from a fill (2003) of ditch 2001 in Trench 2 has been identified as Romano-British (Jane Evans pers. comm.). It was not possible to be more specific about the form or date of the sherd.

Charred Plant remains *by James Greig*

Five of the samples contained plant remains; the most significant are two from Middle Bronze Age contexts (1044 and 1045) with significant amounts of *Hordeum* (barley) grains, which are important because there are so few other prehistoric remains from the area. The Romano-British sample (2003) also contained a grain of barley. The other samples contained mainly seeds of weeds such as fat hen, and of scrub such as elder, and are not, therefore, very informative.

DISCUSSION

The earliest archaeological feature recorded during the evaluation and watching brief was a pit containing Middle Bronze Age ceramics from more than one vessel. The presence of charred cereal grains may suggest that the feature was associated with agricultural activity and domestic settlement. The fact that there was a lack of cremated bone suggests the pit and pottery was not associated with funerary activity.

Evidence for Middle Bronze Age settlement activity in the region is rare (Halsted 2007), and therefore this feature is an important contribution to the understanding of the location of such activity. It is notable that Middle Bronze Age ceramics were recorded in association with postholes and a curvilinear gully at Fisherwick, Staffordshire (Smith 1976) and that these were interpreted as representing settlement.

Middle Bronze Age activity frequently clusters around Early Bronze Age funerary monuments (Woodward 2000, 43). Possible Middle Bronze Age urns and cremations (see Woodward above)

were recorded at Tucklesholme Farm, Barton-Under-Needwood, within and between two ring ditches (Martin and Allen 2001, 7). What is not certain is the relationship between settlement features and funerary monuments in the region in this period.

A possible Bronze Age ring ditch represented by a cropmark (PRN 04612) has been identified from aerial photographs in fields to the northwest of Trench 1, although this has not been substantiated through excavation. Further comparable cropmark features suggested to be Bronze Age ring ditches have also been identified (PRN 04075) on aerial photographs to the southeast of the walled garden. Neither of these sites is, however, adjacent to the Middle Bronze Age pit recorded here.

The confluence of rivers has been suggested to act as a focus for ritual activity in the Early Bronze Age, as demonstrated by ring ditch and other Early Bronze Age monuments at Whitemoor Haye and Catholme, Staffordshire (Coates 2002; Hewson 2006; Bain *et al* 2005), and at the Mid-Late Bronze Age cemetery at Bromfield, Shropshire (Stanford 1982). It may be significant therefore, that Shugborough Park is located to the south of the confluence of the Rivers Trent and Sow. Any such activity may well have been associated with episodes of domestic settlement, whether permanent or transitory.

The shallow pits recorded in Trenches 5, 6 and 7 may be an extension of the possible pit alignment recorded from aerial photographs (CUCAP ADC76). The feature is likely to represent a boundary, though its date is unknown. A lack of dating evidence from such features is not uncommon and this has been highlighted for pit alignments in the Trent Valley (Knight and Howard 2004, 102). Pit alignments at Whitemoor Haye, Staffordshire have produced Iron Age ceramics and radiocarbon dates (Coates 2002, 13–15). These pits are, however, more substantial than those excavated at Shugborough (*ibid* 81), which could suggest that the Shugborough pits are of a different date.

A significant relationship between pit alignments and earlier monument complexes has been suggested at Whitemoor Haye and at other sites in the West Midlands (Woodward 2007) and can be seen more widely in Britain (e.g. Waddington 1997; Wigley 2007). In this context the presence of a possible pit alignment together with a Middle Bronze Age pit and possible ring-ditch sites at Shugborough may be significant, and could suggest that a succession of activities were referencing existing features in the landscape.

Closely spaced posthole features within Trench 6 appear to relate to an insubstantial structure here, perhaps part of a fence line. The presence of a number of burnt clay fragments, possibly from a small oven, in a small pit or posthole in this trench suggests the presence of structures or settlement here which may be contemporary with the pit alignment or the rectilinear enclosure.

The ditch recorded in Trenches 2 and 3 represents a substantial boundary feature or enclosure, which may represent the location of a farmstead. The aerial photographic evidence suggests that a western arm echoes the current field boundary. However it is not known at present whether the ditch represents a rectilinear enclosure. The ditch can be suggested to date to the Romano-British period on the basis of a single oxidised sherd. This interpretation must be viewed with caution in view of the presence of a post-medieval sherd from the ditch in Trench 3. The rectilinear form of the ditched enclosure, as shown on aerial photographs may be consistent with a date in the Romano-British period. Yet it must be stressed that only two arms of the enclosure have been plotted from the air and the presence of the remaining sections of the ditch has not been substantiated.

The sandstone walls recorded in Trench 8 might represent structures pre-dating the development of Shugborough Park in the 18th century. A lack of dating evidence from the evaluation precludes a more specific interpretation, though a lack of brick or tile in association with these features may suggest an early date (J. Milln, pers. comm.).

The function of the structures remains unclear. The sandstone walls clearly have an association with the substantial hollow feature within the new car park area, which may extend westwards on the basis of geophysical survey results (Elks 2005). This feature may represent a landscape feature of the 18th-century park or a feature of natural origin. The fact that the hollow broadly equates to the line of the former (pre-park) Stafford to Rugeley road (PRN 20792) may suggest that it represents a hollow way. The feature shows a comparable alignment with this road when compared with the map 'Shugborough before the alterations' (Staffordshire County Council 2005). A lack of metalling within the feature may, however, undermine this interpretation, and the possibility that the feature is entirely natural cannot be ruled out.

The presence of 17th- and 18th-century ceramics in the area of the new visitor centre may suggest a focus of settlement in the vicinity. Sandstone foundations and residual sandstone recorded

during the watching brief may relate to a contemporary structure in the vicinity. The brick built building located in Trench 1 appears to date from the 19th century since a building in this location is present on the 1st edition Ordnance Survey map. It would appear from the ceramic assemblage that the building continued in use into the 20th century. It is possible that this structure located in the northern area of the trench was associated with a covered yard surface, with a roof supported on timber uprights.

CONCLUSIONS

The excavation and recording at Shugborough Park has demonstrated that archaeological features ranging in date from the prehistoric to the post-medieval periods are present here and potentially well preserved. The presence of Middle Bronze Age ceramics and cereal grains represents an important contribution to the interpretation of settlement activity for this period in Staffordshire and the West Midlands. The presence of a possible pit alignment contributes to the understanding of the context of such features in the landscape, although their dating of these features remains a priority for future research. The identification of a Romano-British sherd within a substantial ditch suggests the presence of an enclosure of this period here, and the identification of a small oven may indicate internal settlement features.

Well-preserved sandstone walls and a possible hollow way could suggest that features relating to pre-park settlement activity exist to the south-west of the known medieval nucleated settlement. It must be stressed that the dating and function of these features is uncertain. Nineteenth-century structures represented in cartographic sources clearly have the potential to survive as below-ground features within the estate.

ACKNOWLEDGEMENTS

The evaluation was commissioned by Staffordshire County Council. Thanks are also due to the National Trust for their cooperation during the trial trenching. Particular thanks are due to Ron Mellor for re-organising livestock during the trenching. The trenching was supervised and monitored by John Halsted and supervised by Mary Duncan and Helen Martin-Bacon, assisted by Alex Stephenson, Dan Jackson, Sally Radford and Phil Mann. The report was written by John Halsted and edited by Alex Jones. The plans were illustrated by Nigel Dodds and the pottery by Bryony Ryder. The project was monitored by Steven Dean for Staffordshire County Council and Jeremy Milln for the National Trust, and thanks are due to both for their useful comments and interpretations during the evaluation. The finds were quantified by Erica Macey-Bracken with identifications by Kirsty Nichol and Jane Evans, and the prehistoric pottery by Dr Ann Woodward. The charred plant remains were examined by Dr James Grieg and the pottery fabrics by Dr Rob Ixer. Thanks are due to Dr Emma Tetlow for her comments regarding the large hollow feature on the site and Dr Roger White for his comments on the fired clay material. The geophysical survey was undertaken by Stratascan.

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APPENDIX

Bronze Age Pottery Petrography by Rob Ixer

Four polished thin sections were made from four sherds. Each sherd was cut and the colour and texture of the sherd and its cut surface were described using a hand lens and the Geological Society of America rock-colour chart. Each polished thin section was described using a x20 hand lens and then under the transmitted light petrological microscope using x6 and x12 air lenses. All translucent phases were identified using their optical properties.

Summary

The four sherds are probably from at least two vessels, sherd one and sherds 2, 3 and 4; indeed, sherds 3 and 4 are very similar.

Sherd one differs from the other three in its firing colour, the amount of grog in the fabric and its range of rock-types. It has been intentionally grogged and may have had rock temper added also. The clay matrix is not as clean as in the other three sherds. The petrography is consistent with grog and fine-grained, weathered sand/gravel added to a natural, slightly silty clay.

Sherds 2–4 vary in the amount of grog they contain and for sherds 3 and 4 there is too little for it to have made a significant difference to the properties of the paste. The clays are very clean and the bimodal distribution for the non-plastics and size of the large clasts suggest that a fine-grained gravel comprising weathered rocks may have been added to a naturally clean or cleaned clay.

The natural non-plastics of all four sherds are dominated by a range of weathered/altered, calc-alkaline volcanics and fine-grained igneous rocks characteristic of rocks found in North Wales, the English Lake District and close to the Scottish Borders and elsewhere. Fine-grained metamorphics and arkosic sediments are also present but flint and burned flint are absent and quartzite, if present, is very rare. Indeed, all four sherds share sufficient similarities to suggest that their non-plastics have a common origin.

The bedrock geology of Shugborough and the Stafford area is the New Red Sandstone (Trias) characterised by sandstones, mudstones and pebble beds. Although igneous and metamorphic rocks are found as cobbles in the Triassic pebble beds they are quite uncommon, as in these formations the pebbles are dominated by quartzite. The bedrock Trias therefore seems a very unlikely source for the non-plastics.

Calc-alkaline rocks do not crop out in the English Midlands but are probably present as minor components within the pebbles/cobbles found as part of the local/regional glacial drift deposits that are known to carry northern Welsh and northern English rocks.

The lack of any local Triassic component (namely pure sandstones and quartzites) may be an indicator that volcanic/igneous rocks were deliberately selected for temper. Unless they were selected from drift deposits the petrographical evidence suggests that the non-plastics are not local to Shugborough Park and probably not regional.

Sherd 1

Macroscopic Description

The sherd has an outer, light brown (5YR 6/4 on the G.S.A. rock-color chart) fired surface. The cut surface shows the sherd to be mainly orange (10YR 7/4) with darker areas (medium grey N5). The clay carries abundant, 1–3mm diameter, rounded grog and sparse, 1–2mm diameter, pale-coloured; 2mm diameter dark and 3mm diameter 'sandstone' rock clasts.

Thin Section

The sherd is a light brown (5YR 5/4 on the G.S.A. rock-colour chart) with 2–3mm thick, black (N1) streaks. The clay matrix carries abundant grog up to 4mm in diameter together with rare, angular, pale-coloured, 0.2–1mm diameter, rock clasts. The grog differs in firing colour, its plastic: non-plastic ratio and fabric orientation from the main clay and all the grog may be from the same pot.

Microscopic Description

Petrographically a fairly clay carries abundant, small, monocrystalline quartz together with minor to trace amounts of angular potassium feldspar including rounded microcline and one large altered perthite, altered and unaltered plagioclase, zircon and muscovite laths.

Non-igneous rock clasts include polycrystalline metamorphic quartz, 'chert', very fine-grained siltstone and quite coarse-grained, arkosic sandstone carrying altered plagioclase, alkali feldspar and rock clasts. Igneous rocks include fine-grained quartz-altered plagioclase ± altered mafics and coarse-grained quartz- altered mafics. Some of the feldspar has altered to epidote.

Rounded to angular grog clasts are abundant, small to large in size and have fired both paler and darker than the main clay, most show a fabric that is at an angle to the main fabric of the pot and they show different plastic: non-plastic ratios from the main clay. The grogs carry quartz, or quartz ± plagioclase and many are from the same pot. Post-burial gypsum with fluid inclusions is

present and has precipitated from local groundwaters that in Permo-Triassic rocks of the Midlands are calcium sulphate-bearing.

The clay is less clean than sherds 2–4 and the rock non-plastics are smaller and there is a less obvious bimodal size distribution to the non-plastic component. There is enough grog to suggest that it was added intentionally and the majority of the grog appears to be from the same vessel. It is not so clear that the rock component was intentionally added, as for example, there is little evidence that a single crushed rock-type was used. However, the use of a sand/gravel comprising mixed weathered lithologies would be consistent with the petrography.

Sherd 2

Macroscopic Description

The top surface is a light brown (5YR 5/4 on the G.S.A. rock-colour chart) and the cut surface shows the body of the sherd to be black (N1) with 1–2mm diameter, angular, pale-coloured rock clasts.

Thin Section

The body of the pot is black (N1) with a dark yellowish orange (10YR 5/6), 1–2mm wide, outer rim. Sparse grog is up to 2mm in diameter and carries igneous rock clasts but most of the non-plastics are 2–5mm diameter, rock fragments dominated by highly altered porphyritic altered lava.

Microscopic Description

Petrographically a clean clay carries small, monocrystalline quartz plus minor to trace amounts of muscovite flakes, plagioclase, plus one very rare, large biotite, one very large, euhedral quartz and a small epidote cluster.

Non-igneous rock clasts are angular and include ‘chert’, fine-grained, grain-supported, arkosic sandstone and fine-grained siltstone carrying plagioclase and white mica. Igneous rock clasts are all highly altered/weathered and include porphyritic lavas where feldspars that have altered to fine-grained white mica (sericite) are set in an altered groundmass of feldspar microliths; highly zoned plagioclase in a biotite-feldspar matrix; and other extremely altered volcanics that now comprise fine-grained, secondary white mica-opaques.

Other rocks comprise metamorphic, fine-grained quartz-brown amphibole/biotite.

There are significant amounts of mudstone/grog and they show a variety of firing colours. Rounded, dark ‘grog’ devoid of non-plastics may be mud clasts but other areas are angular, pale-firing and carry quartz and rare gypsum; they show different plastic: non-plastic ratios to the main clay.

Post-depositional gypsum with fluid inclusions is also present as euhedral crystals and irregular patches growing into void spaces and has precipitated from local groundwaters that in Permo-Triassic rocks of the Midlands are calcium sulphate-bearing.

The clay is very clean and rock non-plastics are sparse but large so giving a bimodal size distribution to the non-plastic component of the pot. It is difficult to determine for certain if the pot was intentionally tempered for although the size distribution suggests that it was, the polyolithic nature of the rock clasts suggest a natural assemblage namely a sand/gravel comprising weathered rocks. There is enough grog to suggest that it was added intentionally.

Sherd 3

Macroscopic Description

There are abundant elongated void spaces within a poorly made fabric. The surface is a moderate reddish orange (10YR 6/6 on the G.S.A. rock-colour chart) but the main body of the pot is medium light grey (N6). The clay carries 0.2–0.4 diameter quartz grains and 0.5–3mm diameter rocks many of which are cubic in shape and include 1mm diameter, pale-coloured or 1.5mm diameter, limonite-stained lithologies. A large rock clast up to 5mm in size is a light bluish grey (5B 7/1) and looks to be epidotised.

Thin Section

The main body of the pot is black (N1) with up to 2mm thick, paler layers that are olive-grey (5Y 4/1). The rock clasts appear to be similar to sherd 2 and comprise 0.3mm diameter, pale quartz grains but also up to 4mm diameter, highly altered porphyritic lava and a 4mm rounded mudstone/clay ball.

Microscopic Description

Petrographically a clean clay carries small, monocrystalline quartz plus minor to trace amounts of muscovite flakes, untwinned feldspar and plagioclase altering to fine-grained white mica. Locally the clay is very clean and is devoid of non-plastics.

Non-igneous rock clasts are rounded to angular and include polycrystalline quartz/quartzite and fine-grained, grain-supported, arkosic sandstone. Igneous rock clasts are all highly altered/weathered and include fine-grained feldspathic rocks with a trachytic texture, fine-grained mafic-bearing volcanics and coarse-grained quartz-altered feldspar. Other rocks comprise ?metamorphic, quartz-fine-grained epidote and fine-grained quartz-biotite/ brown amphibole $\pm$?epidote the latter is identical to clasts present in sherd 2.

Minor amounts of paler fired grog show fabrics at variance with the main clay fabric. Post-depositional gypsum with fluid inclusions is also present as euhedral crystals or irregular patches but not very common and has precipitated from local groundwaters that in Permo-Triassic rocks of the Midlands are calcium sulphate-bearing.

The clay is clean and the rock non-plastics are sparse but large so giving a bimodal size distribution to the non-plastic component of the pot. It is difficult to determine for certain if the pot was intentionally tempered for although the size distribution suggests that it was, the polyolithic nature of the rock clasts suggest a natural assemblage namely a sand/gravel comprising weathered rocks. There is too little grog to suggest that it was added intentionally.

Sherd 4***Macroscopic Description***

The outer surface is a light brown (5YR 6/4 on the G.S.A. rock-colour chart) but the cut face shows the body of the pot to be medium dark grey (N4) with a moderate yellowish orange (10YR 5/6), 1mm thick, outer rim. It is quite sparsely ?tempered with 3–4mm diameter, cubic rock clasts that are very fine-grained and pale green (pale olive 10Y 6/2) in colour.

Thin Section

The pot has a black (N1) core with a 1mm thick dark yellow orange (10YR 5/6) outer rim. Large, 4mm diameter, porphyritic and vesicular, altered lava comprise the main rock clasts and are dark greenish grey (5GY 4/1). Some grog may be present.

Microscopic Description

Petrographically a clean clay carries small, monocrystalline quartz some showing stained extinction plus minor to trace amounts of rounded plagioclase and muscovite flakes.

Rock clasts are sub-rounded to sub-angular and the pot is close to being monolithic. Non-igneous rock clasts are rare but include 'chert' and polycrystalline quartz. Igneous rock clasts are all altered/ weathered and include fine-grained, feldspathic rocks with a trachytic texture but are mainly porphyritic lavas with plagioclase phenocrysts set in a fine-grained, microlitic feldspar or feldspar-quartz matrix. Some 'chert' may be rhyolite. One clast comprises polycrystalline, coarse-grained plagioclase.

Small, angular, pale-fired grog has little or no non-plastics in them.

Post-depositional gypsum with fluid inclusions is also present as euhedral crystals or polycrystalline irregular patches and has precipitated from local groundwaters that in Permo-Triassic rocks of the Midlands are calcium sulphate-bearing.

The clay is clean and the rock non-plastics are sparse but large so giving a bimodal size distribution to the non-plastic component of the pot. It is difficult to determine for certain if the pot was intentionally tempered but the size distribution and limited lithologies suggest that it was. There is too little grog to suggest that it was added intentionally.

BEAUDESERT HALL, STAFFORDSHIRE: A HOUSE OF THE BISHOPS OF COVENTRY AND LICHFIELD

MALCOLM HISLOP AND SHANE KELLEHER

SUMMARY

Emergency recording of the upstanding remains of Beaudesert Hall, between Cannock and Lichfield, has added to our knowledge of this former medieval and Elizabethan great house. Of the late medieval residence belonging to the bishops of Coventry and Lichfield, only the south wall of the great hall survives, in a much altered state, whilst the two other surviving fragments of the building are probably late 16th-century in origin; these are the replacement north wall of the hall, together with part of the adjoining east wall of the west range, and the north-west angle of the building. Despite the fractional state of the remains, the present survey has nevertheless allowed the degree of medieval survival to be assessed, and the bishops' house to be considered in greater detail than has hitherto proved possible.

INTRODUCTION

In November 2007 Birmingham Archaeology was commissioned by the King George V Memorial Scouts and Guides Recreation Lands (more commonly known as The Beaudesert Trust) to carry out a programme of historic building recording of the upstanding remains of Beaudesert Hall following a structural collapse. The recording comprised analytical written descriptions, a photographic survey, and a measured survey, the latter being carried out at a distance by a laser scanner owing to concerns about the structural stability of the remains and the inadvisability of coming into too close contact with them. This report outlines the results of the historic building recording.

LOCATION

The remains of Beaudesert Hall are located within Beaudesert New Park in Staffordshire, approximately five miles north-west of Lichfield and approximately three miles north-east of Cannock and are centred on NGR SK 0546 1336 (Fig. 1). The park is situated to the north of Gentleshaw village, at the south-east end of the Cannock Chase Area of Outstanding Natural Beauty. Agricultural lands extend eastwards from the hall towards the A51, which links Lichfield and Rugeley, and to the north the land falls away quite sharply.

The remains of the hall lie at the heart of an historic landscape which includes the Iron Age Castle Ring univallate hillfort, an historic deer park, and various outbuildings and garden features, including a Victorian walled garden and a late 18th-century semi-circular stable block. The ruins, which stand at the edge of a level clearing within an area of woodland, which was formerly an ornamental garden, comprise three main elements: the remains of the two east-west aligned side walls of the hall and, to the north, part of a subsidiary wing (Figs 2 and 3, Plate 1).

HISTORICAL SUMMARY

Originally in the extensive royal forest of Cannock, Beaudesert Park had been created by the bishops of Coventry and Lichfield even before they acquired a large part of the forest as a private chase in 1290 (Kettle 1967, 342–3). What was presumably a lodge was rebuilt by Bishop Walter Langton, who in 1306 was granted a licence to crenellate a house he was having built at Beaudesert (CPR 1301–1307, 462).

In 1546 Bishop Richard Sampson was forced to surrender the chase to the Crown, the acquisition being engineered by Sir William Paget, Henry VIII's Secretary of State, who then obtained the property for himself, including the episcopal house of Beaudesert (Colvin 1985, 107). It was Paget's second son Thomas, however, who undertook the task of converting the former bishops' house into an Elizabethan mansion, the work being carried out between 1573 and 1583. An extensive programme of works oversaw the demolition of most of the medieval house (including the chapel), the main exception being at least part of the great hall, which was incorporated into the new house as a rear wing of the east-facing main range. The principal fabric used in the new build was red brick, which

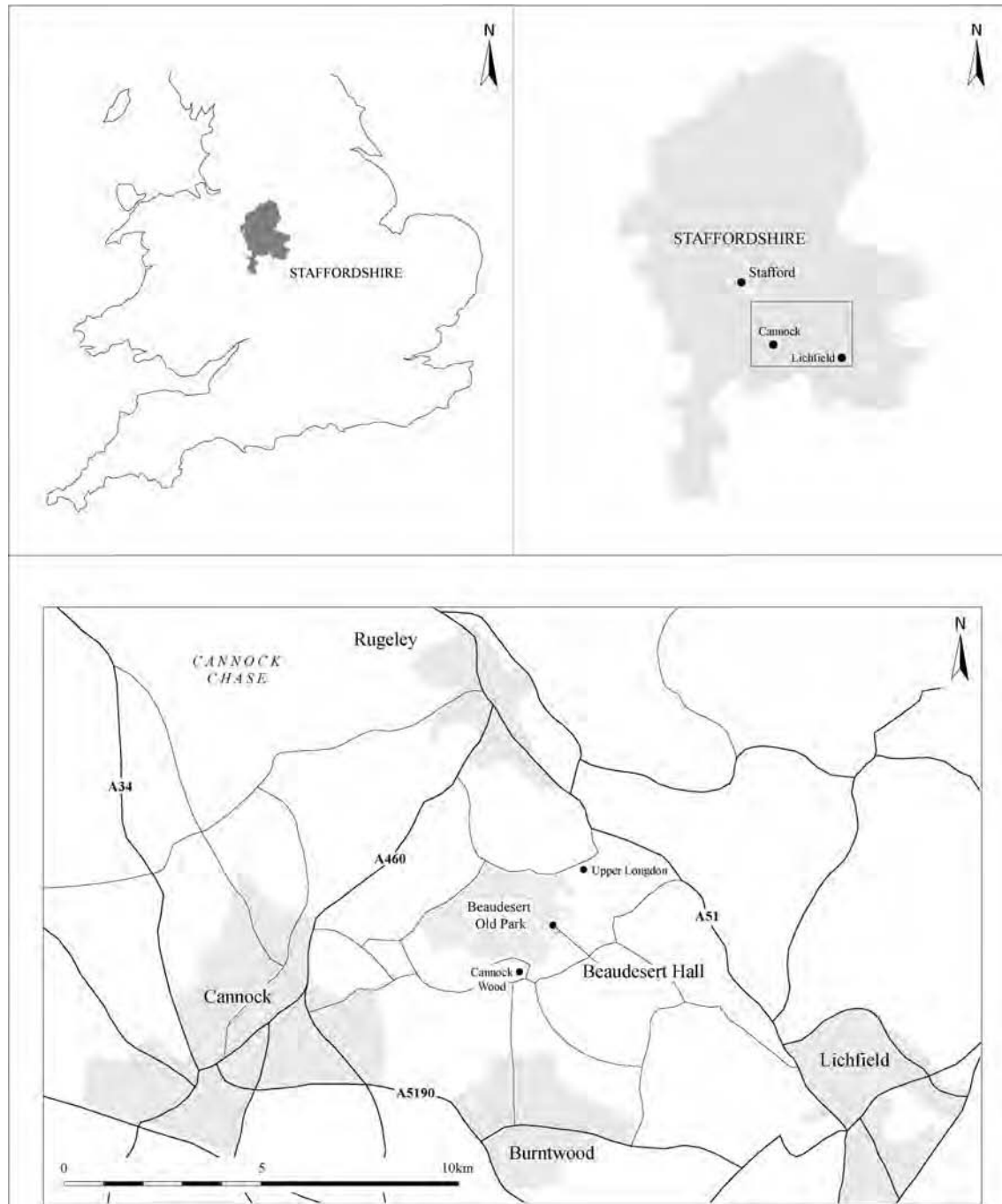


Fig. 1 Site location

was largely sourced and fired on-site, although some bricks were purchased from manufacturers at Brereton and Lichfield (Castlering Archaeology 2005, 3); stone dressings were quarried on site and at Rugeley (Colvin 1985, 109). Lord Paget's religious and political sympathies led to his precipitate departure into exile in 1583 and the confiscation of his estates, so bringing about a brusque curtailment of the works at Beaudesert (Colvin 1985, 110).

The property was regained in 1597 by Paget's son, William, who probably built a gatehouse and forecourt before he died in 1628. No further substantial works appear to have been done at Beaudesert until 1771–2 when extensive alterations were carried out by the Wyatt family, the leading architects and builders in Staffordshire at the time (Colvin 1985, 112–14). One of the main tasks was the 'gothicking' of the medieval great hall, and although very little is known of the interior composition, the plans show a music gallery at one end supported by quadrilobe columns, and it is

known that Gothick chimney pieces of Roach Abbey stone were inserted. A central leaded cupola was constructed on the roof and stucco was applied to the brickwork.

In 1826 the Great Hall was remodelled again by Henry Paget, marquess of Anglesey, to designs by the Wyatts' associate and successor Joseph Potter, who remodelled the hall 'in a style of Gothic, a little more archaeological than Wyatt' (Colvin 1985, 120). This scheme included a projecting billiard room to the south, and the construction of a series of greenhouses, which stood against the south wall of the hall and which were recorded in an etching of 1882 (Colvin 1985, 112).

The interior of the house was greatly damaged by a fire in 1909. All vestiges of the Wyatt and Potter schemes were removed in the subsequent restoration, which saw the interior of the house reconstructed as a series of period rooms, ranging from a late medieval great hall to a 'Queen Anne' bedroom (Colvin 1985, 120). In addition, a substantial neo-Elizabethan wing was built immediately to the south of the great hall on the site formerly occupied by Potter's billiard room. The exact relationship of this new wing to the great hall has yet to be ascertained, but photographs published in *Country Life* in 1919 show that they were in very close proximity to one another, the hall being dwarfed by the new wing, but also that the south windows of the hall still emitted light, suggesting that there was space between the two structures.

The poor financial climate and the burdens of taxation of the post-World War I period forced the sale of the Beaudesert estate. The marquess ceased to use the house from 1920, being unable to afford the running of two country houses (Beaudesert and Plas Newydd in Anglesey) and a town house in London. Much of the land was sold off to the Forestry Commission in 1920 and the house put up for sale. Despite the rest of the estate being completely sold off by 1932, the building remained unsold when in 1935 the marquess decided to sell the interior fixtures and fittings and demolish the building. The demolition firm was given 15 years to undertake the work; however, they went out of business during World War II with the ruins as they stand today still awaiting demolition. Even though these were subsequently listed in the 1950s, the Territorial Army used explosives in the 1970s to collapse a concrete pad into the cellars under part of the building (Michael Street, *pers comm*), whilst part of the ruins recently suffered structural collapse.

BUILDING DESCRIPTION

Summary

Three main elements of Beaudesert Hall which have survived the demolition (Figs 2–3) are: (a) the south wall of the medieval and later great hall; (b) a parallel wall that formed the north side of the great hall in the post-medieval period together with an attached fragment of the west wing; and (c) the north-west angle of the 16th-century house. A cursory inspection of these remains reveals that a great deal of repair, alteration, and remodelling has taken place subsequent to the replacement of the medieval house with the 16th-century mansion. The earliest visible fabric is the late 15th-century sandstone ashlar of the great hall, and while 16th-century and 19th-century stone phases have also been discerned, most of the subsequent work is in red brick of varying sizes and manufacture, ranging in date from the late 16th century to early 20th century. In addition, a great part of the remains appears to have been underpinned with concrete in the early 20th century.

The Great Hall South Wall (Figs 4 and 5, Plate 2)

Phase 1: 15th century

Of the bishops' house only the south wall of the great hall survives above ground level. This shows that the hall was built of sandstone ashlar, and although only limited expanses of the medieval fabric are still to be seen on the exterior (south) elevation (Fig. 4), they include a chamfered plinth and, more significantly, three large late 15th-century Perpendicular transomed windows. Set high up in the wall, each window has four lower lights with segmental-pointed heads and four upper lights, of which the round trefoil heads and sunken spandrels form a single component with the flat lintel. Inside, these openings are provided with Tudor rere-arches composed of two-stone lintels (Fig. 5). Immediately west of the easternmost window is the least altered part of the medieval fabric, an area of large smooth-faced ashlar blocks in regular courses corresponding with the blocks of the window jambs. Directly over the windows, the elevation is capped by a chamfered stone string.

On the interior (north) elevation (Fig. 5) the stonework is not so much in evidence, but most of that which does survive dates from the 15th century. Immediately to the left (east) of the central

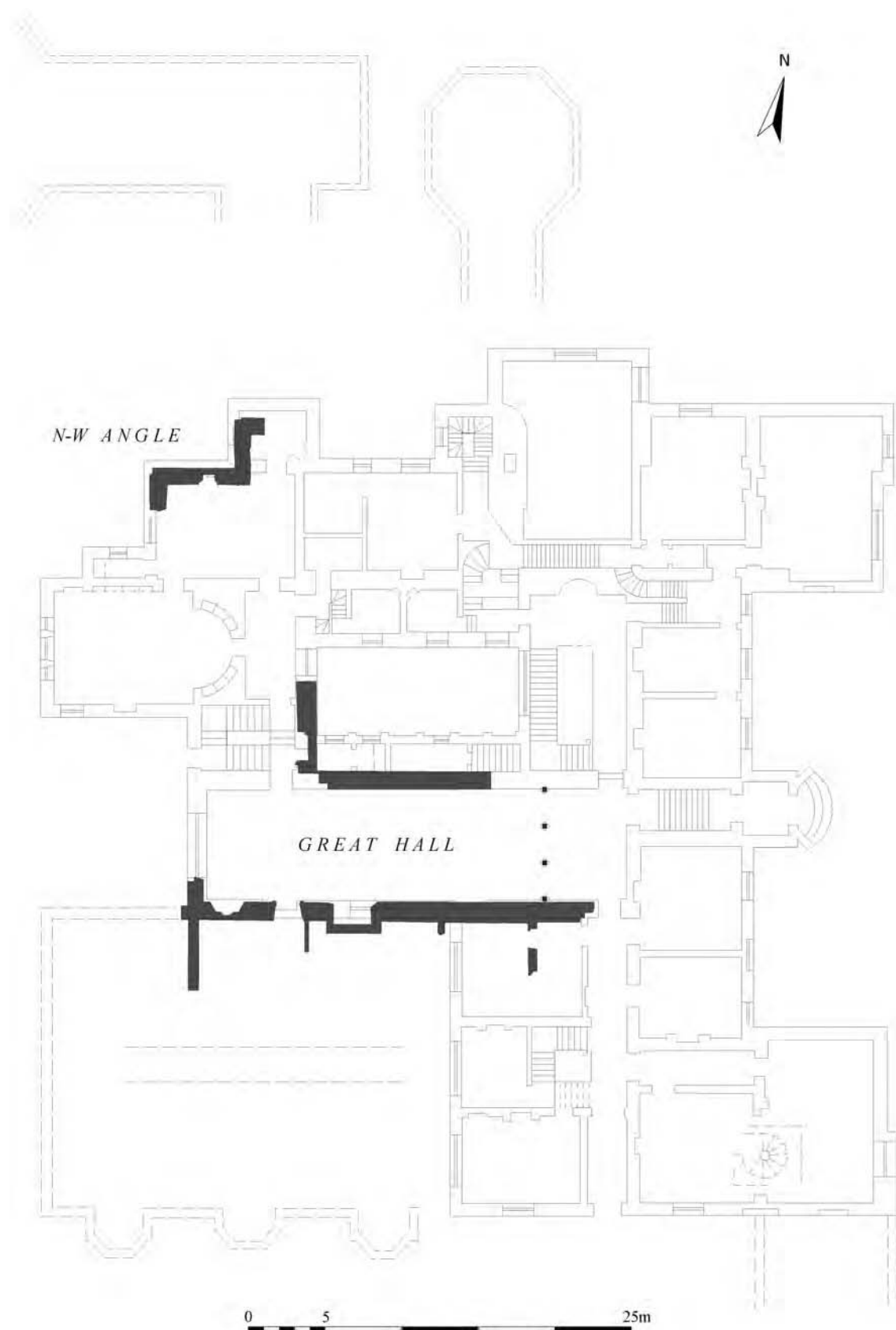


Fig. 2 The recorded remains superimposed over an early 20th-century ground plan of Beaudesert Hall

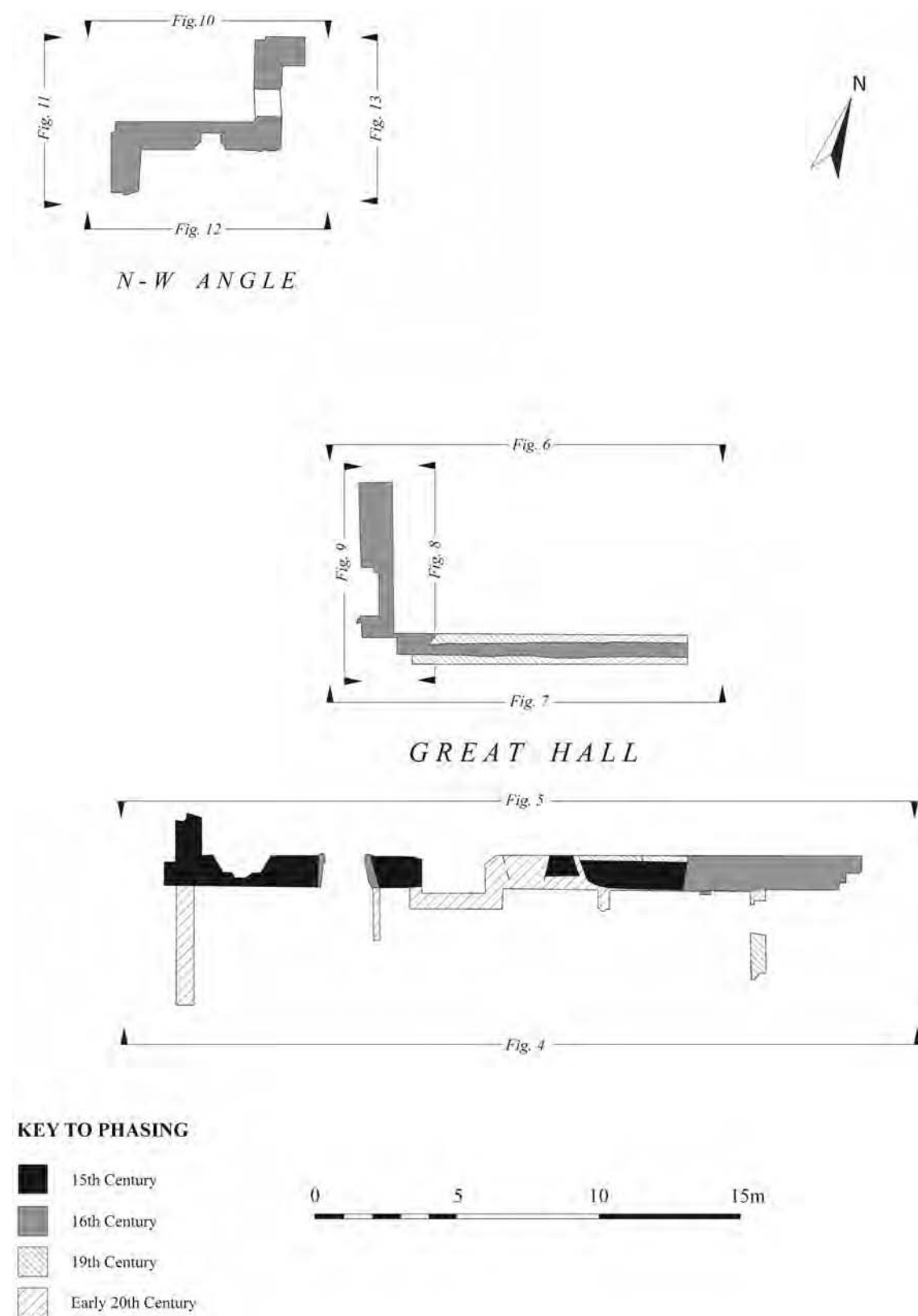


Fig. 3 Phased plan of the remains



Fig. 4 Great hall, south wall: south (exterior) elevation

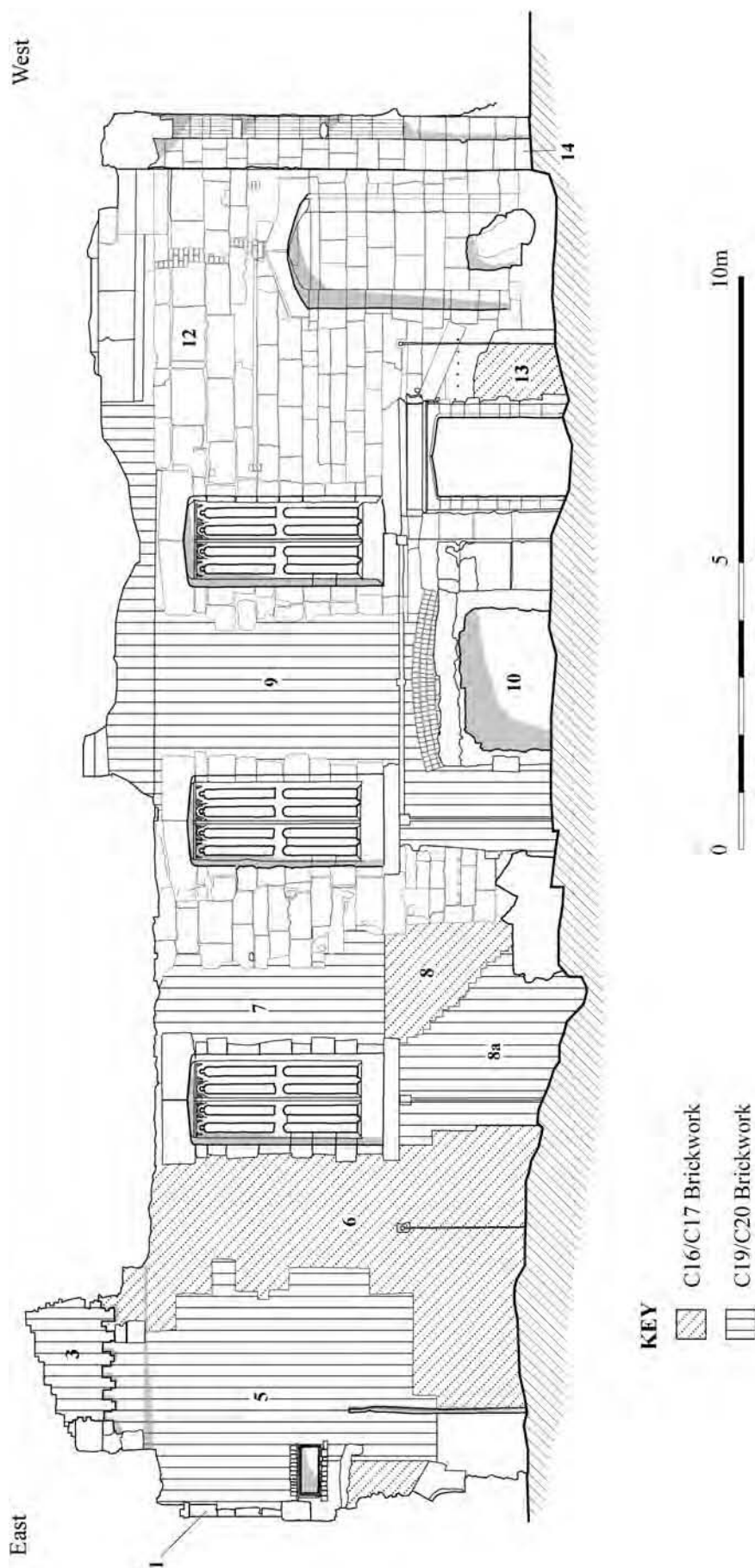


Fig. 5 Great hall, south wall: north (interior) elevation

window there is a full-height strip of contemporary masonry, although the principal extent of 15th-century fabric is at the west end of the elevation, a part of the wall that has been obscured on the south side by later rendering. This is of green sandstone ashlar ranging from small to very large blocks (Fig. 5, **12**). The principal medieval feature here is a tall blocked 15th-century window with a four-centred rere-arch and what appear to be the remains of a window seat within the embrasure.

At the right-hand (western) extremity of the elevation, the wall (Fig. 5, **14**) returns to the north to form the stub of the west end wall, which, despite a straight joint with the south wall, appears to be contemporary with the late 15th-century stonework. Immediately to the left (east) of the blocked window, and bounded to the east by a 16th-century doorway, is an anomalous area of masonry that requires comment. The lower part of this space (**13**) is infilled with 16th-century brickwork, above which is a large stone block with raking soffit turning in at the bottom to stand on one of the stepped jamb stones of the adjacent window embrasure. This stone is surmounted by a long stone block set at a raking angle of about 25° to the horizontal, its lower end towards the window embrasure and its upper end, which is cut to the perpendicular, set against the east jamb of the 16th-century doorway. It is bonded tightly within the surrounding stonework, and in particular the west end is seated within a block of stone cut specially to provide a housing. Further complication is to be found in four stone courses above this stone, where a joggled joint apparently denotes a lintel over a former opening which is now partially occupied by the 16th-century doorway. This feature seems to be the remnants of a low four-centred opening, probably a fireplace, set beneath a triangular-shaped relieving arch formed by two flat stones, the apex of which was set beneath a joggled lintel.

The structural arrangement of the fireplace is an unusual one, although there are good 15th-century parallels for certain masonry details. Thus, joggled joints, of a type, were used in a similar manner at Tutbury castle in the south tower of 1442–50, where they appear over the fireplace lintels, and in the north tower of c 1457–c 1460, where they are to be found over the lintels of the window embrasures. Triangular relieving arches are known from the great tower of Ashby de la Zouche castle of c 1480 where they appear over fireplace and window lintels. Clearly both these elements were part of the repertoire of 15th-century masons in the Midlands, and so there is no good archaeological reason why they should not be considered as part of the medieval fabric at Beaudesert.

Phase 2: 16th century

In the course of Paget's late 16th-century reconstruction of Beaudesert the south wall of the medieval great hall was extended eastwards to become part of a rear wing to the new house, and the fabric to the east of the easternmost window is now entirely comprised of post-medieval brickwork. On the south side, the stub of a former north–south aligned wall (Fig. 4, **15**), which breaks forward from this expanse of brickwork to divide it into two areas, denotes the former west wall of the 16th-century south cross-wing. Thus, the eastern end of the south elevation represents an internal partition rather than an external wall. The late 16th-century brickwork survives in two main stretches: (a) immediately east of the easternmost great hall window (Fig. 4, **14**) and (b) at the eastern extremity of the elevation (Fig. 4, **17**). The bricks measure $9\frac{3}{8}\text{ins} \times 4\frac{3}{8}\text{ins} \times 1\frac{7}{8}\text{ins}$, are laid in English bond, and are generally orangey red in colour with a rough texture. At the eastern end of the elevation, contemporary with the brickwork, are a fragment of a cut-stone arch (**18**) at ground level and the remnants of a cut-stone jamb (**19**) at first-floor level; these features represent the positions of two former doorways, both of which are also visible on the north elevation. The ground-floor entrance gave access from the south cross-wing to the screens passage at the lower end of the extended hall and the first-floor entrance to the gallery above it. A large area of early brickwork also survives within the north elevation immediately east of the easternmost window (Fig. 5, **6**); these bricks measure $8\frac{7}{8}\text{ins} \times 3\frac{7}{8}\text{ins} \times 2\frac{1}{4}\text{ins}$, and are poorly fired, reddish orange in colour, and laid in English bond.

Between the central and western windows, an external stone chimney stack (Fig. 4, **7**) was built. Constructed of crisply cut sandstone ashlar, it projects slightly above the surrounding walling. Survival of 16th-century masonry within the chimney stack is limited, the greatest extent being an area of pinky grey large sandstone ashlar blocks, some smooth faced, some with diagonal-pattern tooling marks, in the middle section of the stack (**7**). A cyma recta moulded string, which has been keyed into the 15th-century window frame a little above the height of the transom, originally extended around the three sides of the stack, but survives only along the two returns, the southern section having been cut away, apparently to provide a flat surface for later rendering that covers the upper part of the chimney (Fig. 4, **7a**). The substantial later alterations to this 16th-century stack will be discussed below.

Towards the west end of the front a Tudor arch doorway with alternating stone jambs and a keystone was inserted at ground level (Fig. 4, 4), breaking through the medieval plinth and the dais fireplace. Internally, this doorway has an ovolo-moulded surround and dripstone with a cyma recta moulded cornice hood (Fig. 5).

A large high window was inserted into the west wall, now evidenced by a vertical section of 16th-century moulded stonework at the north end of the surviving wall stub. Contemporary with this feature is the blocking of the 15th-century window at the west end of the south wall.

Phase 3: Post 16th century

Subsequent works are less easy to situate chronologically. To continue with the brick section that forms the eastern portion of the elevation, apart from the evidently 16th-century work, there are other discrete areas of distinct character, which suggest more than one phase. To the west of the 16th-century south wing is an area of random bonding (Fig. 4, 13), which nevertheless follows the coursing of the adjacent 16th-century work in a manner that suggests a thicker brick with narrower mortar joints. Within the south wing itself, another area of random bonded brickwork adjoining the 16th-century work forms the greater part of the fabric at the lower level (16). This is surmounted by an area of high quality brickwork laid in English garden wall bond. Both these areas of brickwork incorporate horizontal timbers spaced at regular intervals (16, 16a, and 17), apparently for attaching internal boarding or wainscoting. The stub of the west wall of the former south wing (15) is also different in character from the 16th-century brickwork, being mostly constructed of orangey-red brick laid in English garden wall bond. The lower part, however, has been rebuilt in the early to mid 19th century in English bond in order to incorporate a segmental-arched doorway.

The stone section also shows signs of having been modified subsequent to the 16th-century conversion. For instance, the lower part of the chimney stack is evidently of a different character from the middle section described above. This too is ashlar, but it is generally of a pinker hue and while some stones are treated like those of the 16th-century phase, others have herringbone-pattern tooling marks. The ashlar walling beneath the middle window (Fig. 4, 8) appears to be of the same type, and probably represents contemporary work. Reference to the plans drawn up by Joseph Potter for the billiard room that was raised on the south side of the hall in 1826 shows a large opening in the position of the chimney stack, and it seems probable that this phase of stonework represents the remodelling of the hall after the fire of 1909.

Between the central and eastern great hall window there is a large but confused area of disturbance (8a), delineated on the right-hand (east) side at the upper level by a vertical joint in the stonework extending absolutely vertically from just below the parapet string to about transom level of the great hall windows and then stepping down towards the left (west) to merge with a more confused area of disturbance just below the height of the window sills (see next paragraph). Between this line and the upper half of the central window is a roughly square area in which the sandstone blocks stand out in contrast with the surrounding masonry by being set in a comparatively irregular and loose manner, and also by their green tinge. This has the appearance of a blocked opening.

The disturbed area below window sill height, which lies to the right (east) of the area of putative 19th-century ashlar adjacent to the chimney stack, appears to comprise three phases of stone infill, at least partially associated with the addition of a building formerly occupying the angle between the great hall and the south wing of the mansion, directly below the easternmost hall window. This is now represented by the stub of the former west wall which terminates in an ovolo-moulded frontal fillet (Fig. 4, 9), apparently a window jamb (as a series of fixing holes extends down the south edge). This stub wall is capped on the left-hand (west) side by the remains of a moulded stone cornice, behind (east of) which are the remnants of a flat roof of poured concrete, the other (east) end of which (Fig. 4, 10) was secured by a steel joist within the south wall stub of the former 16th-century south wing above an inserted doorway. The evidence for a single-storey building with a flat roof suggests that a blocked square socket in the wall of the great hall straight above the remains of this wall was a keying-in point for a former parapet. Inside this added structure the north wall is of painted plastered brickwork divided into two areas by a wall scar which hints at an internal division of the room.

Further evidence of structural additions to this side of the building can be found towards the west end of the elevation. Firstly, projecting from the right-hand (east) edge of the chimney stack, at about mid-height, is an inserted stone (Fig. 4, 20), evidently the springer of a high arch that extended towards the south. At the same height, on the opposite side of the stack, is another inserted stone

flush with the face of the stack (Fig. 4, 21), as if it replaces a corresponding feature or represents an abortive attempt at something similar. Above the eastern stone a pronounced wall scar extends to the top of the stack. A less marked change in the character of the stonework on the west side of the stack suggests a corresponding arrangement. The upper part of the stack from the level of the moulded string is rendered, the rendering being bounded on the right (east) by the wall scar but otherwise covering the whole south face of the stack at this level.

To the left (west) of the stack the remains of two walls built of squared and coursed stone project from the south face of the elevation (Fig. 4, 1 and 6). It is clearly evident that the wall at the extreme west end of the building (1) rose to the full height of the hall. The other (6), which lies immediately to the right (east) of the 16th-century doorway and below the westernmost hall window, survives only to the height of the door arch, but a cut-out in the stonework just below the window (Fig. 4, 5) may indicate a keying-in point. The interior faces of the two walls are rendered, a treatment that is also applied to the face of the south elevation (Fig. 4, 2), indicating that the area delineated by the two walls was enclosed, and that it formed an exterior space, that is to say, a yard. The eastern wall is so placed as to suggest that it must have blocked the west window, at least partially. This tends to be confirmed by the survival of rendering on the west side of the window lintel. Within this area, in the top right-hand (east) corner of the elevation, is a line of five joist slots, contained to the left (west) by a vertical line of exposed brickwork which rises to the top of the elevation. This arrangement seems to represent an enclosed platform possibly associated with roof maintenance.

The tentative conclusion to be drawn regarding the relationship of the south side of the great hall and the wing of 1909–1912, then, is that there was a gap or yard between the two buildings at the west end, but that the east end was connected to the wing via a single-storey link which also communicated with the south wing of the Elizabethan house.

On the north side of the wall much of the brickwork towards the east end of the elevation (Fig. 5, 3, 5, 7 and 8a) is of 19th- or 20th-century date. To the right (west) of the central window, corresponding with the external chimney stack, are the remains of a fireplace with a rendered brick lintel and brick relieving arch, brickwork of similar character being carried up to full height and occupying the entire width between the central and westernmost of the three great hall upper windows, and extending beneath the western window for about two thirds of its width. All this brickwork appears to date from the early 20th-century restoration of the house and helps to confirm the proposed early 20th-century rebuilding of the lower part of the chimney stack and the area of walling to the east of it (see above).

The Great Hall North Wall

North (Exterior) Elevation (Fig. 6)

This elevation is completely of red brick and appears to be a later facing built up against an earlier elevation, parts of which are just visible above the top of the wall. A patch of early brickwork laid in English bond survives low down at the west end of the wall (9), where it is abutted by the east wall of the west range, but the greater part of this face is constructed of mid to late 19th-century orangey-red brick (9¼ins × 4¼ins × 2¾ins) laid in English bond (3). High up in the elevation a double row of headers denotes a horizontal joint, above which are bricks of different character (2), signifying that the facing was constructed in two separate phases. Evidence of a first-floor chamber, straddling these two main brick phases, is to be found on the right-hand (west) side of the elevation in the form of a row of joist sockets and a wall scar (6) which define an area of plastering (8). This room seems to have been entered from a first-floor doorway at the south end of the west range east wall. (7)

South (Interior) Elevation (Fig. 7)

The interior (south) elevation has no correspondence with the exterior, nor does any part of the wall have any characteristics in common with the south wall of the great hall, to the extent that amongst the many structural phases there is no evidence of any medieval fabric. In this latter respect, it must be noted that the westernmost section of the wall had collapsed in the months prior to the survey to reveal a large straight joint (with the exterior facing?) and a rubble brick core. Beneath this collapse is the remnant of a brick arch with a cut stone fill.

The earliest fabric, which appears to date from the late 16th century, consists of a thin brownish-red brick laid in English bond. This is to be found to the right (east) of centre in a small area close

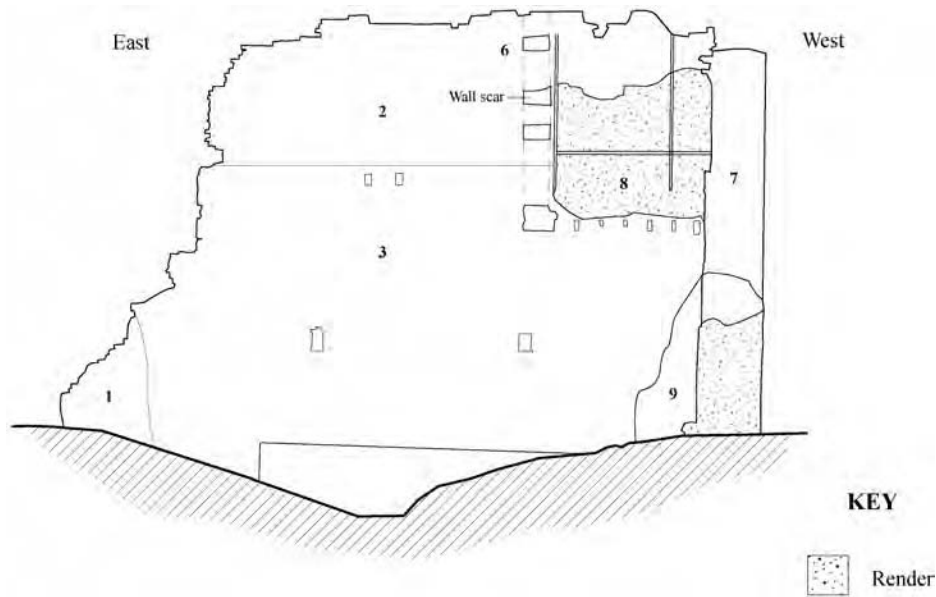


Fig. 6 Great hall, north wall: north (exterior) elevation

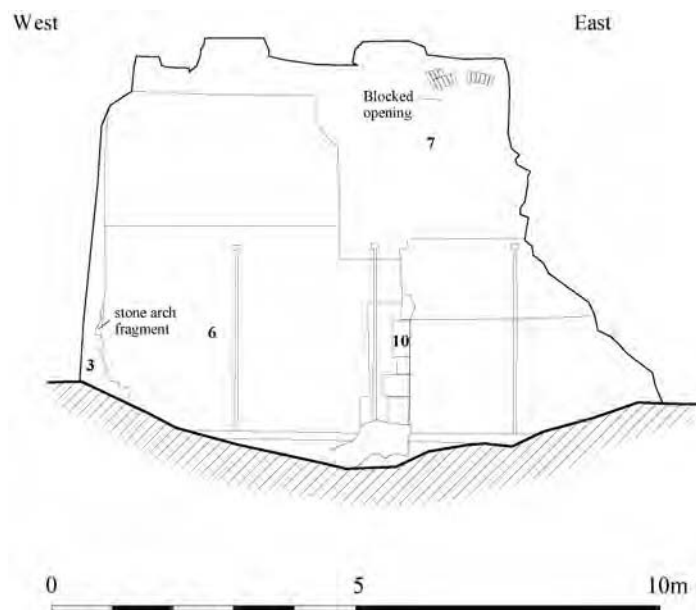


Fig. 7 Great hall, north wall: south (interior) elevation

to ground level (**10**), and in larger expanses on western side (**3**) and at the top of the elevation (**7**). At the upper east corner of this section is a segmental arch, possibly the remains of a window, consisting of one row of stretchers surmounted by one row of headers. The rest of the brickwork in this elevation is 19th century in character, although there are several different phases. At the foot of the wall is a 19th-century semi-circular arched culvert just visible above ground level.

The West Range East Wall

East (Exterior) Elevation (Fig. 8)

A straight joint clearly exhibits that the south end of the wall abuts the great hall north wall. The elevation itself is largely composed of late 16th-century orangey-red brick (9ins $\times$ 4 $\frac{3}{8}$ ins $\times$ 2 $\frac{1}{4}$ ins) laid in English bond (**3**). The survival of large expanses of render (**2** and **5**) suggest that some areas were completely covered at one time. Towards the right-hand (north) side of the elevation a vertical line of disturbance in the brickwork rising to first-floor level is probably best interpreted as a

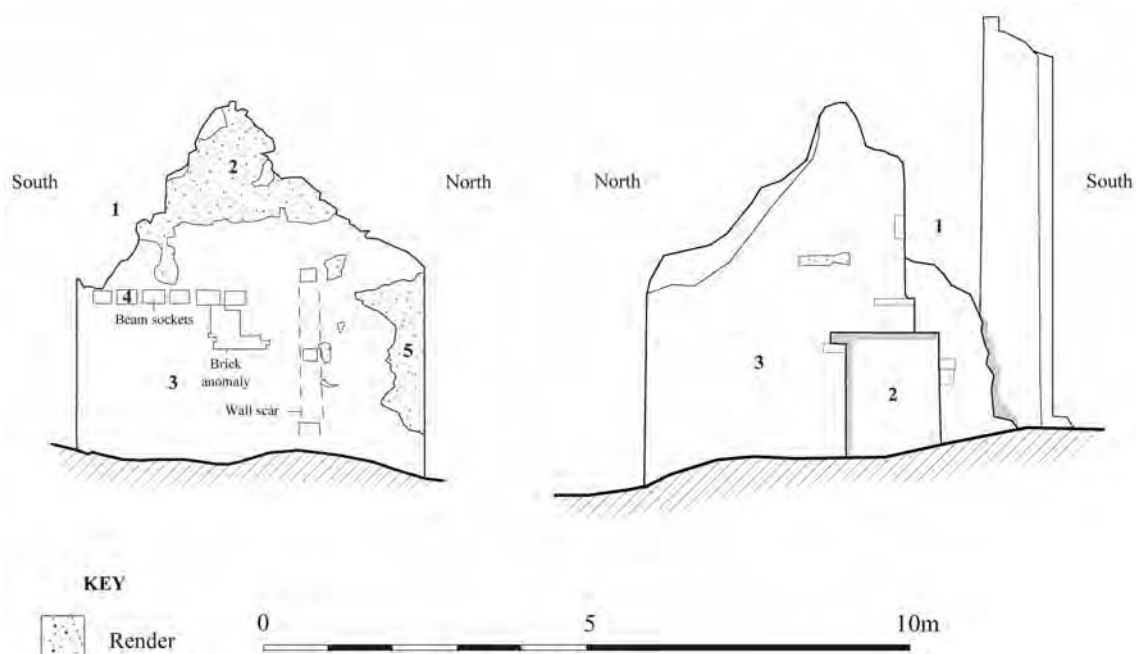


Fig. 8 West range, east wall: east (exterior) elevation

Fig. 9 West range, east wall: west (interior) elevation

wall scar. On the left-hand (south) side, at a height of approximately 2.2m above ground level, is a row of six blocked square openings (4) and, below the two northernmost, a patch of 19th-century well-fired smooth red brick which contrasts with the 16th-century fabric. At the top left (south) of the elevation, at first-floor level, is the surviving south jamb of the doorway (1) described under the great hall north wall.

West (Interior) Elevation (Fig. 9)

This elevation has also been subject to recent collapse, prior to which it abutted the north wall of the great hall. The elevation is largely made up of late 16th-century poorly-fired red brick laid in English bond measuring $9\frac{1}{8}\text{ins} \times 4\frac{3}{8}\text{ins} \times 2\frac{1}{4}\text{ins}$ (3). To the right-hand (south) side of the elevation, at ground level, there is an alcove or blocked entrance (2) approximately 1.3m wide. Further to the right (south) is the first-floor doorway (1) described above.

The North-West Angle

The core of the north-west angle of the ruins is made up of late 16th-century fabric, principally brick, with some coursed and dressed stonework, possibly re-used material from the episcopal house. A late 18th-century first-floor plan (Colvin 1985, 119) shows that these external walls contained a bedroom and a servant's room. Again, there are a number of phases of repair and infill, normally executed in red brickwork.

North (Exterior) Elevation (Fig. 10)

The main section to the right (west) is largely constructed of late 16th-century orangey-red brickwork ($9\frac{1}{4}\text{ins} \times 4\frac{1}{4}\text{ins} \times 2\frac{1}{2}\text{ins}$) (6) laid in a random bond. However, it sits on a chamfered stone plinth incorporating a double-rebated basement window and sections of coursed stonework (7), including much of the right-hand (west) angle. Immediately above the right-hand (west) jamb of the basement window a vertical joint in the fabric is clearly demarcated in stone to the right (west) and orangey-red 19th-century brick to the left (east). This structural division continues above the stonework to form a joint between the two phases of brickwork, its verticality becoming less regular as it approaches first-floor level, where it becomes obscured by patches of rendering; it is not evident in the fabric of the upper storey. To the right-hand (west) side of the elevation at first-floor level is a doorway with brick-faced stone jambs and a timber lintel. This doorway is explicable as a 19th- or 20th-century insertion for an extension to the north side of the block.

The left-hand (east) section of the elevation which breaks forward from the main section is the stub of an external wall which formerly extended further to the left (east). This is faced in well-fired red brick laid in what appears to be Flemish bond. Two sections of moulded stone window jambs (9) are exposed here. Scarring on the right-hand (western edge) denotes the former position of a north-extending wall, the footings of which consist of stone blocks. Ground level is supported by a rolled steel joist (3) at basement level which is in turn supported by a low brick and stone wall extending eastwards.

West (Exterior) Elevation (Fig. 11)

The elevation is composed of two sections, the left-hand (north) one being set back from the right-hand (south) one. The right-hand section (5) is of coursed and square stone blocks and incorporates a number of put-log holes. The character is not inconsistent with a medieval date but, on the other hand, the masonry is quite different from the 15th-century work in the south wall of the great hall. Equally this wall could represent 16th-century fabric, perhaps re-using medieval stonework, although this itself is at odds with what was essentially a brick house.

The lower courses of the north side of this elevation are also of sandstone blocks brought to courses (1). The rest of the wall, apart from areas of 19th-century brick infill (3 and 4) is faced in orangey-red brick laid in Flemish bond and struck-pointed in the Georgian style (2). The wall is pierced by doorways at ground- and first-floor levels. Beam sockets at first-floor level are related to a structure previously situated to the north and west.

South (Interior) Elevation (Fig. 12)

The interior (south) elevation is largely brick built, and the stub of the former external west wall breaks forward from the extreme left (west). This wall stub is made up of rubble stone and cut stone, and, particularly at ground-floor level, orangey red brickwork measuring $9\frac{1}{8}\text{ins} \times 4\frac{1}{4}\text{ins} \times 2\frac{3}{8}\text{ins}$.

Ground-floor level has been subject to much alteration and infill, and little of the original brickwork survives, having been largely replaced with late 18th- to early 19th-century orangey-red brickwork (7), $8\frac{3}{4}\text{ins} \times 4\text{ins} \times 2\frac{3}{8}\text{ins}$, with some blue brick inclusions, laid in a random bond. The main feature at ground-floor level is a fireplace which exhibits a number of phases, comprising a high and wide segmental arch opening which was later truncated, infilled and replaced by a lower and narrower segmental arch fireplace opening. The fill around this later opening (11) is also partially of blue brick, whilst the back section of the flue is made up of finely jointed ashlar stonework. It would seem likely that the original fireplace was added here as part of improvements in the late 18th century, only to be modified as taste and trends changed at a later date, at some stage in the 19th century.

At first-floor level much of the early brickwork (4 and 5) has been retained, and although no particular bond can be discerned, it displays a heavy use of headers, to the extent of having several consecutive rows of headers in places, as found in the late 15th century at, for example, Kirby Muxloe castle (gatehouse) of c 1480. Floor level here is demonstrated by a large central beam socket. In the west wall stub is the north jamb of a former window (1), similar in detail to that at the west end of the hall and probably of similar (late 16th-century) date. Immediately to the east of this window, in the north wall, is a square-headed doorway (3) of well-executed ashlar with a chamfered surround. This is not obviously an insertion, because it sits well within the surrounding brickwork, but it is problematic as an original feature because it is in an external wall and is rebated on the exterior side, as though it gave access to another chamber. At the right-hand (east) end of the elevation are the remains of a fireplace, which also appears to be much altered, with three distinct brick fills on its back wall, including a square section of herringbone brickwork (6). There are few clues to its date, although it appears to cut the early brickwork and is shown on the late 18th-century plan.

East (Interior) Elevation (Fig. 13)

The eastern interior face comprises three distinct sections: (a) the internal (east) face of the west wall, which is set back to the left (south); (b) the main central area; and (c) the stub of the adjoining north wall, to the right (north), which breaks forward from the elevation.

Most of the west wall to the left (south) is of a late 16th-century date. Ground-floor level is made up of a pale reddish-orange brick measuring $9\frac{5}{8}\text{ins} \times 4\frac{5}{8}\text{ins} \times 2\frac{3}{8}\text{ins}$ laid in English bond (2), much of it coated in a creamy white render. The upper level (1) consists of cut sandstone blocks brought to courses interspersed with bands of brickwork. Much of the remainder of the elevation has been subject to repair and infill.

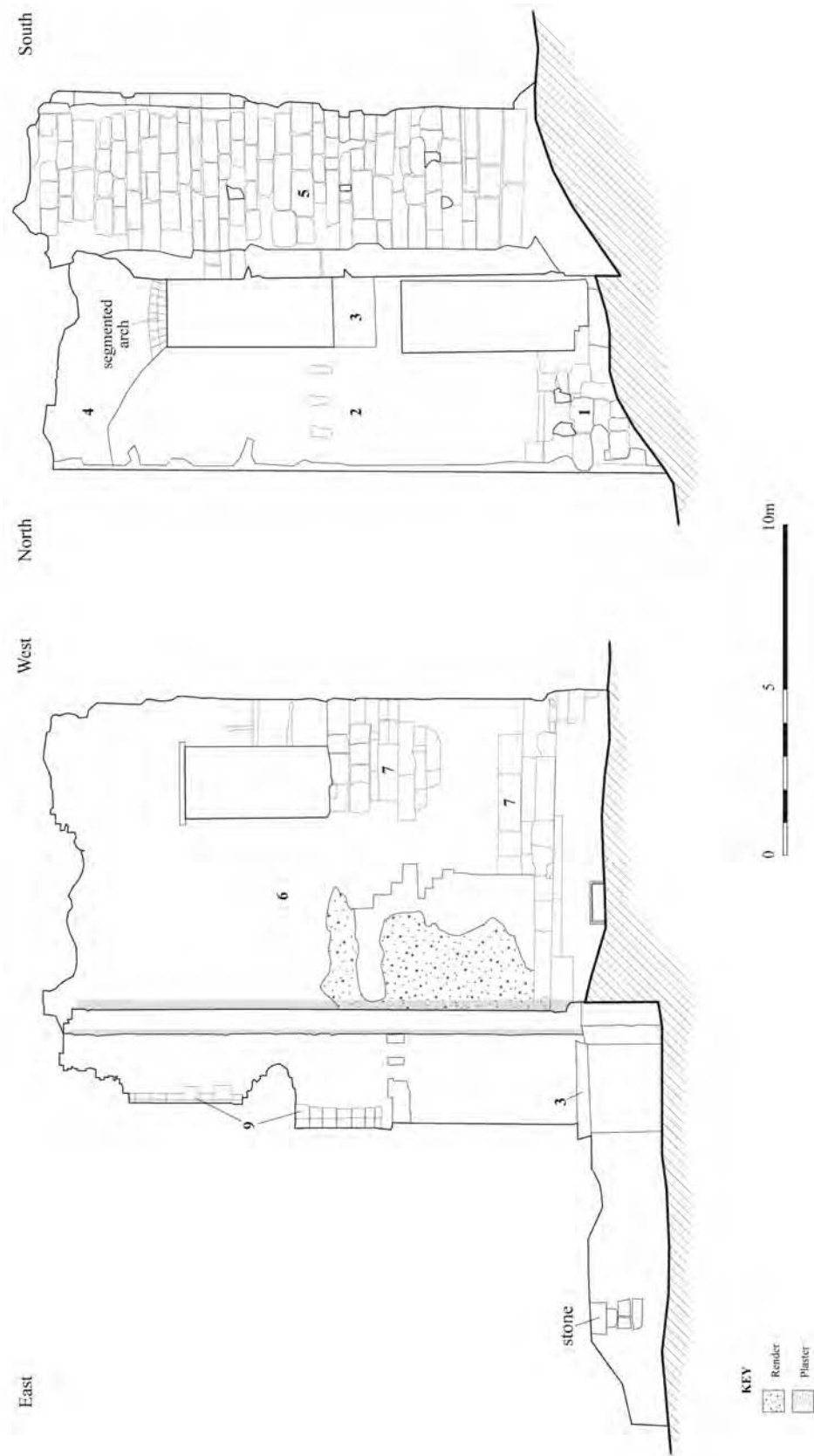


Fig. 11 North-west angle: west (exterior) elevation

Fig. 10 North-west angle: north (exterior) elevation

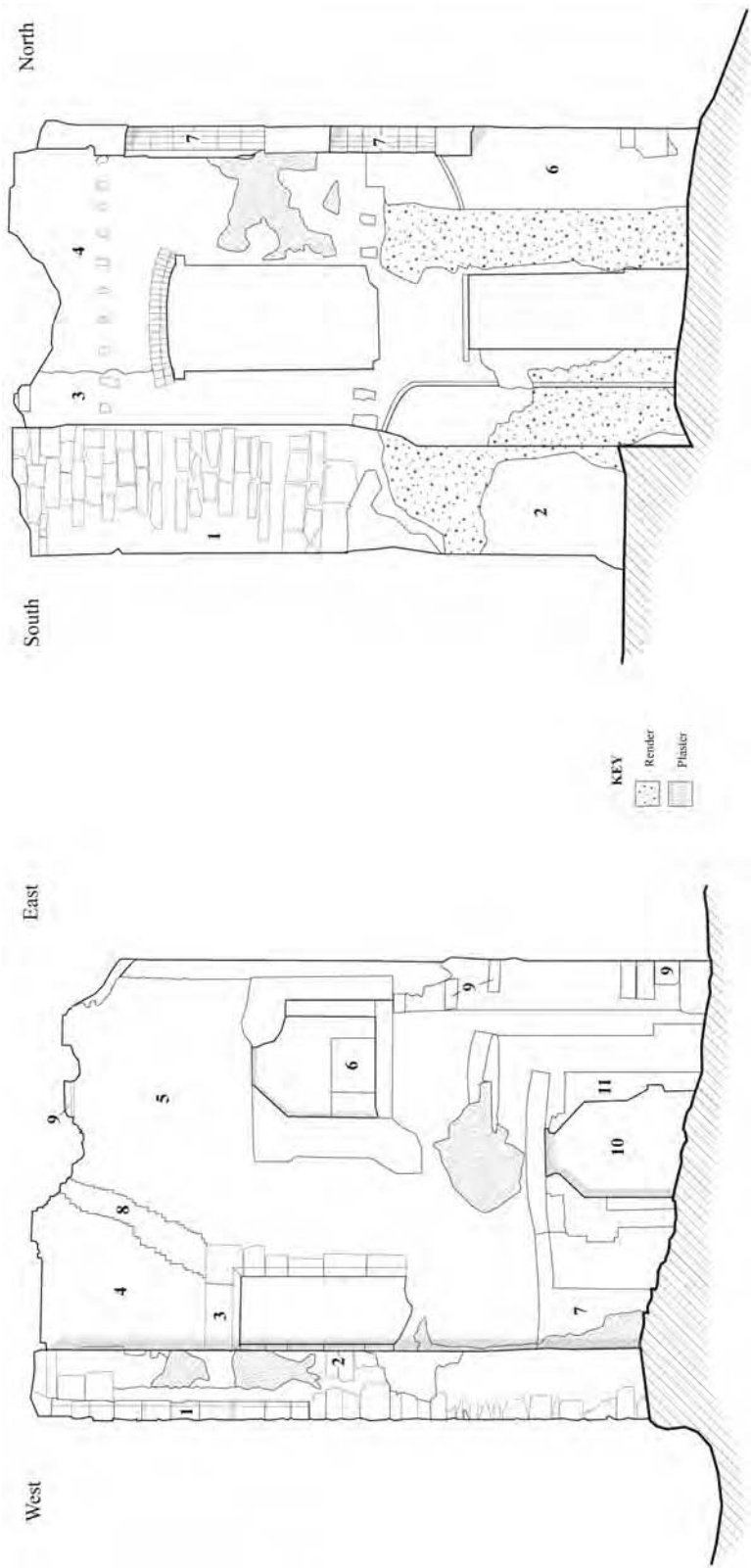


Fig. 13 North-west angle: east (interior) elevation

Fig. 12 North-west angle: south (interior) elevation

Areas of original late 16th-century brickwork (3) are still extant in the main section, although quantification is compromised by the fact that the elevation has been substantially obscured by rendering. There has, however, been a good deal of replacement in late 19th- or early 20th-century well-fired orangey-red brick, laid in English bond, which is particularly evident at first-floor level. There are two main features: a roughly central doorway at both lower and upper levels. The ground-floor doorway has a timber lintel and the first-floor one a brick segmental arch, and appears to be contemporary with the surrounding late 19th- to early 20th-century brickwork. Neither is traceable on the late 18th-century plan, and both must be related to a 19th- or 20th-century phase to the north of this wing.

The stub of the north wall (6) to the right (north) is of well-fired red brick laid in English bond, probably of 19th-century date. It is likely that this represents refacing, however, because the wall incorporates the western jambs two windows with moulded stone surrounds (7). The mouldings are consistent with those of other windows at Beaudesert which have been assigned to the 16th century. It is noteworthy that the positions of these windows do not correspond very well with the floor levels denoted by the joist sockets and doorways, so it is probable that the latest layout represents a major remodelling of this area.

ARCHITECTURAL CHARACTER AND CONTEXT

The Medieval House

The survey has confirmed that despite the vicissitudes of 500 years, the ruins of Beaudesert Hall include a significant fragment of the medieval episcopal house in the form of the south wall of the great hall. Although the date of the building is not known to be documented, the architectural character of the south wall points to the late 15th century. The high quality smooth-faced ashlar is of comparable quality to that of other 15th-century great houses in the region, e.g. Wingfield Manor House, Derbyshire (c 1440–c 1446), the south and north towers of Tutbury castle (1442–50 and 1457–c 1460) 15 miles to the north-east, or the great tower of Ashby de la Zouche castle (c 1474) 21 miles to the east. Most noteworthy amongst the stone details are the late 15th-century principal side windows, which combine square-heads without labels, sunken spandrels, trefoil-headed upper lights, and segmental-pointed lower lights. The depressed four-centred and Tudor forms of the rere-arches are also compatible with a date in the 15th century, for although they were eschewed by the builders of the south and north towers of Tutbury castle, both four-centred and Tudor arches appear in Wingfield Manor and four-centred arches of a more pronounced character than that at Beaudesert were used at the castles of Ashby de la Zouche and Kirby Muxloe (1480).

Although the physical remains of the medieval house are slight, they are sufficient to tell us something of its character and layout. Regarding the great hall, the south windows would, of course, have been replicated in the original north wall. If the chimney in the centre of the south side is an insertion, then we can probably assume that in the 15th century the hall would have been provided with an open hearth, in common with its counterparts at Wingfield Manor and Ashby de la Zouche castle.

It is apparent that the upper end of the hall lay towards the west, a probability suggested by the blocked window, possibly an oriel, at the west end of the south wall, which seems to have been situated to light the dais and allow the occupants a view of the exterior. Emery (2000) considers that this window would have lit the chamber block prior to the latter being incorporated into the hall in the 16th century; there is, however, no structural evidence for a transverse division at this position. Emery's argument that had the hall extended as far as the west wall it would have been unusually long for its width, is based on the assumption that the existing north wall marks the position of the medieval wall. The present wall, however, contains no medieval fabric and may be entirely a creation of the 16th century. The possible remains of a lateral fireplace to the east of this opening might have provided additional comfort for the denizens of the high table.

If the upper end was to the west, it is almost certain that the principal access to the room would have been at the opposite end in one or both of the two side walls, so creating the traditional cross-passage, which is likely to have been screened from the hall. We cannot at present locate the position of this entrance more exactly: an early 20th-century photograph showing this end of the remodelled hall prior to its demolition catches what appears to be the east jamb of a north doorway, beyond a

screen, but this arrangement is almost certainly a 20th-century creation, and it is probable that the medieval entrance lay either immediately to the west of the southern fenestration or beneath the westernmost of these windows. We should, therefore, consider the hall to have been no more than 65ft (approximately 20m) in length.

The hall would not have stood on its own, but would have been the focus of the usual appurtenances of a great house: kitchen and service rooms, chapel, the private apartments of the lord (in this case the bishop), and accommodation for administrative staff and other members of the extended household. Because the position of the hall is known, and assuming that the conventions of late medieval planning were followed, it is possible to make informed conjectures about the relative positions of some of these dependent structures. The services rooms, pertaining to the storage and preparation of food, including the pantry, buttery, and kitchen would have lain beyond the lower (east) end of the hall with access from the east side of the cross-passage. The bishop's suite, on the other hand, is likely to have been accessible from the upper end of the hall, and it is probable that there were connecting buildings to the west and/or north.

A 15th-century complex of such noble status as that suggested by the remains of the hall at Beaudesert is likely to have taken the form of a courtyard house, and so the suggested position of the bishops' private chambers would support the presence of a court on the north side of the hall. The site would have been a restricted one because the land falls away quite sharply some 15m to north of the hall, but the position would have provided superb views of the chase, which may have been an inducement to site the private apartments on this side. It should be stressed, however, that this presumption of a northern courtyard does not preclude the possibility of a southern courtyard as well, particularly as the topography suggests that the natural approach to the site is from the south. As well as a gateway, such a forecourt is likely to have contained the lesser lodgings, stables, and offices such as the brewhouse and bakehouse.

It has been hinted above, in the descriptions of the building at the north-west angle of the house, that this element could, conceivably, contain medieval material, perhaps both brick and stone, and that this might be another survival from the episcopal house. There is, at present, no definitive answer, yet the building is well situated to have formed one angle of such a courtyard house as has been conjectured. The structure in question has something of the character of a tower, and, as such, would have formed an appropriate architectural component of a complex of this date and status, rivalling the late medieval domestic towers at Tattershall castle (1434), Wingfield Manor House (1440s), Tutbury castle (1442–1460), Ashby de la Zouche castle (1474–83), Kirby Muxloe castle (1480), and Hamstall Hall (c 1500). Situated on the edge of the northern slope, it would have provided an excellent vantage point from which to monitor the chase. This is undoubtedly an aspect of the medieval house that requires further consideration.

The significance of the late 15th-century house at Beaudesert in regional terms is that it represents one of the most important late-medieval great houses in Staffordshire. Even though the upstanding remains may now be confined to the much altered south wall of the hall, there is little doubt that the building was of high quality, and that it once covered a much larger area to form a high status residence comparable with Tutbury castle and Pillaton Hall, the two main 15th-century survivals in the county. On a broader canvas Beaudesert falls within Thompson's 'golden age for the construction of episcopal secular buildings' (Thompson 1998, 143), and so has links with a group of courtyard houses erected during the last hundred years before the Reformation, which includes such edifices as Knole, Hatfield, Hampton, and Fulham. Beaudesert Hall seems to represent the bishop of Coventry and Lichfield's main contribution to this late-medieval building phenomenon.

These late-medieval courtyard houses were characterised by coherent layouts and the use of brick. Only further archaeological work might elucidate the details of the plan, and although brickwork is much in evidence at Beaudesert, none has yet been definitively identified as being of medieval date. Nevertheless, even though the great hall was built in stone, given the proposed date of construction it is quite possible that some of the other structures within the complex were of brick. Such was the case in the archbishop of York's late 14th-century rebuilding of Cawood castle in Yorkshire, where a combination of ashlar and brick was used. In the Midlands, brick had certainly been in use for major residences from the mid 15th century onwards and had become one of the principal building materials for high class domestic buildings by the last quarter of the century, being used at Tattershall castle, Lincolnshire (1434); Kirby Muxloe, Leicestershire (1480); St John's Hospital, Lichfield, Staffordshire (1495); and Hamstall Hall, Staffordshire (c 1500).



Plate 1 The remains of Beaudesert Hall from the south-east: great hall south wall (left), north wall (centre), and north-west angle (right)



Plate 2 The Great hall: south wall from the south-west, with the north-west angle in the background (left)

Later Phases

Apart from the medieval structures, the other elements of the standing remains seem to belong, in origin at least, to the construction of Paget's late 16th-century mansion. Despite the substantial demolition of the Elizabethan house, the survey has thrown some extra light upon the replacement of the medieval house by its successor. It does, for example, seem that the great hall was even more substantially altered than has been generally recognised, the former north wall apparently being pulled down and replaced to produce a narrower hall than the 15th-century original. The extensive alterations to the north wall have obscured the 16th-century scheme, although the very fact that the great hall was largely demolished suggests that the retention of the south wall had little to do with reverence for the past and more to do with emphasising the superiority of the present.

While the north wall tells us little about the 16th-century phase, fabric from this period survives within the south wall. This is, on the whole, represented by thin orangey-red brick laid in English bond, by the sandstone ashlar of the chimney stack, by the blocking of the late 15th-century high four-centred arch window which lit the west end of the hall, and by the moulded stone window jamb surviving on the stub of the west wall. It is clear that Paget extended the hall eastwards, using red brick with cut sandstone dressings, to meet his east-facing Elizabethan mansion. In addition, the cores of the great hall north wall and the west range west wall also date from this late 16th-century phase, as does much of the north-west angle, even though it may contain earlier material.

There does not appear to be much surviving evidence of any of the remodelling work carried out by Wyatt in the late 18th century, and Joseph Potter's hand is similarly elusive, having been almost completely erased by the reconstruction carried after the 1909 fire, which is, to a great extent, represented by distinctive smooth-faced dark red brick as well as fine quality stone in keeping with the south elevation of the hall.

CONCLUSION

The recording and analysis of the fabric has told us a good deal more about the remains of Beaudesert Hall, and about the complexity of its structural history. While this is a step towards a deeper understanding of one of Staffordshire's lesser known great houses, there is still much to be learnt, particularly about the medieval house, the process by which it was replaced in the 16th century, and the extent to which it influenced the character of Paget's mansion. There is certainly a good deal of scope for further research: technically it would be possible to excavate substantial areas of the site; at the very least it would be feasible to confirm the ground plan through a programme of targeted clearance and survey. Although the greater part of the area occupied by the Elizabethan house was cellared, there is scope for geophysical survey to the south of the medieval great hall and the possible site of a medieval outer court. Topographical and archaeological surveys of the landscape setting would be likely to add perspective to the record of the upstanding remains, while a detailed programme of documentary research might draw forth further references to the medieval building and this would allow us to recreate its character more closely. It is to be hoped that it might prove possible to pursue some of these lines of enquiry in the future.

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EXCAVATIONS AT CHURCH HILL, WALSALL

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with a contribution by Steve Litherland

SUMMARY

The following report summarises the results of a programme of archaeological investigation that took place ahead of a major redevelopment scheme on the edge of the historic centre of Walsall. These investigations have added greatly to our knowledge of the town's character and development. This area of historic Walsall has been occupied and reoccupied over the post-medieval period and has seen dramatic changes in use, character and fortune. The hill itself was extensively quarried for limestone, with layers and deposits relating to quarry backfill and some industrial activity being tentatively dated to the 17th century. After the quarrying had ceased, the area was given over to settlement, with the construction, firstly, of large affluent houses along the Upper Rushall Street frontage, and then in the mid to late 19th century smaller slum houses crowded in behind these on the hill. The last of the slums was demolished in the 1930s. The project complements and enhances previous archaeological work in the area, so contributing to a greater understanding of the historic development of the town.

INTRODUCTION

The development area lies on the south-eastern side of a shallow stream valley which runs through Walsall. The land rises from around 125m AOD at the valley bottom to 150m AOD at the summit of Church Hill. The drift geology is made up of sands and gravel at the valley bottom, and clay on the slopes of Church Hill. The hill itself is a limestone outcrop which has witnessed several quarrying and terracing events in its recent history.

The main excavations were located in an area bounded by Bullock's Row, The Ditch, Ablewell Street, and Upper Rushall Street (hereinafter referred to as the Church Hill site), with additional archaeological observation conducted at the car park situated at the east end of the High Street and the adjoining section of the High Street itself (hereinafter referred to as the High Street site, Fig. 1). The results are described in this report and compared with those of other archaeological works conducted previously.

HISTORICAL BACKGROUND *by Steve Litherland*

Walsall is not mentioned in the Domesday Survey of 1086, but most writers have nevertheless suggested that an early settlement is likely to have been located in the area of St Matthew's church (earlier dedicated to All Saints) on the summit of Church Hill. Gould has put forward a case for an original centre further north by the river crossing (Baker 1989, 23; Gould 1983, 1). At present there is no archaeological evidence to support either of these suggestions.

The first definite record of a settlement dates from 1159 when Henry II granted the manor to Herbert le Rous in return for an annual fee farm of £4. The parish church is mentioned for the first time in 1200 when it was granted by the Crown to the bishop of Lichfield. We can expect that Walsall took on an urban status around this time as well: the wide High Street, which runs down from the church, is an obvious planned urban element, allowing room for a street market. William le Rous, the lord of the manor in the early 13th century, was granted the right to hold a weekly market and an annual fair in 1220 and he may have re-planned the settlement around this time. Subsequently, around 1235, he granted burgage tenure to his tenants, freeing them from many feudal services, presumably again to encourage marketing and trading and to increase his own revenue from the manor (Baker 1989, 5, 7, 22).

The town is likely then to have expanded to the north-west, with the laying out of Park Street, southwards along Peal Street and Dudley Street, and to the north-east into Upper Rushall Street and Ablewell Street and also Lower Rushall Street (Baker 1989, 22). While the precise chronology of this development of the early town is uncertain, it is likely to have taken place before the onset of the Black Death and other economic problems of the mid 14th century.

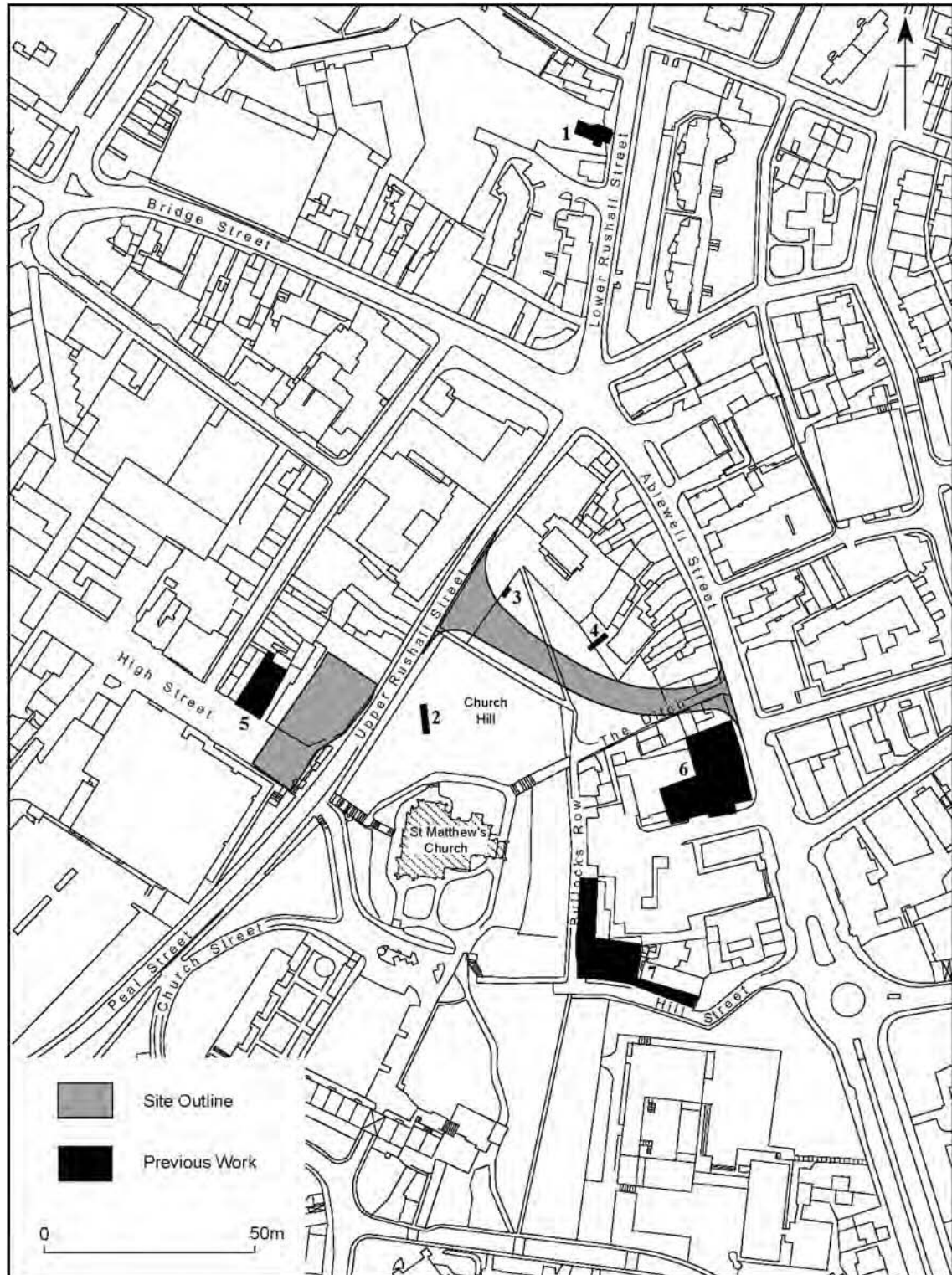


Fig. 1 Location of sites 1–7 and current work

There are indirect early 13th-century references to Rushall Street, and it was first specifically so named in a deed of 1339 (WLHC 63/19). By the mid 15th century buildings on the street included one known as ‘my lord’s inn’, which may have been a precursor of the Bull’s Head coaching inn (Currie *et al* 1976, 146–65). The earliest known reference to Ablewell Street dates from 1309 when it is called ‘Ablewellsych’ (*Ibid* 1976, 146–65). Many early writers have followed Duignan’s derivation of the name as being from a corruption from the Norman French *aval* meaning below or

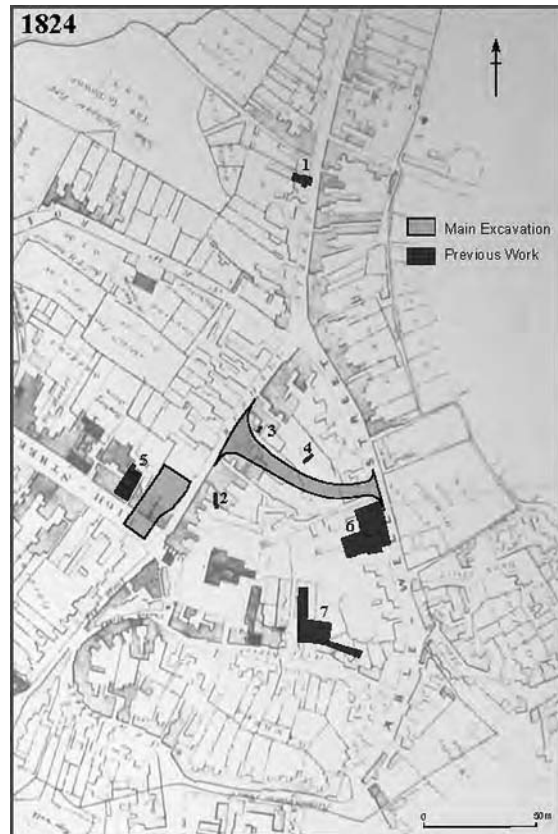
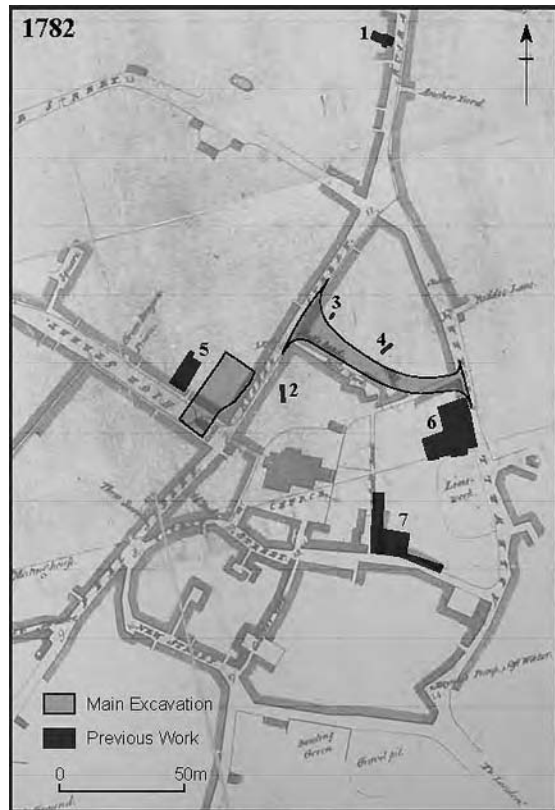


Fig. 2 John Snape's *Plan of the Town of Walsall* of 1782 **Fig. 3** Mason's plan of 1824

beneath, and so signifying below the wall and hence referring to supposed defences around Church Hill (Duignan 1880, 23). The Ditch, which was first mentioned in records in the 17th century, was also used in Duignan's arguments as deriving from 'the fosse which surrounds the fort'. The reality is more prosaic. Wells and springs are common in the area and there is a reference to 'Able Well' as early as the 14th century (Currie *et al* 1976, 221; see also Horovitz 2005, 79), while the Ditch actually runs down from the hill rather than around it and its name presumably derives from the fact that it is cut down into the surrounding land, apparently due to a combination of the effects of foot traffic and water run off from the hill (pers. comm. Mike Shaw).

There are indications that Walsall began to have an industrial character from the medieval period, with the mineral resources of the area being exploited from the 14th century and documentary evidence that lime was being burnt by the 15th century (Baker 1989, 7). The practice was listed as one of the trades of the town c 1494, and limestone was also being used for building by at least the later 1500s and was used in the construction of Rushall Hall and Rushall church (Currie *et al* 1976, 190).

Green suggests that the earliest exploitation of limestone was probably around Church Hill and mentions that old workings were exposed by later building work at the top of High Street and Peal Street (Green 1977, 37). In the 1970s Green recorded a shaft leading to one of these workings, which he accessed via a manhole in the paving close to the church steps. The shaft lay beneath 4 Peal Street before it was demolished in the 1930s and lies less than 100m to the south of the present excavations.¹ Here, Green found some small clay pipe bowls and a leather pitcher, believed to date from the 1600s (Lewis and Woods 1987, 30).

These early limestone workings were either cut from the surface or dug in long galleries underground (Green 1977, 38). In the 1530s Leland mentioned limestone mining along with metal working and bit-making as being characteristic industries of the town (Toulmin Smith 1964, 23),

¹ This shaft probably leads into the same cavern system in which local historian Billy Meikle hid from police after a raid on the nearby Shakespeare Pub in the 1930s.



Fig. 4 Ordnance Survey 1:500 town plan of 1886

and by 1568/9 Walsall was known as a regional centre of lime production and building materials (Humphreys 1918, 18, 39). In 1686 Robert Plot included a description of the quarrying work around Walsall. He recorded that:

...the stone is broken up with iron wedges knocked in at the partitions with great sledges and prized up with great levers with rings around them to stay the feet of the workmen who get up on them, whereof some weigh at least 150 pounds... Notwithstanding which great force the stones will not rise, unless they are softened by fire, which upon that account they are constrained to make upon it.

(Plot 1686, 21)

By the 15th century the metal trades were also firmly established, though Baker notes that the location and distribution of these industries is not particularly clear (Baker 1989, 23). Regarding the character of the area in the vicinity of the site, excavated smithies were recorded on Church Hill and Rushall Street in the early 15th century, and Baker suggests that by the end of the medieval period the metal trades were concentrated in Rushall Street, Hole End, and the Church Hill area, with drapers, mercers, grocers, butchers, lawyers, and innkeepers occupying the High Street area (*Ibid* 1989, 23).

By the 18th century lime was being used in much larger quantities for spreading upon fields to improve their productive capacity, and also in iron making, where, following the adoption of coal rather than charcoal for the process, it was used as a flux that aided the removal of impurities. An area to the east of Ablewell Street was called Lime Pit Bank from at least the 18th century (Currie *et al* 1976, 191) and there was a limestone quarry to the south of The Ditch recorded in 1782 on Snape's map of Walsall (Fig. 2). However, from this period onwards, probably as the limestone beds on Church Hill started to become exhausted, the focus of large-scale limestone mining moved northwards: the present Hatherton Lake within Walsall Arboretum to the north of Church Hill is a flooded quarry (Currie *et al* 1976, 180–206). Some idea of the extent of this trade is indicated by the fact that wagons loaded with limestone products were specifically exempted from tolls when the local roads were improved following the Turnpike Acts (Blay 1932, 7). Lime was also an important ingredient in the tanning process that had existed as an industry in Walsall since the medieval period, although tanning itself was not a really important industry in the town until the 19th century (Glasson 2003).

In the 18th century Rushall Street was generally considered to be a desirable area of Walsall in which to live, with coaching inns and other larger Georgian properties lining the street (Cockayne 1984, 79). There are, however, clear signs of decline during the 19th century, perhaps precipitated by the cutting of Bridge Street between The Bridge and Ablewell Street in 1766. This new street provided an alternative, and much less steep, east–west route through the town centre. Consequently, it took away a lot of road traffic from the upper end of Rushall Street, which in places was only 10 feet wide, and which also had to be approached via a steep incline up High Street (Glew 1856, 35). Cockayne, in his account of the Inns of Walsall recounts a tale of the rivalry between the inns on these roads: the Bull’s Head on Rushall Street and the George on Bridge Street/High Street.² However, it was the George that became the premier coaching inn in Walsall in the later 18th century, as the fortunes of Rushall Street declined (Cockayne 1984, 80). In addition, the area probably also suffered from the typical urban cycle of development and subsequent decline. For example, the construction of Lichfield Street, to the north of the site, provided a new set of desirable middle class town centre properties after 1830 and started a trend for other middle class housing developments around the outskirts of the historic town. The cartographic evidence from this period shows that not all of Ablewell Street was occupied, with the natural resources of the area still being utilised in the form of a limeworks on Ablewell Street to the south of The Ditch and a gravel pit further to the south along Birmingham Street (Fig. 2).

Mason’s plan of 1824 (Fig. 3) is the first map at a sufficiently large scale to accurately depict individual buildings and plot boundaries. Several of the buildings fronting onto the east side of the upper end of Rushall Street have relatively large footprints in comparison to those further down the street, and these were probably the premises of the higher status trades and professions mentioned above, including The Bull’s Head. It is noticeable that the set of property boundaries that ran up the eastern side of the street were terraced and deliberately aligned so that each had access to Rushall Street and The Ditch. They are also generally larger than the more sinuous plot patterns seen elsewhere, which are characteristic of medieval development (Baker 1989, 14).

The Mason plan does not depict many back-plot buildings, with the notable exception of the cluster behind the Bull’s Head that would probably have included stables and stores. Therefore, it may be the case that the majority of the back-plot workshops, or ‘shoppings’ as they are locally called, together with court housing, were a slightly later 19th-century development, although several of the yards in this area are named in 18th- or early 19th-century documents. These densely packed types of structure were certainly characteristic of the area by the time the Ordnance Survey mapped the area in the 1880s (Fig. 4).

By 1847 Upper Rushall Street was considered to be a third-rate street where it was difficult to lease houses and shops (Currie *et al* 1976, 146–65), although in 1856 it was nonetheless observed that it still contained some ‘good old-fashioned houses and shops and was a fair business street’ (Glew 1856, 35). This apparent variance may have been the result of the increasing congestion of the courts behind the commercial frontages. Here, evidence from the census returns between 1841 and 1901 indicates that large numbers of working-class families and trades were packed in.

Listings of the yards adjacent to the Bull’s Head Yard in the 1881 and 1891 censuses illustrate the cramped conditions and low-class employment of the people who occupied the hill at this time. The numbers of properties along Upper Rushall Street itself increased significantly from the 1861 and 1871 censuses in comparison with the 1881 and 1891 censuses, suggesting divisions of property along this road as its fortunes declined. Behind the street frontage the hill was packed with low-class court housing.

Following several cholera outbreaks in the mid 1800s, concerns about the sanitary condition of these properties was such that, later in the Victorian period, court housing in Upper Rushall Street together with Church Hill was considered for slum clearance after the passing of the Artisans Dwelling Act of 1875. However, it was decided that these cases could be dealt with on a piecemeal basis under various Public Health Acts (Lewis and Woods 1987, 73) and only some limited clearance, mainly to the north of Bull’s Head Yard, had taken place before the First World War (Ordnance Survey 1:2500 county series 1888, 1902–3 and 1914–17, not illustrated). Clearance continued throughout the 20th century (Ordnance Survey 1:2500 map 1938, not illustrated). The mapping shows that the

2 While the Bull’s Head was still a thriving hostelry, the guard of the Stonnal to Chester coach, which used the Bull’s Head to change horses, would let off his blunderbuss as he thundered down the High Street past The George as a token of defiance.

initial limited clearance was in the area of the excavation, which correlates with the census data and suggests that the properties identified during the archaeological work were cleared sometime between 1888 and 1903.

SUMMARY OF PREVIOUS ARCHAEOLOGICAL WORK

Prior to the project described in this report, there had been a number of archaeological investigations in the surrounding area (Fig. 1). One of these took place in 1975 in an area of recently demolished housing on the west side of Lower Rushall Street (Wrathmell and Wrathmell 1982; Black Country Historic Environment Record (BCHER) Event No 539: Site 1, Fig. 1) and identified the remains of a single-storey timber-framed structure on limestone footings, probably dating from the 17th century, and a two-storey limestone building with brick-lined cellar. Five phases of medieval occupation were recorded.

An evaluation of the archaeology of Walsall conducted in 1987–8 included documentary research, cartographic analysis, and a programme of trial excavation trenches (BCHER Event No 644), three of which were in the immediate vicinity of the Church Hill site (Baker 1989: Sites 2–4, Fig. 1). Site 2 uncovered evidence of limestone quarrying to the south of the Church Hill (*Ibid* 1989, 44); north of Church Hill at Site 3 a major brick wall shown on the 1st Edition Ordnance Survey was identified (*Ibid* 1989, 45: Site 3; Fig. 1); Trench 4 uncovered no evidence of this wall to the south-east but there was evidence of terracing back into the hillside (*Ibid*, Site 4, Fig. 1).

Also in 1987–8 a small excavation at 14 High Street uncovered a circular stone-built structure, probably a corn-drying oven, of late-medieval to 17th-century date (Cook 2005; BCHER Event No 760: Site 5, Fig. 1). A programme of archaeological work was conducted to the south-east of Church Street (Site 6) comprising evaluation (Fell 2000; BCHER Event No 631: Site 6, Fig. 1) and a subsequent watching brief (BCHER Event No 674; Lightfoot 2002). The site was adjacent to limeworks illustrated on the 1782 map of Walsall (Fig. 2). No evidence of quarrying was discovered but 18th- and 19th-century cellaring and structures were uncovered. To the east of St Matthew's church, archaeological investigations in the Hill Street/Bullocks Row area identified brick built cellaring likely to be 18th century in date (Jeffrey 2003; BCHER Event No 745: Site 7, Fig. 1). A large oak trough dating from the late 15th to early 16th century was also uncovered during the watching brief (BCHER Event No 744; Stone and Nash 2004). This appeared to relate to a conduit system for water use on this side of the town possibly dating from the late medieval period.

METHODOLOGY

The recent phase of work was preceded by desk-based assessments and building recording (Conway 2001; Watt and Hislop 2002; Ramsey 2003; Lobb 2006). Two watching briefs on geotechnical test pits were also undertaken at the south-western end of Dudley Street, off Mountrath Street, in Upper Hall Lane, and in the land plot between Upper Rushall Street and The Ditch (Hancox 2004; Halsted 2006).

The area impacted by the development, namely the road easement linking Upper Rushall Street to Ablewell Street (the Church Hill site), and an area comprising the car park and the top of the High Street (the High Street site), was stripped by the contractor under archaeological supervision. When significant archaeological structures and deposits were encountered, the archaeology was excavated by hand and recorded in accordance with IFA Standards and Guidance (2001a; b; c). The aim was to identify and preserve by record any archaeological features and deposits pre-dating the 19th century. The excavation of geotechnical bore-holes and test-pits were also monitored through an archaeological watching brief. In areas not requiring full excavation, a watching brief was implemented throughout the full ground reduction exercise.

RESULTS

Extensive structural remains were recorded within two principal areas at the Church Hill site (Fig. 5). These areas were located on the east side of the Upper Rushall Street frontage and directly to the east on Church Hill, to the north of St Matthew's church. In addition, further structural features and archaeological deposits were encountered elsewhere within the proposed development area. Although the main axis of the buildings along the Upper Rushall Street frontage follows the north-east to



Fig. 5 Ordnance Survey 1:500 town plan of 1886 with archaeological results

south-west alignment of the street, for ease of description they are treated as they were orientated north-south. Similarly, the north-west to south-east aligned structures further to the east are treated as though they were orientated east-west.

Phasing Summary

The archaeological features, deposits and structures discovered on Church Hill can be grouped into five main phases.

Phase 0: Prior to occupation the earliest phase was associated with the excavation of quarry pits for limestone potentially dating to the medieval or early post-medieval periods.

Phase 1: A series of quarry pits was backfilled. Although it was not ascertained whether the quarrying at the street frontage and on the hill were contemporary, the backfilling was post-medieval in both instances.

Phase 2: The earliest structure identified during the works (Structure A, Fig. 6), which was dated to the 18th century, comprised limestone walls forming a cellar fronting Upper Rushall Street. The walls appeared to be constructed immediately over the base of a quarry pit, but it was unclear whether this particular feature was part of the overall quarrying in the area, or a discrete phase, the purpose of which was to create the cellar.

Phase 3: Structure A was altered, with extensions to the cellar being effected in the early 19th century to the north-east and possibly to the south-east. The new walls were also constructed from

limestone, and a limestone rubble boundary wall aligned east–west, central to the road easement, was also possibly from this phase (Fig. 6).

Phase 4: Activity during Phase 4 was represented by 19th-century brick-built structures. These included further additions and alterations to Structure A, and new cellars (Structure B, Fig. 6) along the Upper Rushall Street frontage. In addition, the hill behind the Upper Rushall Street frontage was witness to the erection of terraces of small industrial housing, built in yards that covered the whole of the hill. The earlier boundary wall demarked one of the hill terraces, and was identified as being buttressed and reused as the southern wall for a series of small buildings in this area (Structure C, Fig. 7). These buildings were slum housing, reflecting the downturn in fortunes of the area.

Phase 1: 17th-century quarry backfill

The watching brief on the Church Hill site identified substantial depths of limestone quarry backfill. These comprised layers of red and orange sand, burnt lime, fragmented limestone and grey brown silt. Cutting these layers were large pits, which appeared to be simple lime-burning pits or clamp kilns, suggesting that the whole area was witness to ongoing industrial activity even as it was being backfilled.

The archaeology of the hill itself consisted almost entirely of quarry backfill, with later rubble deposits associated with the demolition of the 19th-century housing overlying it. Seams of burnt lime, limestone rubble, and sand were identified, cut at various intervals by large lime-slaking pits filled with similar material. These deposits were mostly sterile, although 17th-century pottery was recovered from some of the layers and 18th-century pottery was recovered from some of the upper layers. Overlying the exposed bedrock beneath the cellars at the street frontage, levelling layers were identified in places, which pre-dated some of the walls. These layers again were dated to the 17th century, and were also sampled in a sondage beneath the later buildings on Church Hill (1087, Fig. 7). Pottery dating to the 17th century was recovered from this deposit, including blackware and coarseware sherds.

Phase 2: 18th-century limestone buildings fronting Upper Rushall Street (Fig. 6)

The natural limestone bedrock (1050) was identified underneath the earliest walls. It comprised greenish limestone with clay seams running between the blocks, and was recorded at uneven depths across the site. Layers of clay overlay the bedrock in places, though these are likely to have been natural in origin.

The earliest building identified was **Structure A**, which comprised a series of limestone rubble walls constructed directly above the bedrock, and which probably represented the remains of a cellar. The front (west) wall (1053), which ran parallel to Upper Rushall Street, appeared to be constructed in two stages, which were distinguished by the lower courses being wider than the upper ones. This differentiation either has chronological significance, or it was a deliberate technique related to the structural stability of the foundations. The rear (east) wall (1018) was constructed in a similar fashion, and incorporated a niche into its build. These two walls were joined by the foundations of a third (north) wall (1016; Plate 1), with recesses on each side towards the centre, perhaps indicating a former doorway. The rectangle may have been closed to the south by wall 1023, for which partial evidence of a construction cut (1070) was identified. However, on the grounds that the west wall (1053) extended further to the south, the putative south wall (1023), which abutted it, may, alternatively, be the remains of an internal division. A wall that can be identified more certainly as an internal partition (1052) extended south from the north wall (1016) immediately west of the possible doorway, its more southerly section perhaps represented by a robber trench (1046). To the east of this feature, the remains of a robbed east–west internal wall (1026) were also excavated.

The ground level was subsequently raised on either side of the north wall (1016). Inside the building the floor was raised by the deposition of mixed orange sand with yellow clay (1051), very dirty in places. A similar deposit (1045, not illustrated) was identified to the south of the Phase 3 wall 1022. Outside the building, beyond the north wall (1016), the uneven bedrock was overlain by orange yellow clay sand (1049, not illustrated), similar to 1051, but cleaner. It is possible that this deposit represents re-levelling of the area after quarrying and the construction of the original cellar. Pottery dating from the 17th and 18th centuries was recovered from deposits 1045 and 1051, including coarseware sherds and blackware sherds.

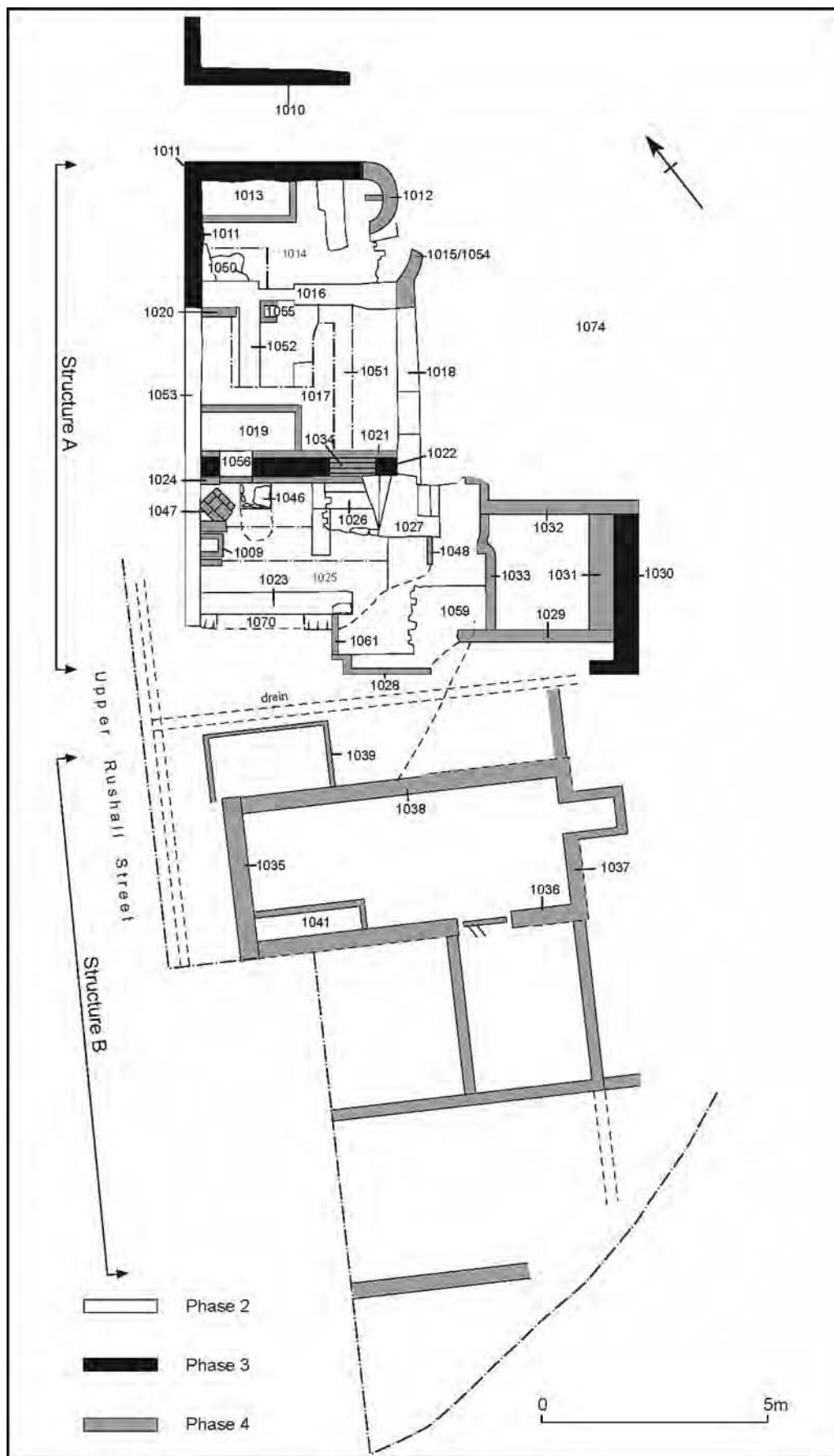


Fig. 6 Plan of structures fronting Upper Rushall Street

Phase 3: Early 19th-century limestone buildings fronting Upper Rushall Street

In Phase 3, Structure A was altered and extended, though construction was still in limestone during this period. The corner of a second building constructed from limestone was identified at the north-eastern edge of the excavation, but was not excavated (1010, Plate 2).

Within Structure A, wall 1016 was truncated down to the cellar-floor level, and the cellar was extended to the north by the construction of wall 1011 (Plate 3) a continuation of the west wall (1053), which also formed the new north wall of the building. Also likely to date from this period is an internal wall (1022), which cut right across Structure A from east–west and abutted the front (1053) and rear (1018) walls. A north–south aligned limestone wall (1030) to the south and east of 1022 may also relate to the expansion of Structure A. At its base it was constructed of backfilled earth covered by plaster. Above the render, limestone was visible, suggesting that this was possibly a former boundary wall, reused as a cellar wall.

The most substantial structure from this phase was a limestone rubble boundary wall extending through the centre of the proposed road corridor, at an approximate right angle to Upper Rushall Street (1080/ 1105, Figs 5 and 7). Comparison with the 1886 1:500 map shows that it coincided with the line of properties to the rear of Bull's Head Yard. It survived in places to a depth of two to three courses with later brick courses on top, though in other areas it had been truncated entirely; in places it had been repaired in brick. The 1080/1105 boundary wall continued to the east as a stone rubble wall (1110) with brick courses above it (1109). The boundary wall continued to the east of this again as a stone and brick rubble wall (1121), before turning at an angle to the north-east.

Phase 4: 19th-century buildings on the hill, and additions and alterations to the Upper Rushall Street frontage

Phase 4 is characterised by further additions and alterations to Structure A, and by the building of Structure B on the Upper Rushall Street frontage (Fig. 6) and Structure C behind the frontage on the hill itself (Fig. 7). Construction during this period was predominantly in brick.

Structure A

The northern part of Structure A was further partitioned by a brick wall (1020) that abutted Phase 3 wall 1011 on the alignment of Phase 2 wall foundation 1016. In the north-west corner of the cellar a brick bench with quarry-tiled top (1013) was built, and to the east, an apsidal plan brick wall (1012), possibly a holder for a boiler, was constructed over the eastern end of 1011 (Plate 4). A second curved brick wall (1015/1054), subsequently truncated by modern demolition to the east, was built over the remains of the Phase 2 corner of Structure A. The brick and flagstone floor surface (1014) in this area overlay levelling layer 1049.

In the central part of Structure A further alterations and additions were evident. The north side of Phase 3 partition 1022 was faced in brick, and a quarry-tiled brick bench (1019/1056), mirroring bench 1013 to the north, was built across the westernmost of two recesses in this wall. Flowerpot sherds dating from the 19th century or later were recovered from the inner deposits of this bench (1019). The eastern recess in wall 1022 was fully blocked (1034). A discrete area of mortar was identified over layer 1051, and a small square brick drain (1055) was cut through it, respecting the truncated remains of wall 1016. A crumbly brick floor (1017) with a grey ash and sand levelling deposit (1071) sealed layer 1051, and abutted walls 1016, 1018 and 1021 to form a surface in this area.

At the southern end of Structure A, the south side of Phase 3 partition 1022, was also faced in brick (1024), the facing continuing across both recesses. Small brick structures (1009 and 1047) interpreted as drains were located adjacent to the front wall (1053). They were sealed by a brick floor surface 1025 which was bedded into a layer of sand 1043, which in turn overlay a layer of yellow clay 1044. The fill of the drain (1007) contained late 19th- to early 20th-century pottery.

Also at the southern end of Structure A, the cellaring was extended to the south and rear by brick walls 1032, 1029, and 1028 (Plates 5 and 6). A layer of clay, 1060, served as a foundation layer for wall 1028, and between walls 1028 and 1023 was a bricked up doorway 1061. This was constructed with 2½ in thick bricks laid in rat-trap bond.

A small internal wall (1033) was aligned between 1029 and 1032, and the brick foundation course of a second dividing wall (1048) was identified to the west of wall 1033. A large brick shelf or step (1031) was present to the east of the cellar extension abutting 1030 and a stone stairway (1027, Plates 5 and 6) was also present central to this area with steps leading down both to the east and west. A layer of mortar (1059) served as a foundation for the stairs 1027 and the dividing wall 1033.

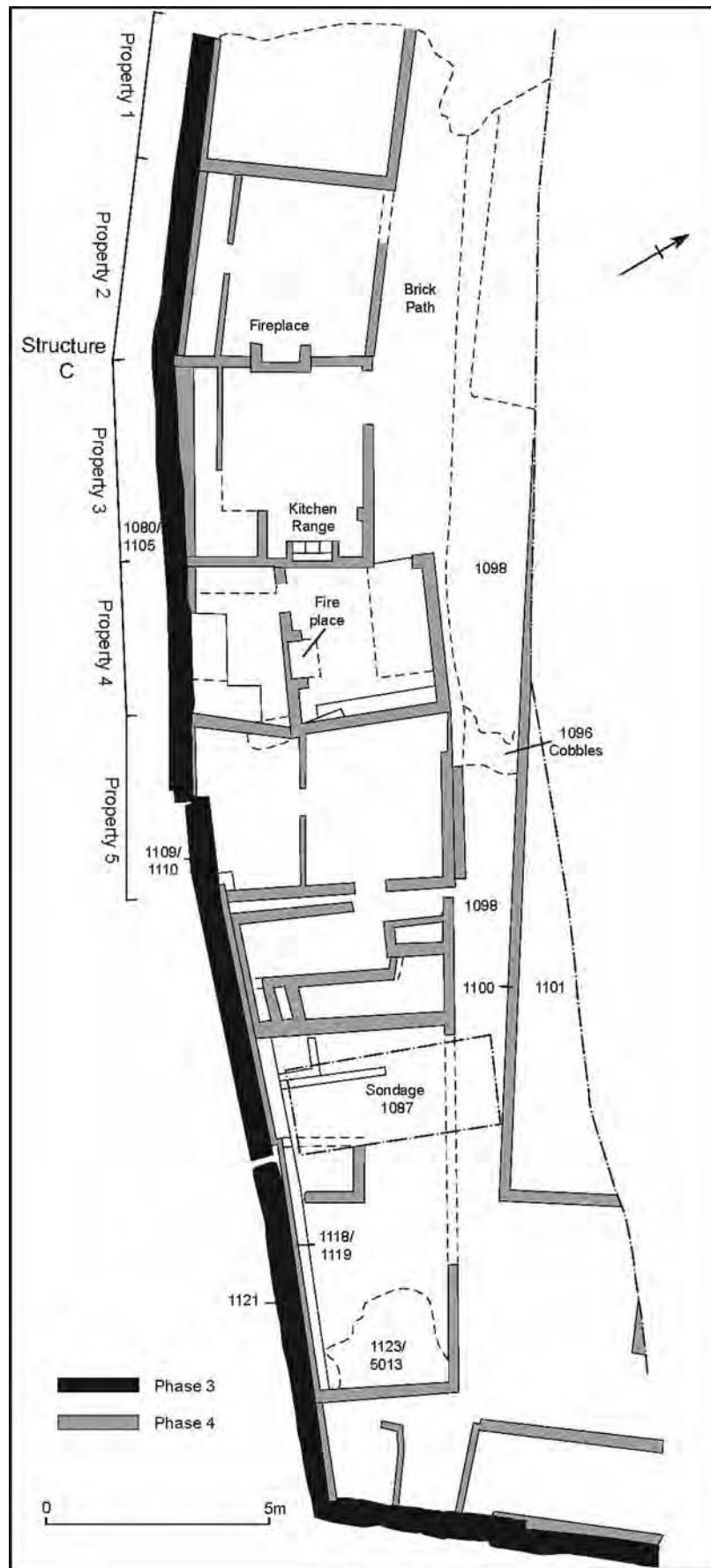


Fig. 7 Plan of properties and structures central to the hill

Structure B

Further to the south along the Upper Rushall Street frontage, a separate cellar was identified (Structure B). The front wall of this cellar was also constructed from limestone, 1035, and the rear walls were brick, 1036 (south), 1037 (east) and 1038 (west) (Plate 7). Contained within wall 1036 was an opening formerly linking this cellar with one to the south. This had been blocked by the insertion of a staircase in the southern cellar. An alcove or stairwell was incorporated into the back (east) wall (1037), and an annexe was present to the north (1039), separated from the main cellar by a large straight joint. The main cellar and annexe were floored in brick.

At the southern extent of the road easement fronting Upper Rushall Street, to the south of Structure B, a series of later vaulted cellars were identified, constructed entirely from brick. No evidence of earlier structures was identified in this area, the Victorian cellaring having truncated all potentially earlier deposits (Plate 8).

Structure C

Behind the Upper Rushall Street frontage, within the centre of the road corridor over the hill itself, the remains of standing walls, floors, and internal features were identified (Structure C, Fig. 7). These were constructed against the north face of the limestone rubble and brick wall (1080/1105/1109/1110/1121) to which later brick facing and buttresses were applied at various places. These buildings were all essentially of the same phase, and built of brick. Five distinct properties were identified (Plates 9 and 10) forming an irregular terraced row, described here in sequence from west to east.

Property 1 at the west end of the row, was defined by walls to the north, south, and east only, the west wall having been demolished. It was floored with quarry tiles, but had no other distinguishing features.

Property 2 was divided into two by an east–west partition wall. The main room to the north had a quarry tile floor and a fireplace in the east wall. A doorway in the centre of the partition wall led into a long narrow subsidiary room with a brick-paved floor.

Property 3 had a similar plan, being divided into main north room and smaller south room, although the latter was L-shaped. Here, too the main room was paved with quarry tiles and the subsidiary room with bricks. Like its counterpart in Property 2, the main room had a fireplace against the east wall, which, in this case, retained a mid-19th-century cast iron open kitchen range with boiler and oven to either side (Plate 11). This part of the room around the fireplace was partially enclosed by the partition wall to the south and by a fillet projecting from the north wall, and must have resembled an inglenook.

Properties 1–3 were entered from the north where there was a brick pathway, with a gutter or kerb present on its northern edge (Plate 11), and beyond, a cobbled surface (1096), of which only a small part survived, set into a layer of compacted ash (1098).

Property 4 was larger, extending further to the north and cutting across the east end of the brick pathway from which it was entered. The outer room had a brick and quarry tile floor, and, along the east side, a slightly raised brick feature incorporating a quarry tiled trough that contained quantities of ash (1083). There was a fireplace in the centre of the east–west partition wall, to the west of which a doorway led into the second room where a brick buttress (1081) was constructed against the south wall.

Property 5 which was entered from a narrow alley to the east, was of similar proportions, and also divided by a partition wall on roughly the same line. Here again, the main room to the north was paved with quarry tiles, and the second room against the boundary wall was floored with brick. However, no other significant features were identified.

In addition to the identifiable properties within Structure C, the severely truncated remains of a series of indeterminate brick structures, located to the east of Property 5, were also exposed. This area was bounded to the south by wall 1109/1110, which continued and returned to the east as 1121. Associated with this wall were pottery sherds, including a waster and coarseware sherds.



Plate 1 Properties fronting Upper Rushall Street looking south-west



Plate 2 Wall 1010 and unexcavated infill



Plate 3 Wall 1016 and abutting floor surfaces



Plate 4 Curving wall 1012 and 1015/1054



Plate 5 Cellar extension with steps 1027



Plate 6 Cellar extension with steps 1027



Plate 7 Cellar (front wall 1035)



Plate 8 Walls and part of vaulted roofs of later cellars along Upper Rushall Street



Plate 9 Properties 2, 3, and 4 looking south



Plate 10 Property 1 looking east



Plate 11 Oven 1092 within wall 1088

To the east of these properties, the remains of further brick structures were identified, although they were less coherently defined and are likely to represent outhouses at the end of the yard.

A long east–west aligned boundary wall to the north of Structure C (1100), returned to the north into the excavation section. Partially exposed on the north side of this wall was a brick floor (1101).

The demolition of the properties on Church Hill and those fronting Upper Rushall Street created a good deal of disturbance, and much of the site was covered with a mixed brick rubble containing domestic rubbish including fragments of a ceramic jam jar, a ceramic milk bottle stopper, an industrial slipware sherd, and an 18th- to 19th-century clay tobacco pipe bowl. This deposit was overlain in turn by rubble and topsoil layers containing a range of pottery that included fragments of residual medieval pottery and a waster fragment that might have been bought/used as a second (Rátkai below).

At the eastern extent of the new road easement, as it adjoined Ablewell Street adjacent to The Ditch, the cellars of a property fronting Ablewell Street were uncovered (Fig. 5). This structure was built entirely from bricks, and was possibly constructed in two phases. The bricks used were of varying sizes, possibly indicating a reuse of earlier bricks. It measured approximately 4m x 6m, and displayed evidence of a vaulted roof. The cellar, however, had been partially demolished, backfilled, and concreted over prior to these works, and as such it was difficult to obtain a more detailed description.

Monitoring of ground reduction in the area of The Ditch exposed an older road surface comprising grey bricks and cobbles together with ceramic drains cut through dark silt sand with brick and mortar rubble. These services were overlain by a surface comprising hard yellow half bricks, which in turn was cut by new services.

Archaeological monitoring during ground reduction and the construction of new planters at the top of the High Street (Fig. 1) identified no archaeological features or deposits that pre-dated the late post-medieval period. The ground reduction exposed the tops of Victorian cellaring, and a suspected mine shaft was identified in the car park area. The mine shaft was constructed as a half brick thick wall, which was cut through a deposit of mid-brown silt containing small stones and charcoal fragments overlain by deposits of black silt sand with fragments of brick and mortar. Neither layer contained dating evidence. At the top of the High Street itself, excavation in this area identified layers of redeposited natural and rubble layers, with large brick drains running parallel to the road.

THE POTTERY *by Stephanie Rátkai*

The pottery recovered from the site dated predominantly from the 17th to 19th century, with a few residual fragments of earlier pottery, and some dating to the early 20th century. The creamware/porcelain waster from 1121, a stone and brick rubble boundary wall, is possibly evidence of importing hardcore onto the site. The blackware waster from 1002, a levelling layer, was possibly bought/sold as a second.

The red-painted whiteware and olive glazed whiteware jug sherds, recovered from topsoil root disturbance (1001), date from the mid 13th to 14th centuries. The sherds belong to the South Staffordshire/North Warwickshire whiteware tradition. Whiteware sherds often form a very large percentage of medieval pottery assemblages in South Staffordshire, which can be as high as 80%. To date no kiln sites have been located producing these wares. The source of the pottery at this site, however, is unlikely to be very far from Walsall. The dominance of whitewares at Lichfield (Rátkai 2001, Rátkai 2004, Rátkai forthcoming) and Drayton Bassett (pers. comm. Deborah Ford) could be taken as evidence for a production site somewhere to the south of Lichfield.

Late medieval or early post-medieval pottery (Midlands Purple, late redware and blackware) are difficult to source, especially, as in this case, where the sherds are mainly small and undiagnostic. The presence of a waster (or second), found in topsoil context 1002, suggests that Walsall cannot be far from the centre of production. Assuming that pottery was not produced in Walsall itself, the most likely source for these wares is Wednesbury c 5km to the south-west and an important 'potting village' from at least the 16th century. Coarseware, which in the absence of diagnostic feature sherds are difficult to date with any exactitude, may also have been made in Wednesbury.

Table 1 Pottery by phase

Context	Description	Spot Date	Phase	Pottery
1087	Fill of quarry	17th century	1	1 x blackware jug sherd 17th century 1 x blackware mug handle 17th century 1 x coarseware jar sherd 17th century
1045	Fill of large quarry pit.	17th – 18th century	2	10 x coarseware sherds with treacly red-brown glaze 17th century? 1 x coarseware sherd 17th to 18th century 1 x blackware sherd 17th to 18th century 1 x blackware mug sherd 17th century? 2 x coarseware sherds 17th to 18th century
1051	Levelling layer over bedrock	17th century	2	1 x blackware jug sherd 17th century
1000	Topsoil	17th century	4	3 x blackware mug sherds represented two or three vessels 17th century
1001	Root disturbance	19th century or possibly later	4	1 x red-painted whiteware strap handle with deep central groove mid 13th to 14th century 1 x olive glazed whiteware jug sherd mid 13th to 14th century 1 x Midlands Purple ware sherd 15th to 16th century 2 x blue transfer printed sherds 19th century 1 x black transfer-printed faceted foot-ring bowl or jug 19th century
1002	Overburden	17th century?	4	1 x large blackware mug sherd, unusual because glaze has completely covered the handle scars for the attachment of one handle. Waster? 17th to early 18th century?
1007	Black clinker backfill	late 19th century to early 20th century	4	1 x late redware sherd 15th to 16th century 1 x complete brown salt-glazed stoneware ink well later 19th to early 20th century 1 x lustre ware sherd 19th century 3 x blue transfer printed sherds 19th century 1 x utilitarian whiteware sherd 19th century
1019	Fill over quarry tile step	19th century or later	4	2 (joining) x flowerpot sherds 19th century or later
1074	Rubble backfill over cellar	late 19th to 20th century	4	1 x ceramic ?jam jar 1 x ceramic milk bottle stopper 1 x industrial slipware sherd early 19th century. 18th to early 19th century? Clay pipe bowl
1121	Build of wall of brick and stone rubble	19th century?	4	1 x brown salt-glazed stoneware mug sherd with band of rouletting above base 18th century 8 x coarseware sherds 1 x utilitarian whiteware sherd 1 x badly burnt sherd with glaze over breaks, waster. Difficult to determine fabric, could be a creamware but could conceivably be porcelain, although rather thick-walled
u/s				1 x coarseware sherd, sooted 17th to 18th century 1 x brown salt-glazed stoneware sherd 19th century 10 x early to late 19th-century glazed ware sherds.

The pottery dating to the 17th or possibly 18th century is fairly typical of assemblages of the period and contains a mixture of utilitarian vessels, such as jars and bowls, and tablewares such as mugs and jugs. There is very little pottery which definitely dates to the 18th century and this is consistent with the excavated buildings with limestone walls having been constructed in the later 17th or 18th centuries.

The remainder of the pottery was largely made up of 19th- to 20th-century material of mundane quality. The most attractive vessel was an industrial slipware jug from rubble backfill overlying the site (1074, Plate 12). This type of ceramic is particularly associated with the artisanal classes and formed a cheap and colourful addition to the pottery in use. The most likely source for this type of ware would have been the Staffordshire Potteries.

Apart from the pottery only a limited amount of very fragmentary bone was recovered during the excavations.

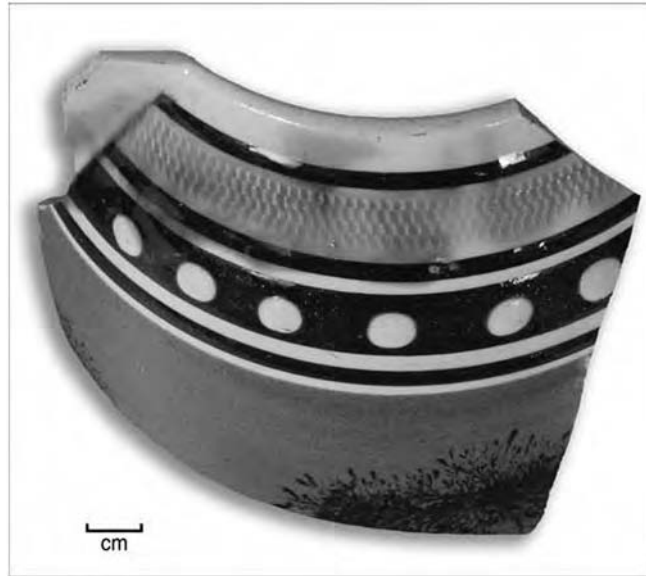


Plate 12 Fragment of industrial slipware jug

DISCUSSION

The results of the excavation and watching brief identified an area of historic Walsall that experienced dramatic changes in use, character, and fortune. In summary, the area appears to have been on the periphery of the town during the medieval period, and was subjected to intense industrial activity during the early post-medieval period. The exhaustion of the limestone resource coupled with the expansion of the town during the 18th and 19th centuries resulted in the redevelopment of the area with large well-appointed houses. Continuing population growth and industrial expansion was accompanied by a decline in the character of the area whereby slum housing and small-scale workshops were crowded in behind the buildings on the Upper Rushall Street frontage at the end of the 19th century, leading eventually to the whole area being cleared in the early 20th century.

Although the area lies immediately below the parish church, close to the top of the medieval High Street, and despite the fact that previous archaeological work identified medieval deposits to the north along Lower Rushall Street (Wrathmell and Wrathmell 1982), no medieval remains were present in either the Church Hill site or the High Street site. That this area was outside the confines of the town in the late medieval period has also been suggested by environmental evidence from the work at Hill Street to the south of the church (Stone and Nash 2004). Possibly the slopes of Church Hill were too steep to encourage early settlement which was confined to the surrounding street frontages.

The earliest activity identified was the limestone quarrying at Church Hill. A 17th-century date for the backfill of the quarry and subsequent reclamation of the land can be suggested, although the quarrying may have taken place over a longer period. The importance of lime working to the economy of Walsall is well documented (Green 1977), and the identification of extensive quarrying within the site demonstrates its importance by showing that the exploitation of natural resources for this generally unpleasant industry was taking place even on the edge, and possibly within, the town. The archaeological evidence correlates well with Robert Plot's 17th-century description of lime working around Walsall, with evidence of the fires needed to heat the limestone (Plot 1686, 21).

Previous archaeological work in the area has identified limestone quarrying to the south along the Upper Rushall Street frontage (Jeffery 2003), also filled with post-medieval pottery. To the north along Lower Rushall Street, large quarry pits of post-medieval, and possibly, medieval date, were identified. Archaeological work in the area to the north of the lime pit depicted on the map of 1782, however, did not identify any quarrying activity (Fell 2000, Lightfoot 2002), and it is possible that this was a later quarry, with clearly defined limits, that post-dated the 18th-century settlement of the area.

The pits identified during the archaeological monitoring at Church Hill, cutting the layers of backfill, burnt lime and rubble, are likely to be simple lime-burning pits, or clamp kilns, which represent

the simplest type of lime kiln. Until the 19th century most lime kilns were temporary structures set up to burn the lime on site, and after they had served their purpose many were simply left to decay, whilst others were dismantled and rebuilt elsewhere (Williams 1989).

The archaeological and documentary evidence points to the area being backfilled before being reoccupied, with the area transformed in character from a predominantly industrial area to a much higher status one.

As layers dating to the 17th century were identified directly overlying the bedrock on the Upper Rushall Street frontage, the earliest cellars identified are likely to date to the 18th century, and were well constructed from stone. The documentary evidence from this time suggests that Upper Rushall Street was well appointed with large houses, and generally considered a popular place to live (Cockayne 1984). As such, it is highly likely that the quarrying phase of land use was completed by this point, as the quarrying activity itself would have been dirty, smelly, and unsightly. The mapping evidence also points to the area being a planned development, in which the land was reclaimed after the quarry had been backfilled.

To the south, previous archaeological investigations also identified stone-built walls aligned with Upper Rushall Street, which utilised the exposed quarry faces in their construction (Baker 1989). Stone walls were also identified but not recorded to the south, east of St Matthew's Church. Together the evidence suggests that the re-occupation of the area was relatively extensive.

The stone-built cellars identified along the street frontage, however, do not correlate well with the cartographic evidence of the Ordnance Survey mapping, and suggest they were earlier properties along the frontage than those depicted on the later maps. The archaeological evidence also suggests two phases of stone cellaring, with the levelling of walls to enable expansion. The stone rubble boundary wall identified is likely to be from this period of activity.

These limestone remains appear to represent a once widespread, but now largely hidden, phase of vernacular construction. To some degree this was contemporary with and complementary to the timber-framed tradition that formerly thrived in Walsall, and seems to have predated the almost universal application of brick that transformed the architectural character of the town in the 19th century. The town of Dudley, which is also dominated by a limestone hill, and which similarly underwent a transformation from timber to brick, provides an analogy. Here, limestone rubble construction is much more in evidence owing to its use in the construction of the castle and the priory. In the town itself, however, it has a lower profile, surviving most obviously in backplot boundaries and party walls. It may be expected that further evidence for the use of limestone rubble construction will be uncovered in Walsall in future excavations, and that it will become accepted as one of the characteristic traits of the town's built heritage.

Evidence for stone-built structures had been subsumed by later brick construction in all but one area of the excavations described here. This may suggest they were sparser than the later brick development, or relied less on cellaring and hence were more ephemeral. This may correlate with high status properties that were detached or less densely spaced than the 19th-century development that followed. The limestone walls identified during archaeological work to the north were recorded above ground level only (Wrathmell and Wrathmell 1982).

Later buildings in the area were constructed from brick, including the archaeological remains in the vicinity of the Greyhound Inn depicted on the 1888 Ordnance Survey 1:500 map (Fig. 4). This public house has been suggested as the location of the original Bull's Head although the archaeology exposed 19th-century brick-built vaulted cellars, indicating that the cellar had been rebuilt, or that this pub was not the location of the original inn after all.

The decline of the area during the 19th century is clearly visible in the archaeological record, both from this phase of work, and from previous archaeological investigations. The cellars fronting Upper Rushall Street show evidence of expansion, rebuilding and subdivision, correlating with the census evidence. This time the construction was in brick, often displaying poor quality materials and workmanship, contrasting with the better quality stone-built cellaring. This downturn in fortune is again indicated by the documentary evidence, stating that by 1847 it was difficult to lease properties along the road (Litherland above). To the south, previous archaeological work has shown that the limestone walls in this area were levelled before rebuilding in the Victorian period with a complex of brick features including walls and drains from housing (Baker 1989, 44).

The structural remains identified further to the east of Upper Rushall Street were defined by small properties along a yard, and correlated exactly with the properties depicted on the Ordnance

Survey mapping (Fig. 5). It is highly likely that these properties dated from the mid to late 19th century, and were also representative of the down-turn in affluence and fortune of the inhabitants of the area. While it has been problematic to identify exactly which yard listed in the census relates to the archaeology, the general area was shown from the documentary evidence to be incredibly poor and crowded, with each small property housing a whole family and often others. The stone rubble and brick wall identified as having been buttressed and reused may have originally been a boundary wall defining the northern edge of the Bull's Head Yard area that is feasibly earlier, delineating a terrace in this area. The recovery from this part of the site of waster pottery which may have actually been bought and used as seconds further highlights the impoverished character of this area of 19th-century Walsall.

The properties on the hill were occupied by labourers, servants, the old, and the unemployed, with trades listed in the census returns including whip-thong makers, buckle burnishers, saddle stitchers, and harness stitchers. As well as living in the properties, these small-scale traders were also likely to work on the premises, and in workshops that also crowded the yards and courts. The yard area to the east, with its unidentifiable brick structures and ashy deposits, was likely to be a communal area, similar to those around which back-to-back housing was built, and may have had a tap, the wash-house, toilets, dustbins, and workshops (Upton 2005, 6). Although Walsall did not have back-to-back housing (*Ibid*), court housing such as that recorded during this work, fulfilled a similar function in housing the massively expanding and essentially poor population of the industrialised town.

The squalid, claustrophobic, and insanitary conditions of these houses led to major health problems, including several cholera epidemics, and in the late 19th century the area was considered for clearance, though this was in reality dealt with on a piecemeal basis (Lewis and Woods 1987, 73). The properties were demolished as slums during the 1930s, but the exceptional state of preservation suggests that the demolition involved pulling them in on themselves and then grassing over the rubble remains.

CONCLUSION

The current excavations are a valuable contribution to the study of the early history of Walsall, especially when taken in conjunction with the results of earlier small-scale, work in the area. It is the nature of urban archaeology that a single site is unlikely to answer all or even most of the questions about the development of an area, but a targeted programme could go a long way towards doing so. The recent programmes of excavation in Birmingham are a good example of this (Brickley *et al* 2006; Patrick and Rátkai 2009) and it is to be hoped that as development proceeds in Walsall a similar degree of attention to the archaeology will prove as instructive.

In the case of the present excavation it has been demonstrated that the slopes of Church Hill lay outside the medieval town and formed the focus of a large-scale limestone quarrying industry from at least the 17th century. This industry played a major role in the economy of Walsall from at least the medieval period, and is well evidenced in the documentary and cartographic evidence. Archaeological evidence from various projects in the town illustrates the real effect of the industry and documents its development. The location and make-up of the geology and natural resources of the region influenced the growth of the industry locally, whilst the physical remains of quarrying are subsequently re-used in places or built over by later buildings, so creating their own place in the town's history.

The infilling of quarry pits and the re-use of the area for settlement is an early example of regeneration demonstrated not only by the excavation described here, but also recorded in previous work to the north and south.

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‘OPENING THE FLOODGATES’ ON STAFFORDSHIRE’S WATER MEADOWS: THE STAFFORDSHIRE WATER MEADOWS SURVEY, 2008

PAUL BREEZE, MARK KINCEY, and KEITH CHALLIS

SUMMARY

This article relates to a county-wide survey, commissioned by Staffordshire County Council and undertaken by Birmingham Archaeology between September 2007 and March 2008, to locate and analyse potential former water meadows across Staffordshire. The aim of investigation was the identification of the extent and characteristics of any of these predominantly post-medieval agricultural systems which may be present, and the assessment of their preservation and changing condition over recent time. This was to be achieved through GIS-compiled survey of the vicinity of all watercourses within the county, as identified from contemporary and historic Ordnance Survey maps: a total of 959 miles of watercourses and their surroundings. Historic maps and two series of aerial photographs (taken in 1963 and 2000) were analysed in concert for these areas, in an attempt to identify features indicative of water meadow agriculture and to define potential former system extents.

As a result of this analysis, a total of 182 potential former water meadow systems were identified, and a 10% sample of these was subsequently assessed in the field in order to ‘ground-truth’ the survey. The field survey results appeared to support the validity of the desk-based analysis, suggesting that a sizable proportion of the areas identified remotely may indeed represent the locations of former water meadows. This article attempts to contextualise these findings through a brief discussion of water meadows and their history, before proceeding to explore the methodology of the survey, to discuss the characteristics and distribution of the potential water meadows identified within the county, and to investigate some of the implications of trends observed in these data.

The results of this study have suggested there was a substantially greater adoption of water meadow technology within Staffordshire than has previously been demonstrated, and should provoke further local and regional questions regarding the nature, time-scale, and driving factors behind the adoption of this agricultural method. This research could also be seen to support the case for further such surveys, within neighbouring midland counties, and also nationally.

AN INTRODUCTION TO WATER MEADOWS

The intensive post-medieval adoption of water meadow technology was an innovation particularly associated with the transformation of lowland agriculture in the south-western counties of Wiltshire and Hampshire, but variations of this technology were also adopted on varying scales across much of England. For many regions, the precise scale and chronology of the adoption of water meadow technology remains unclear, with relatively little documentary evidence charting the scale of water meadow construction over time, and with large-scale remote survey to identify features having previously been applied only within the meadow heartlands. This survey represents the first application of a remote survey methodology to an area which is distant from the known meadow heartlands and which possesses an uncertain level of water meadow adoption: namely, the county of Staffordshire.

The intricacies of water meadows and their management have been fully discussed in several previous works (e.g. Cook and Williamson 2007; and Everard (ed) 2005) and consequently are discussed here only in brief in order to contextualise this research. Whilst casual description of an area of pasture land near to a river as being a wet meadow or even a water meadow is relatively common, the use of the phrase ‘water meadow’ in archaeological or historical parlance has a much more specific meaning; namely, an area of land in proximity to a watercourse (usually, but not exclusively, a river), which has been carefully altered to allow deliberate flooding under the control of a landowner. This alteration most commonly took the form of a remodelling of the surface of the field through the creation of a series of banks and graded channels in order to distribute and control the flow of water within the field. The point of deliberate, controlled flooding is to be emphasized here, as it is the use of a careful system to manage a constant flow of water across the field, without the production of any standing water, which truly defines these features and distinguishes them from fields which are allowed to flood naturally or from other methods of artificial irrigation (Everard 2005a).

The basic benefits of watering land through flooding have of course long been known, with the basic concept potentially stretching back almost as far as the origins of agriculture (coupled closely as it is with the principles of irrigation), and with evidence for the deliberate flooding of agricultural land in Britain from the early medieval period onwards (Everard, Cook, and Cutting 2005, 8). However, from the 17th century onwards agricultural reformers began to advocate the benefit of controlled temporary flooding of land, not only as an *ad hoc* way to fertilise pasture and encourage growth, but also as a managed component of an annual farming cycle. It was recognised that the flooding of land at specific times of the year could be used to produce such effects as insulating pastures against frost, encouraging earlier spring growth, and maximising hay production (Everard 2005a, 26; Williamson and Cook 2007, 5). However, it was also noted that prolonged immersion in standing water generated negative effects upon the productivity of pasture (Betley 2007). The alteration of land to allow topographically controlled irrigation was an innovation which provided a method by which the benefits of controlled flooding could be exploited, whilst mitigating against any potential negative effects. Combining water meadow agriculture with the sheepfold system was found to generate further benefit, particularly in chalkland areas (Betley 2007), through a translation of the increased fertility of floodable pasture to less fertile soils elsewhere through overnight live-stock rotation. Consequently, given the multiplicity of benefits, it is unsurprising that the widespread adoption of water meadow technology in areas where it had been shown to be effective (such as the south-eastern chalklands) was relatively rapid.

Having defined what water meadows are, it is prudent to define the characteristics which differentiate the primary water meadow types. These types are known as 'floating upwards', 'catchworks', and 'bedworks', dependant upon the method by which the artificially-induced flooding is achieved.

'*Floating upwards*' or '*warping*' are terms which can be used to cover a range of some of the simplest measures employed to produce artificially managed flooding, although some more specific categories have been proposed within this type of management. These forms of systems generally employed dam or weir features to temporarily force a watercourse to back up and overflow across adjacent fields. Given the simplicity of this strategy, and some historical references, it has been suggested that this may represent an early form of water meadow-like management, likely to have originated before the 17th century (Taylor 2007). The remains of these systems are archaeologically ephemeral at best, given the lack of any significant landscape alteration during their construction and the likelihood that structural features were made of wood. As a result systems of these forms are unlikely to be detected through remote survey of the type performed in this study.

'*Catchwork*' meadows employed natural gradients to water the pasture, using tapering or dead-end carrier channels which followed the contours of a slope. As water was released into the system (from a drain connected to the watercourse) the channels would fill and overflow. This resulted in water running downwards across intervening areas of the slope in a relatively even fashion (sometimes via several further contour-following carriers), until reaching a drain at the base of the slope which removed the water back to the watercourse. Whilst the origins of this system remains enigmatic, the initial use of catchworks is believed to predate bedworks, perhaps being present during the early medieval period, and definitely recorded from the 17th century onwards (Taylor 2007). The requirement for a sufficient gradient can be seen as restricting these features topographically, with an increased likelihood that they would be located in the more narrow upland valleys of the county.

'*Bedwork*' water meadows were the most complex system, utilising configurations of channels and earthwork banks to distribute water from a parent watercourse evenly across the meadow, in such a manner that a constant flow across the surface was achieved without the detrimental production of standing water. A '*main carrier*' channel took the water from the river (which had often been partially dammed by a weir) into a series of '*carriers*' or '*floats*' (Fig 1). These were graded channels on top of wide grassy banks that were designed to overflow, watering the sides (or '*panes*') of the banks. Excess water was then taken away by drains at the bottom of the banks to a large '*tail drain*' which led back to the river. This system was controlled through the use of networks of sluices, and was employed in lowland middle-river environments with broad floodplains and relatively stable channel courses. Bedworks could be considered the pinnacle of water meadow technology due to their sophistication and apparent technical evolution from the other, earlier methods. Bedworks are the most widely recorded and readily identifiable form nationally, as a consequence of the prominence and diagnostic interlocking pattern of the drains and earthworks of the systems.

As can be seen, a variety of methods can be employed to create managed flooding, and the degree to which these differing water management regimes may truly be considered water meadows has

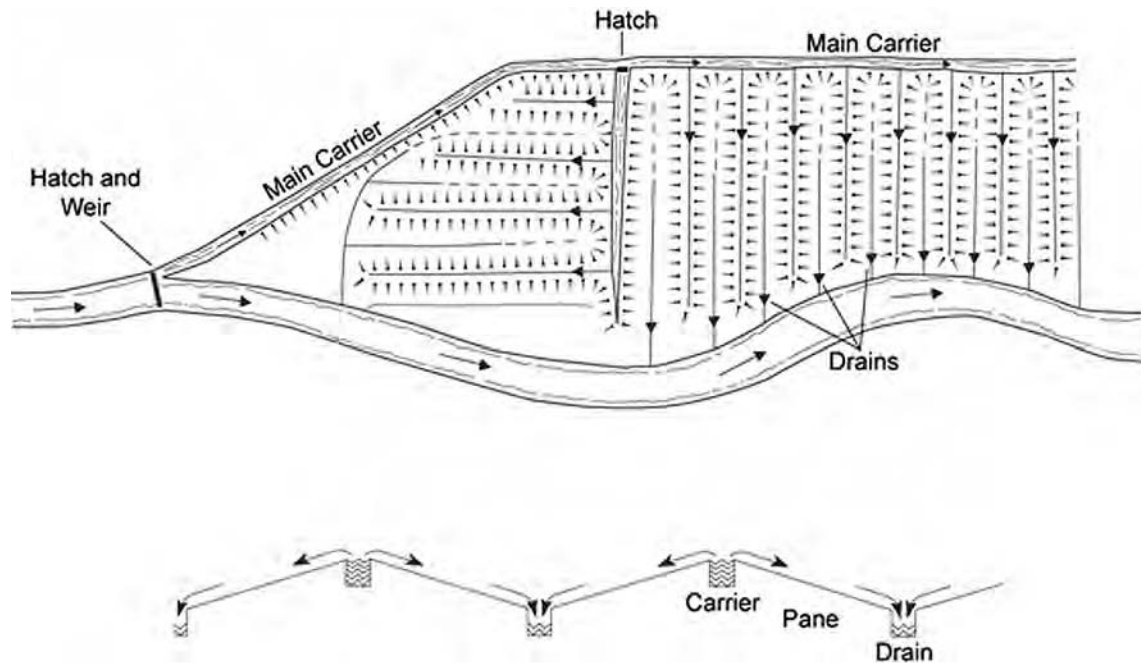


Fig. 1 Bedwork water meadow stylised plan and profile
(adapted from Williamson and Cook 2007, and Everard 2005a)

been previously debated (Cook and Williamson (eds) 2007). It has been proposed that bedwork and catchwork systems might be considered true examples of water meadow technology, whilst systems of 'floating upwards' agriculture might be viewed rather as stepping stones towards the more sophisticated practices (Everard, Cook and Cutting 2005, 9–10). Despite this, it was decided in this study that floating upwards systems would be recorded if observed, enabling the development of such technologies within Staffordshire to be assessed, and to adequately quantify the current archaeological resource.

A BRIEF HISTORY OF WATER MEADOWS

Roland Vaughan's 1610 document the *Most approved and long experienced water workes* is generally held to be the first documentary reference which reliably discusses the use of 'true' water meadow agriculture, although the practice had probably been in use for quite some time before Vaughan's work in Herefordshire (Taylor 2007, 31; Williamson 2007, 44). During the 17th century, whilst already being in sporadic use elsewhere in England, the technology was intensively adopted and refined within the counties of Wiltshire, Dorset, and Hampshire, in a notable phase in the history of water meadow agriculture and particularly that of the bedwork system. This intensive south-western development (apparently supported in its breadth and rapidity through strong advocacy from agricultural reformers at both local and regional levels) had the effect of demonstrating the benefits of the technology to reformers and farmers beyond these counties. This demonstration, coupled with the conversion of land to meadow being recorded as improving the value of some plots by up to three times the original value (Betty 2007), and the publication of a series of reformist works such as George Boswell's *Treatise on watering of meadows* (1779) further publicised the use of the technology and helped facilitate its spread. As a result, by the 18th and 19th centuries water meadows are recorded in Norfolk, Nottinghamshire, and the pastoral vales of the western counties (Cook and Williamson 2007), as well as in Wales and Scotland. The use of the technology declined during the late 19th to early 20th centuries, due to diverse regional and national factors (Everard 2005), resulting in a near cessation of the use of water meadows following the Second World War (Everard 2005b), with only a few scattered remnants remaining in use today. However, the marks the technology made upon the landscape remain, particularly in its heartlands, where large tracts of dramatically altered land are still visible and water meadow features remain identifiable to appropriate methodologies.

DOCUMENTARY EVIDENCE FOR WATER MEADOWS IN STAFFORDSHIRE

Documentary references to water meadow agriculture within Staffordshire are tantalising in their implications. Records reveal the watering of meadows in 1564 at Draycott-in-the-Moors, and by the mid 17th century at Tutbury (Greenslade and Johnson 1979, 69), and describe the use of a bed-work system at Drayton Park as early as 1676 (Taylor 2007, 32). At Trentham water meadows are mentioned in estate records from 1678 onwards; a former water meadow is recorded as being filled in as part of landscaping works in 1781, another as passing out of use by 1774, and three further features as being altered in the late 1770s (Gregory 2010, 78, 81). Marshall (1790) observed multiple instances of the use of bedwork-type meadows within the Midland district around 1785 (including near Tamworth, in Staffordshire) and he also recorded seeing the innovative re-use of medieval ridge and furrow as panes and drains and a variety of catchwork systems in use. He noted that at that time water meadow agriculture 'cannot be said to have yet entered into the common practice of this district' but that considerable progress had been made towards it. Interestingly, he also observed the disused remains of floating upward systems in the area, a few of which had still been in use as little as twenty years previously. Marshall's observations, whilst not constrained to Staffordshire, imply that an increasing adoption of water meadow technology in its various forms was already underway within the region within a few years of Boswell's *Treatise on watering meadows*. By the start of the 19th century water meadows are recorded at Blithfield (Greenslade and Johnson 1979, 110), and in 1817 Pitt described in detail the creation of catchwork systems and that 'irrigation' (used here in reference to water meadows) 'has been extensively adopted in various parts of the county, according to the most approved methods, and has been found of infinite advantage'. He went on to discuss catchwork and 'pane' (bedwork) systems at Ingestre, where there were 70 acres of water meadow, water meadows on the Trent and Sow on Lord Anson's Shugborough estate and at Little Stoke, and large extents of irrigated meadow at Betley (Pitt 1817). More than ten separate areas of meadow are recorded around Trentham by 1820, including a 'model meadow' which was owned by the marquess of Stafford (Loch 1820) and used to encourage tenant farmers to adopt the practice; and the Victoria County History for Staffordshire states that 'in the 1860s' ... 'there were still many artificial water meadows along the main streams of the county' (Greenslade and Johnson 1979, 110). After this point however, the trail runs cold, with later references to the technology within the county, or to its decline, proving more elusive. Nevertheless, the corpus of information, whilst insufficient for gaining an assessment of the overall scale of adoption of the technology within the county, suggested a strong potential for remote survey to return significant results.

THE STAFFORDSHIRE WATER MEADOWS SURVEY

Previous large-scale remote water meadow studies have focused upon southern counties where water meadow systems are known to have been extensively employed for the longest period of time (Environment Agency 1998; Wykes 2002). This study explores their occurrence within Staffordshire, an area for which there are documentary suggestions for use of meadows but no detailed estimations as to their quantity and characteristics. Consequently, this study may be of use in inferring the relative value of rapid survey of this form in identifying water meadows in areas more distant from their known heartlands.

The geographic characteristics of the county govern the nature of the watercourses and their catchment zones, and therefore have a relationship to the expected results of any survey seeking to locate water meadows. Staffordshire possesses in excess of 1550 km of watercourses, comprising 12 major rivers and various minor rivers, streams, and brooks. Topographically, the county can be divided roughly into a central and southern lowland area characterised by the major lowland river valleys of the Trent, Dove, Sow, Penk, Blythe, and Tame, and a northern upland area of the Staffordshire Moorlands and the foothills of the Pennines. Given these characteristics, and bearing in mind the requirements of water meadow agriculture, it was predicted that the broad, relatively flat middle sections of the major rivers would be the most likely locations for the employment of water meadow technology.

Desk-based method

Methodologies for large-scale remote identification of water meadow features were pioneered by a pilot study along the Allen and Frome rivers in Dorset (Environment Agency 1998) and by the

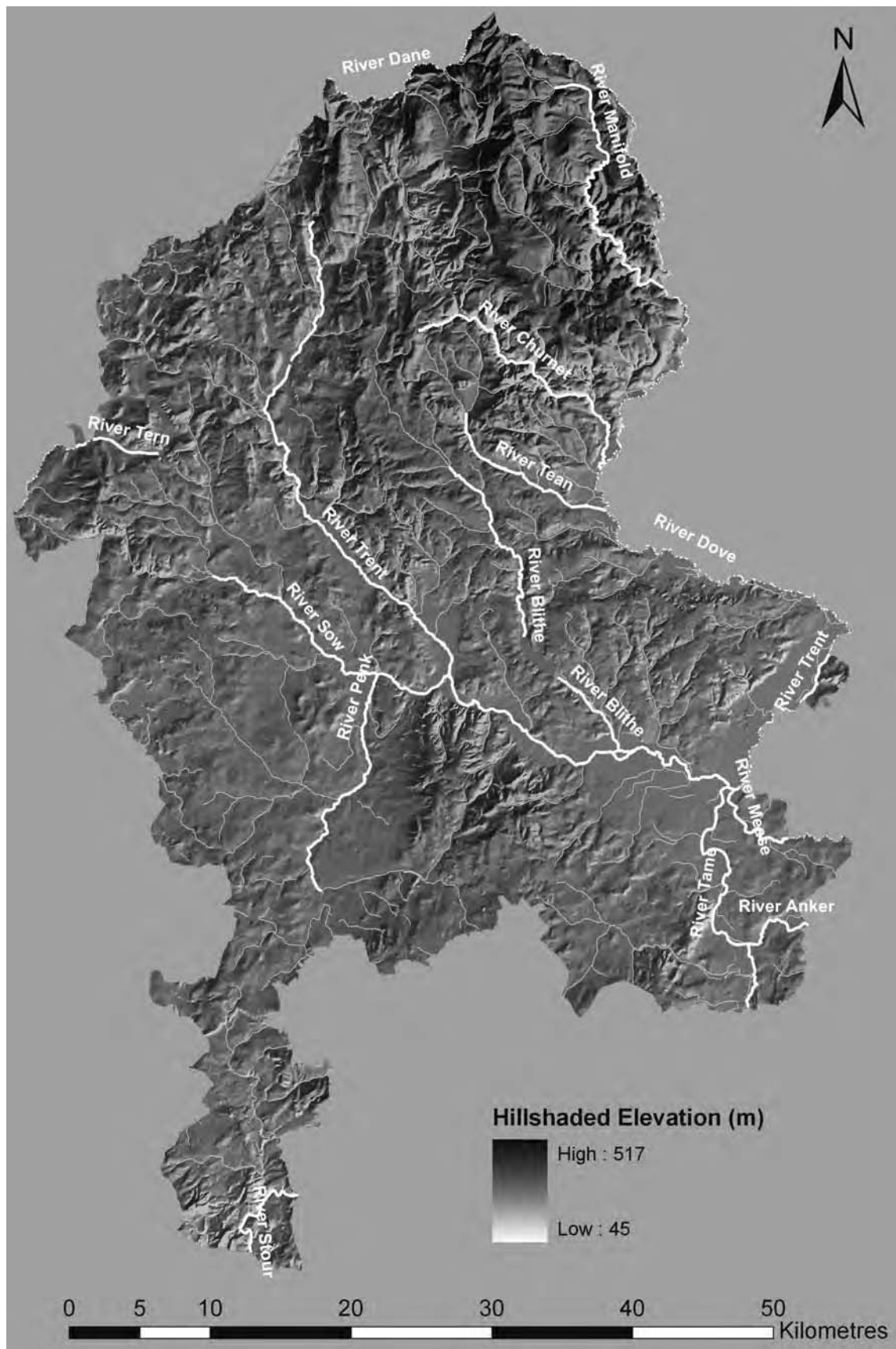


Fig. 2 Hillshaded digital elevation model of Staffordshire, with major and minor watercourses of the county overlain
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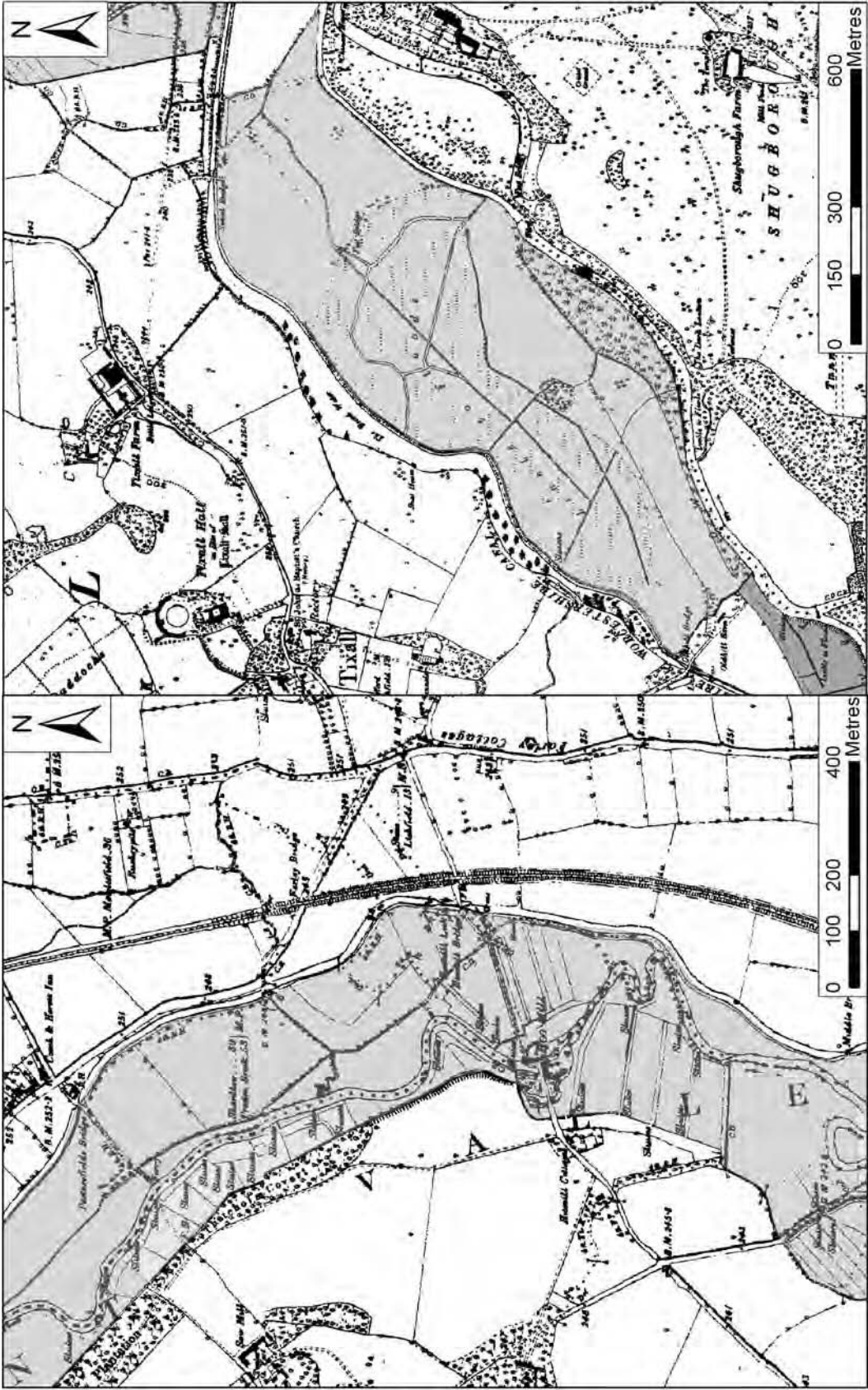


Fig. 3 Highlighted features indicative of water meadow cultivation near Hoo Mill (left) and Tixall (right), visible within Ordnance Survey 1st edition historic map data © and database right ‘Crown Copyright and Landmark Information Group Ltd’ (All rights reserved 2010)

Hampshire water meadows survey (Oxford Archaeological Unit, 1999), so far (to the knowledge of the author) the only landscape and county-scale surveys for water meadows undertaken prior to the Staffordshire survey. These studies established an effective methodology, which informed that of the Staffordshire survey and was expanded upon where appropriate.

The Staffordshire survey investigated the vicinity of all identifiable watercourses within the county, in order to target the likely areas of historical water meadow cultivation (given the necessity for water meadow systems to be fed by a parent watercourse). To define these watercourses a drainage dataset was produced of all river and tributary systems (both major and minor) within the county, derived from available modern Ordnance Survey data (Fig. 2). The exact area to be investigated around each watercourse was not pre-defined quantitatively. This was due to the possibility that linking of water meadow systems might permit areas to be watered substantially away from the parent watercourse, and due to some historically recorded watercourses appearing unmarked in available modern datasets. Therefore, given the potential for an arbitrarily-defined study area to return incomplete results, a deterministic approach was applied, based on available data and analyst experience, with the exact area to be assessed around each watercourse decided on a case-by-case basis as the survey progressed.

Historic maps had previously been shown to be an effective base dataset for the identification of water meadow features (Oxford Archaeological Unit 1999). The accuracy and comprehensive coverage of 1st edition OS maps, coupled with their relatively close chronological position to the expected peak of water meadow agriculture, can be observed to lend this series of maps in particular as an effective base for feature identification. A number of the secondary features and characteristics of water meadows (such as sluices and a propensity for a given area to flood) are routinely recorded on OS mapping of this period, and meadows themselves are sometimes labelled, assisting analysts in assessing the likelihood of a parcel of land representing former water meadow (Fig. 3)

Consequently, geo-referenced 1st (1849–99) and 2nd (1888–1916) edition Ordnance Survey map data, provided by Staffordshire County Council, was visually scanned for features indicative of potential water meadows along all major and minor watercourses within the study area (total length 1543km). The 1st edition OS data was used as the primary dataset for feature identification and the 2nd edition maps were used to provide contrast or further definition where required. During this assessment areas showing diagnostic or typical water meadow characteristics were marked as targets for further analysis, with target boundaries being based upon the apparent extent of the self-enclosed water meadow *systems*, rather than individual former fields.

These targets were then examined through aerial photographic analysis, using vertical aerial photographs from two chronologically separated county-wide sorties flown on behalf of Staffordshire County Council (in 1963 and 2000). The visibility or absence in these data of typical earthwork patterns or of extant or relict channel systems provided a further measure of whether a given area might represent a former water meadow system and of the potential former extent of these systems. Particular care was taken to interpret possible targets based on as many concurrent points of data and images as possible, in order to mitigate against misidentification. A further value of analysing imagery with acquisition dates separated by 37 years was that it allowed analysts to obtain a preliminary measure of recent changes in the state of preservation of former water meadow systems within the study area. Observations of preservation change were recorded as numerical GIS attribute values (representing target condition in 1963 and in 2000), which were then assigned to the defined targets. This was intended to allow analysts to record the recent condition of the potential meadow, and the degree to which that condition had changed (or not) since the 1960s. The photographs from 2000 represented the most recently available data, and so it should be noted that this imagery was already out-of-date by more than 7 years at the time of assessment. Consequently, the assessment of feature condition and preservation which was provided by the desk-based components of the project could only be considered reflective of *recent*, rather than *current*, condition. Although full visual scanning of the entire length of all watercourses within the study area was not possible within the timescale, a further benefit of aerial assessment was the identification of several targets which had not been distinguishable based upon the historical data alone but which in fact appeared to be supported by the data upon re-examination.

Field validation

In order to assess the accuracy of the desk-based survey a programme of field survey was undertaken in February 2008 to investigate identified targets. Field survey was performed across a 10%

sample of the total identified targets, and took the form of walkover survey and hand-held GPS and photographic recording of earthworks and structural features. Unfortunately, this sample can be considered only *suggestive* of the results from the wider dataset, as access restrictions prevented the selection of a sample which was fully geographically and morphologically representative. On-site survey focused upon confirming or denying the status of a target as a potential former water meadow, along with assessing its potential date range, current state of preservation, and possible threats to any preserved features. This assessment was based upon the presence of water meadow earthworks and diagnostic (and potentially dateable) water meadow structures and the visibility of any finer scale features, and also whether the available aerial imagery had provided an effective measure of the current/recent status of these systems.

In terms of system dating, it is important to note that no conclusive typologies are yet available for bedwork systems based upon earthwork form; hence the only features readily dateable to non-intrusive survey are surviving structural features such as sluices and lined channels. However, it should be considered that meadow systems may be re-used and re-cut over a long period of time, with sluices and structural features requiring periodic replacement throughout the 'life' of a system. Hence these features could only provide a *terminus post quem* for a period of use of a system, rather than a date for its creation.

RESULTS

The distribution, character, scale, and recent condition of water meadows

Potential water meadows were identified within the catchment zones of almost every major river within Staffordshire (Fig. 4). The majority of the identified targets (77%) were located within the lowland valleys of the county's major rivers, the Trent, Dove, Sow, Penk, Blythe, and Tame. These areas also held the targets which had the largest visible extents (up to 226 hectares in area in the case of meadow land near Willows Farm, Uttoxeter). This is in keeping with the corpus of knowledge available from other regions, with the largest bedwork systems focused upon major river valleys which are particularly suitable for meadow agriculture given wide floodplains, availability of a consistent head of water, a frequency of pastureland naturally inclined to flood, and relatively stable river channel courses. Where smaller targets were identified away from major river courses, this may be interpreted as enterprising efforts made by farmers with smaller landholdings keen to take advantage of the benefits of water meadow cultivation, and (as mentioned historically in the case of systems at Trentham) 'making use of whatever water they could obtain for this purpose' (Loch 1820, 199–200). Some clustering of larger targets was seen towards major river confluences, due likely to the increased availability of water within the landscape and the tendency for floodplains to be wider in those areas, and so facilitating meadow cultivation. An overview of the distribution and nature of the targets and subdivided by the major river systems is given below; those requiring fuller detail are referred to the full project archive report (Breeze et al 2008).

The Trent

The Trent showed a particular abundance of potential meadows, with 59 targets identified along its Staffordshire length. These formed an almost unbroken chain of potential meadows ranging from Stone to Alrewas, and included several notable field-assessed systems, such as at Trentham and Rugeley. Targets were spaced no more than 2km apart along most of the length of the river, with the notable exception of a large area absent of identified targets proximal to the source. The absence of identifiable systems in this area may potentially be due to river levels in these more upland areas being too low, and the valley floor too narrow, to support the extensive bedwork systems most likely to be visible to remote survey. Additionally as this area is now dominated by the city of Stoke-on-Trent (and its substantial hinterland of late post-medieval industrial development and mineral exploitation), it is likely that any earlier areas of meadow will have been destroyed and late post-medieval development of new meadows in this area inhibited.

Several of the most well-preserved targets identified within the survey were located along the Trent. Of particular interest was a system identified in the vicinity of Trentham and Hanford, in a field identified by maps of 1599 and 1716 as 'Prior's meadow' (Gregory 2010, 72, 77). This system displayed the preservation of substantial earthworks and of mid to late 19th-century brick structural features, and had a well-defined system plan in aerial photographs (Plate 1). Whilst some of the original features had been levelled, it appears in other areas of the system that some panes may in

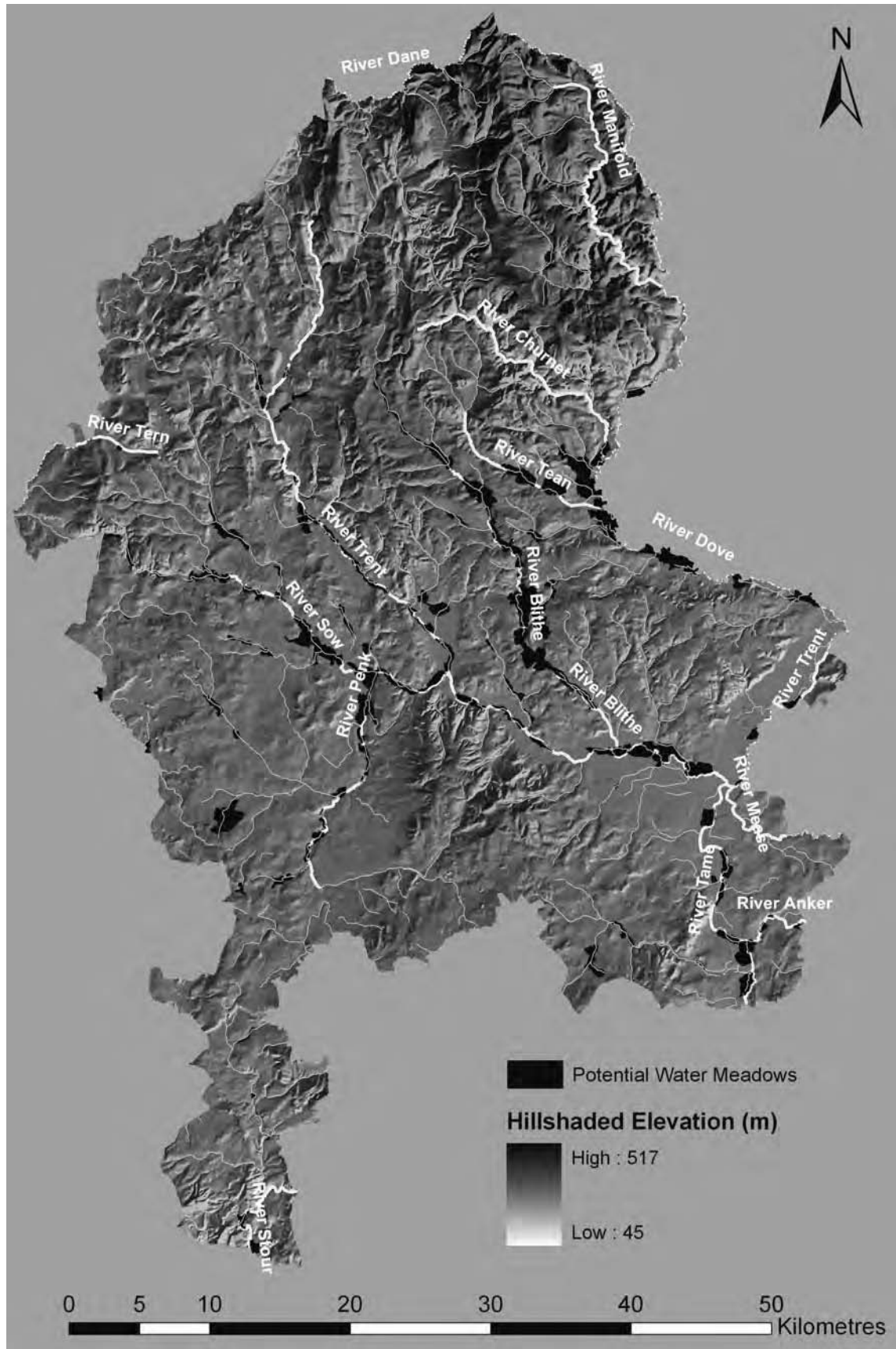


Fig. 4 The distribution of identified potential water meadows within Staffordshire, overlain upon hill-shaded digital elevation model and county watercourses
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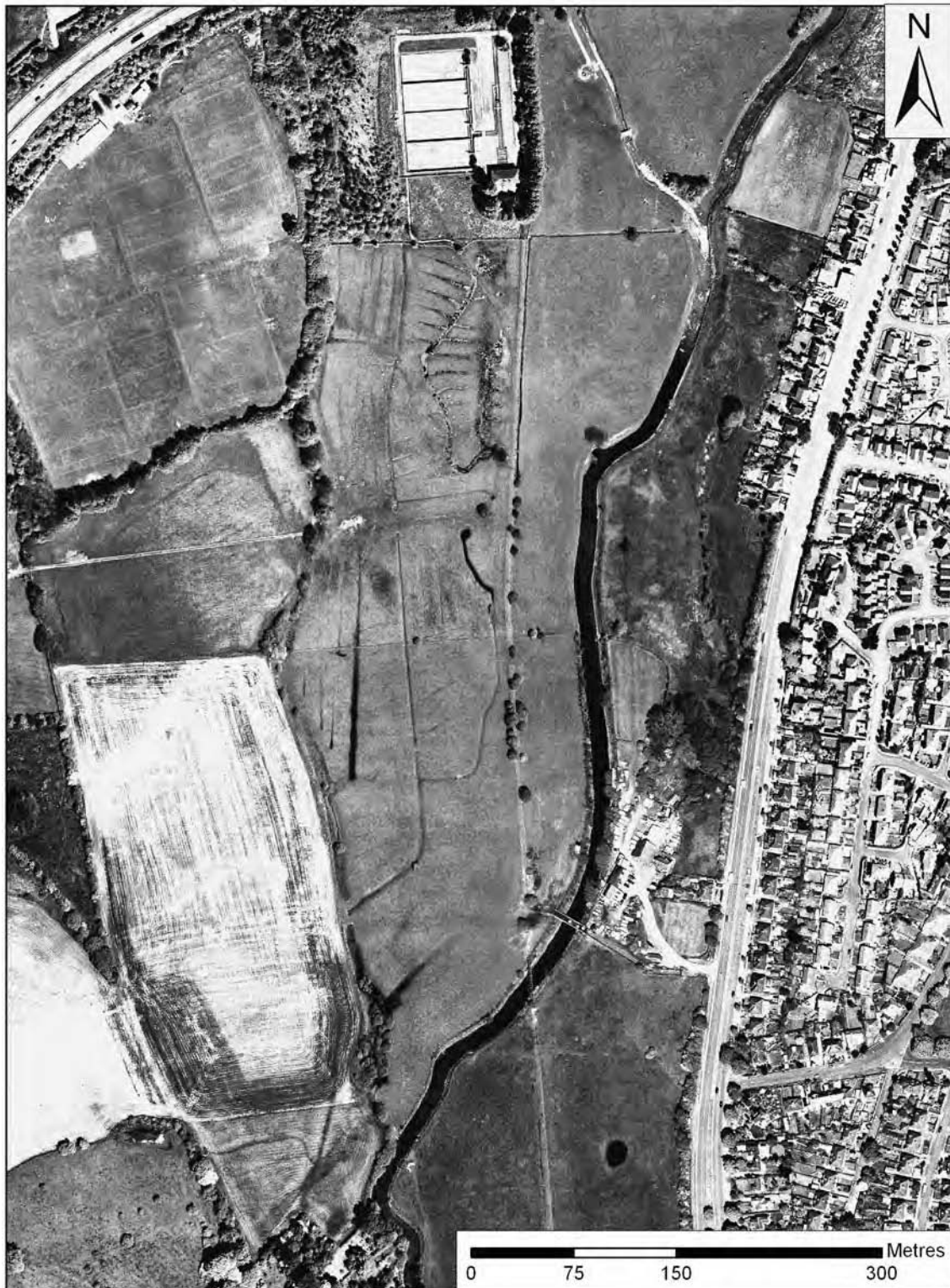


Plate 1 Aerial photograph (acquired in 2000) of water meadow north of Trentham Gardens and west of Hanford, in land now owned by Severn Trent Water and Northwood Farm (contrast is enhanced for feature visibility)
© Bluesky International, www.bluesky-world.com

fact have been recently enhanced in height, whilst retaining their original plan, perhaps as a response to regular flooding of the area in order to maintain and improve the drainage provided by the former channels. Documentary references (Loch 1820) suggest the possibility that this system could be the remains of the 'model meadow' constructed by the marquess of Stafford near Trentham Home Farm to encourage his tenant farmers, although further research is required to confirm this in the light of the number of meadows recorded for the Trentham estate over a prolonged period (Gregory 2010, 78, 81). The example set by the model meadow was stated to have resulted in local farmers embracing the practice with such enthusiasm that by 1820 some farmers were even watering areas of land unsuitable for the technology (Loch 1820). Therefore, in the light of documentary evidence for numerous features around the Trentham estate and the wider area, the paucity of identified water meadow features may be partly indicative of the level of feature loss due to development and landscaping. In the vicinity of the estate itself the only other visible surviving meadow lies south of the lake, where a water meadow known as 'Tag's meadow' is recorded as going out of use in 1774 (Gregory 2010, 81). Further particularly well-preserved systems were identified near Stone and Rugeley, with the latter demonstrating well-preserved panes and drains across a substantial proportion of its extent (Plate 2).

The Dove

The Dove valley contained a total of 15 targets, the majority and the largest of which lay on the lowland course between Ashbourne and the confluence with the Trent. These systems also appeared mirrored on the Derbyshire side of the river, beyond the scope of this study. The occurrence of meadows in this area correlates to references from the mid 18th century to highly valued naturally flooding meadows along the Dove (Greenslade and Johnson 1979, 69), and may represent management of this natural asset. Water meadow targets along the Dove showed a relatively good recent state of preservation overall. This is most likely due to most of the targets lying within the extant flood plain, thus minimising the likelihood of modern development, and also due to the area's dairy focus having spared them the rigours that long-term intensive crop agriculture can have upon archaeological materials.

The Sow

Twenty-seven targets were identified within the area of the Sow valley, from near to the river source through to its confluence with the Trent, with a relatively even distribution and a wide range of recent conditions. Once again the largest targets were present within lowland open areas, focused in this case around Stafford. Several small targets with apparent high preservation lay immediately adjacent to less well-preserved systems in these areas, potentially indicating the original character of the larger systems.

The Penk

Nineteen potential water meadows were located within the Penk valley and its catchment zone, with a total of 11 along the Penk itself between Brewood and Stafford and 8 on more minor tributaries. Potential meadows ranged in size from 2.7 hectares to 287 hectares, and the majority of the features appeared to have a relatively good recent condition, with some major earthwork features preserved across sizeable portions of their extent. Several very well-preserved examples were seen, the most prominent being at Creswell Farm near Stafford. Here desk-based survey suggested the presence of well-preserved system components, and field survey confirmed the presence of a bedwork system with exceptionally preserved carriers, pane earthworks and main drains (Plate 3).

The Blithe

The Blithe valley contained 18 targets, distributed within a relatively continuous chain from the northern head of the river to its confluence with the Trent, with just over half demonstrating moderate to good preservation of some portions of the former system. Four targets appeared to be fed by tributaries of the Blithe, and the remainder by the river itself, including a large area of lost meadow discussed in the 'observed threats' section below. The Blythe valley data serves well to demonstrate the close relationship between meadow extent and valley topography, with potential meadow targets appearing long and thin in form near the source, then possessing much wider extents within the central, broader area of the valley, and then reducing in extent prior to the confluence with the Trent in response to a narrowing of the valley at this point.



Plate 2 Well-preserved portion of water meadow near Rugeley, viewed from the north-east



Plate 3 Well-preserved bedwork water meadow at Cresswell Farm, Stafford

The Tame

The Tame valley was found to contain a total of 21 possible water meadows. These appeared relatively evenly distributed, with a maximum spacing of 2km between systems on the Tame itself, and a slight clustering of targets towards the head of the Bourne brook (apparently exploiting a wide area of relatively flat topography at this point). Only three targets displayed moderate to good preservation, the remainder demonstrating either minor preservation of former meadow, uncertainty due to vegetation cover or photograph resolution, or the complete loss of the meadows since the 1960s. Additionally, one of the sites (assessed in the field) was demonstrated not to represent former meadow and was subsequently removed from the data. This site (at Warwickshire Moor on the river Anker and classified as uncertain during the desk-based survey) demonstrated the presence of an apparent large channel connected to the Anker in the historic mapping, with the channel and potential smaller channels running from this visible in the aerial photographs, but field examination confirmed that these features were, as suspected, drainage features associated with a former railway embankment running NE–SW across the site. This example serves to demonstrate both the potential for misidentification of drainage features as water meadow, so highlighting the requirement for analysis of as many concurrent data points as possible and the value of including an uncertainty value in such analyses in order to help minimise the creation of false positives. The destroyed and degraded features within the valley appear to be focused either upon Tamworth and its associated development or to have been degraded through intensive farming.

The remaining features were distributed across the more minor rivers and tributaries of the county the Stour river valley in the south of the county, the Tern in the west, and around the tributaries feeding the Dove and bounding the county in the upland north.

The Scale of Identified Water Meadows

The size of individual water meadow systems identified within the county was seen to vary widely, from a single hectare to in excess of 200 hectares, with the primary governing factors appearing to be local topography, natural drainage, and the contemporary availability of floodplain space. In many areas the full available valley space did not appear to be utilised, due to lack of suitability of land for use in water meadow agriculture, differing ownership, and diverse other factors. One limiting factor appears to be spatial restrictions imposed by man-made obstacles such as valley settlements, canals, and railways. However, it is difficult to determine the relative dates of many of these features to the meadow targets, as they were already present at the time of the earliest maps used by this study. This leads to questions as to whether the settlements, canals, and railways are respecting the meadows spatially, the meadow respecting the obstacles, or neither, with former meadow extent having been larger and portions of their extent having been destroyed by the later man-made features. Only further analysis, on a site-by-site basis and in the form of detailed examination of field relationships and of local historical records, may resolve these questions.

The Preservation of Identified Water Meadows

Given that differing levels of identification are possible from the different aerial photographic datasets, it was not possible to obtain a reliable assessment of how many of the targets have changed in condition over recent time, beyond observations of the apparent loss of some features (discussed below). The use of data from multiple periods is of high value; however, this difference in image resolution demonstrates one of the problems with the use of point-in-time aerial photography, coupled with other considerations which can cause variance in feature visibility such as season of acquisition, flight angle, and time of flight during the day. Whilst the ideal is always to use as many available datasets with consistent coverage as possible, and acquired in a variety of conditions, over as many points in time as possible, this is of course tempered by logistical and practical considerations, principally data availability, funding, and time available for survey.

However, whilst an accurate assessment of changing condition was not possible, an assessment of apparent condition in 2000 was. Analysis showed that at that time: 15% of identified potential water meadows were well preserved (survival of upstanding carrier earthwork features across more than 50% of the identifiable original meadow extent); 46% were moderately preserved (survival of the basic elements such as head and main drains and/or survival of carriers across up to 50% of the original extent, with minor features present as crop or soil marks); and 14% were poorly preserved (only main features surviving, minor features only seen as crop or soil marks). The nature and condition of a further 16% of the potential features remained unknown, due to data being too

limited, or vegetation cover too dense to allow effective assessment. Whilst all features that were not confirmed through ground survey should only be considered *potential* water meadows, with a varying degree of certainty attached to this identification (partially related to feature visibility), features which were recorded as uncertain in nature may be considered those least likely to represent former water meadow. Finally, 9% of the identified potential former meadows appeared to have been destroyed by 2000.

The Morphologies of Identified Water Meadows

The form of systems identified within the county appears to be heavily biased towards bedwork systems. Only a few examples of possible 'floating upwards' or 'catchwork' systems were identified, none of which can be considered fully field-confirmed because of access restrictions. This bias in typology can be interpreted from several perspectives. Firstly, due to the productivity of bedwork systems, and the widespread availability of large areas of lowland river valley to support them, it seems logical that widespread adoption of this type of meadow might be favoured within Staffordshire. However, the extensive upland areas of the county would also suggest that alternative systems would still be of benefit, particularly given evidence from the region for the use of such systems (Marshall 1790), and with large areas in which they could be effectively employed. Therefore, feature visibility may instead prove more convincing as an explanation for the absence of such systems within the survey results, with features indicative of floating upwards or catchwork systems harder to identify through aerial photographic and historical mapping methods, as only small numbers of drains are required. In upland areas, therefore, features may be difficult to distinguish from simple drainage, or may not be mapped. Consequently, this present assessment should be considered to have been geared primarily towards the identification of bedwork systems. It should also be noted that in the case of any large catchwork systems upon a shallow valley-side gradient, it may also prove difficult to distinguish from bedwork systems which have been heavily truncated. As a result, typologies defined within this study should be treated with caution. Indeed, the survey was structured with this in mind, with features identified but not assigned a typology based upon the remote mapping. Therefore, future detailed complementary examination of local historical records and field survey may be of benefit for the further identification of other system types, and the refinement of the typologies of the identified systems.

Amongst the well-preserved targets a variety of system patterns was seen. Whilst examination of the morphology of bedwork systems across the county was beyond the scope of this study, the results suggest that there is a sufficient available corpus of preserved features within Staffordshire to support some such work in the future. Due to differential preservation of systems (and the potential loss of diagnostic system features), any truly detailed comparison of preserved system plans would best be performed through use of rapid methods of high-resolution topographic survey, such as real-time kinematic GPS field survey, or ideally lidar analysis. These methods may be able to remotely resolve large areas of features which were too topographically subtle to have expression in the aerial photography used in this study.

Dating Evidence for Identified Water Meadows

The dating of features associated with water meadows is a difficult proposition, particularly in remote, non-intrusive surveys of this type. In the case of this survey the best proposition for dating systems came through assessment of the material character of identifiable structural features associated with the water meadows, when seen in the field. As previously stated, care must be taken when interpreting on the basis of such information: given the likely frequent refurbishment of active water meadows over the course of their use, the identifiable structures may merely give us a *terminus post quem* for a period of use of a system. However, field survey did reveal several features of interest, which may be suggestive as to dates of use and former characteristics of the identified systems.

Sluice housings and a large bridge (now buried, and crossing a former large brook) were observed, apparently *in situ*, at Willows Farm on the River Dove, the largest target identified in the survey. These features were constructed from well-dressed sandstone and were present within fields where any earthwork features appeared to have been lost to the plough, although some other areas of the system were well-preserved. The sluice housings took the form of paired sandstone blocks with a matching vertical slots cut for a hatch to be secured between them (Plate 4). The use of stone features within this system tentatively suggests that it may be relatively earlier than those discussed below,



Plate 4 Sandstone sluice hatch housings at Willows Farm, near Uttoxeter



Plate 5 Destruction of a formerly well-preserved sandstone sluice housing at Willows Farm, due to encroachment of tree roots (image on left dates from 1991; courtesy of Mr Andrew Allen; image on right dates from 2008, during field survey)

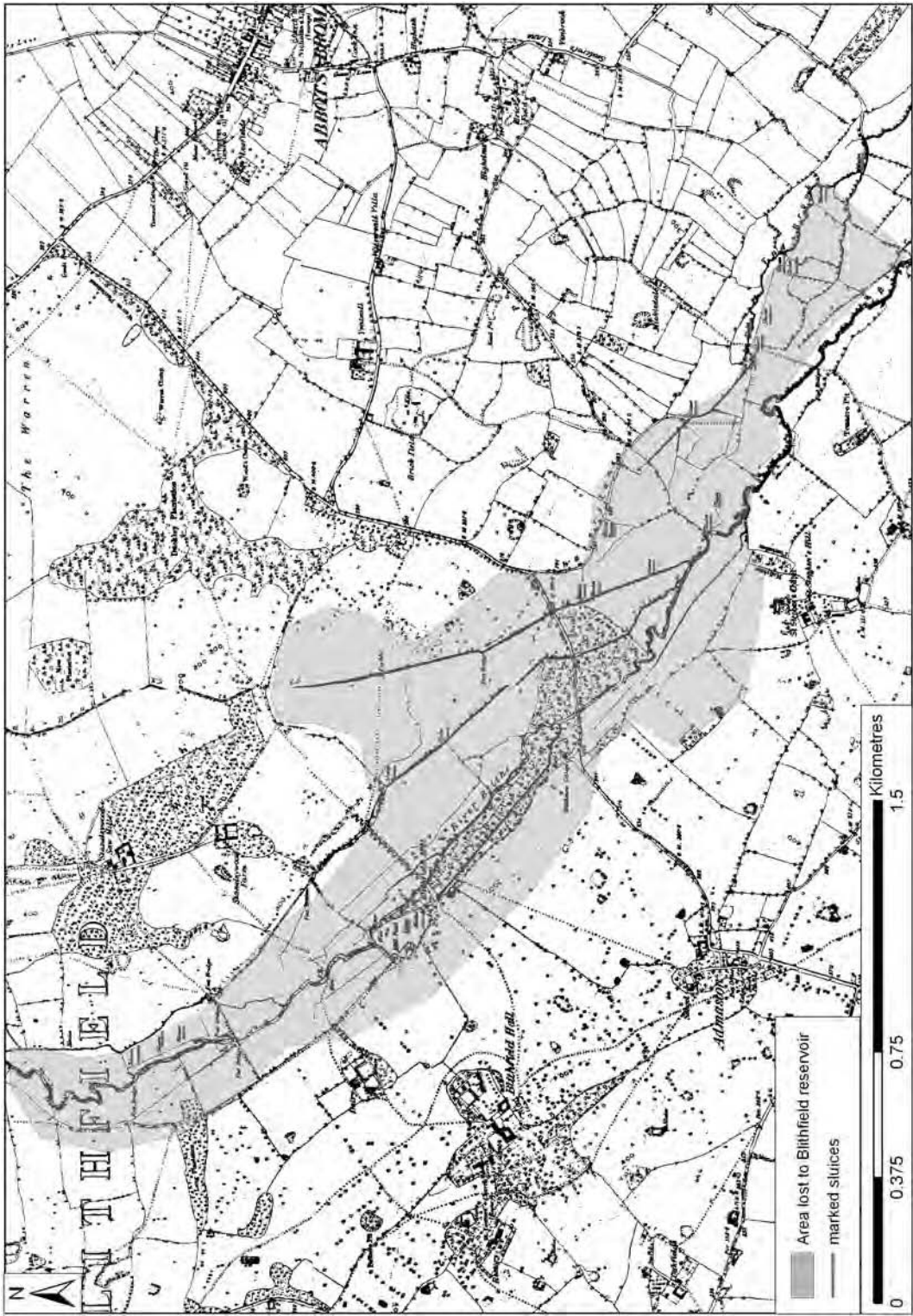


Fig. 5 Identified area of potential former water meadow now lost to the creation of the Blithfield reservoir, with sluices recorded in historic mapping highlighted

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potentially pre-dating the mid 18th century, given the widespread availability of brick from this point onwards and the comparative ease of transport and construction possible with brick features in comparison to stone ones.

Systems possessing structures composed of brick were identified at the previously mentioned target at Trentham, and at Cresswell Farm on the Sow. These structures took the form of a series of low brick bridges allowing access over former head drains, particularly in the case of the Trentham system, where six such features were recorded. Features were composed of apparently mid to late 19th-century bricks, some of which were industrial blue-brick possibly of the Staffordshire blue-brick style (pers. comm. Shane Kelleher, February 2008), potentially adding weight to suggestions that this may be the Trentham model meadow. Similar features, in particular a bridge crossing the head/main drain for the preserved bedworks, were observed at Cresswell Farm. Here a series of red brick wall-remnants was also observed, partially buried to the immediate north of the modern river course, suggesting the course of a brick-lined channel feeding the main/head drain, although excavation would be required to assess this conclusively. A possible preserved sluice mechanism, removed from any housing and presumably from the immediate locality, was also located, in the form of a 1.4m long timber, with an iron screw of 1.2m length projecting from its centre, and with sockets at either end of the timber to allow rotation to work a mechanism. However, specialist consultation would be required to determine if this item does indeed represent a sluice mechanism, or is simply an unrelated agricultural feature. Cumulatively, these observations potentially suggest a later date for the use of these systems in comparison with those at Willows Farm, although as the brick features reflect maintenance of access and drainage (rather than directly floating-related features such as sluice control systems) they cannot be taken as confirmation of recent cultivation and controlled floating of the systems.

These features were the only structural remains observed amongst the field-assessed sample. The identification of further such features through future field survey would be of value in assessing the full nature of the archaeological resource associated with water meadows within the county, and in attempting to ascertain a chronology for the use of the water meadows and to facilitate protection of the features themselves. *The Conservation of Water Meadow Structures* (Hampshire County Council 2004) would serve as a useful guide in any such endeavour.

Observed Threats to Water Meadows in Staffordshire

The survey indicated water meadows in Staffordshire to be a threatened resource, with the complete loss of at least 15 distinct areas of possible former water meadow observed to have occurred between 1963 and 2000. Whilst differing resolution between the 1960s and 2000 datasets meant that an accurate assessment of more subtle changes in the condition of identified systems could not be made, it is likely that a sizeable proportion of the identified systems may have suffered degradation. In the case of the recent Hampshire survey, it was found that up to a third of the identified features had degraded in condition between the two acquisition dates for data employed (Wykes 2002). Assessments of the likely causes of the observed feature loss in the Staffordshire survey, based upon both remote and field examinations of these targets, resulted in the identification of several key contemporary threats to the survival of water meadow features.

The most significant threat appeared to be ploughing. Several field survey targets, such as at Orgreave and Willows Farm, demonstrated areas which had been subject to ploughing or agricultural remodelling that had removed all earthwork features, or at best left only the deepest channels extant. Since the majority of identified water meadows appeared to be still in use as farmland, this threat may indeed be the most pressing to water meadows in the county. The propensity of former water meadows to flood may have formerly protected many from the plough, but efforts to prevent such flooding in order to produce areas suitable for crops can also damage relict water meadow features.

Other observed threats were settlement expansion and the creation/restoration of areas of wetland, the latter (whilst an admirable enterprise) being one which (if unwitting of the presence of former water meadow within the area) can be detrimental to preservation. A large loss was associated with the creation in 1953 of the Blithfield reservoir, when up to 174 hectares of potential water meadow as indicated by clearly marked channels and sluice systems visible flanking the River Blythe in first edition historic mapping were submerged (Fig. 5). A portion of this area may relate to meadows which were recorded as being watered at Blithfield between 1800 and 1807 on land owned by Lord Bagot (Greenslade and Johnson 1979, 110).

Degradation of preserved structures associated with the systems because of encroachment of vegetation was also observed, with Plate 5 showing the effect of tree-root encroachment between 1991 and 2008 on a stone sluice hatch setting at Willows Farm.

Any future mitigation and management of any of such threats depends primarily upon prior knowledge as to the whereabouts of potential former meadow systems, something which this survey, together with the Staffordshire County Council HER, is intended to provide.

THE SIGNIFICANCE OF THE SURVEY, RESEARCH QUESTIONS, AND FUTURE RESEARCH DIRECTIONS

The results of the Staffordshire survey demonstrate that water meadows were previously a significantly under-represented form of archaeology within the county's HER (as formerly only three features had been recorded for the county), and therefore within associated cultural management strategy. Indeed, it was the Staffordshire County Council HER team's foresight and recognition of the potential for this under-representation which instigated this research, in order to allow the future management of the resource. Most significantly, the number and nature of the features identified suggests that a sizeable and potentially important aspect of Staffordshire's post-medieval agricultural heritage had previously remained relatively unconsidered. Consequently, this data may necessitate a reassessment of the precise nature, balances, and evolution of post-medieval agriculture within the county by historians and archaeologists dealing with this period, so 'opening the floodgates' (if the pun can be forgiven) for further research.

At the local scale the results prompt further research questions specific to the water meadows themselves. These questions are primarily focused around the requirement for more detailed characterisation of a larger proportion of the potential water meadows identified during this survey, particularly in terms of chronology and morphology. Field assessment of a further spread of targets from within the model would help to achieve this purpose and further ascertain its effectiveness in a wider variety of conditions. Upland targets, in particular, would benefit from such an assessment, as no permissions were available for such targets during this phase of field survey.

In terms of individual water meadows, our understanding would be best complemented through the reconstruction (where possible) of detailed plans of system earthworks, and through dating. This strategy would be best applied to well-defined systems, where a detailed examination of how a system was managed may become possible. Relatively few systems seen within this study showed sufficient definition in aerial photographs to permit the reconstruction of detailed plans from these sources alone. Detailed topographic or airborne lidar survey may be appropriate methods to produce such plans, and subsequent to this study a topographic survey has already been performed upon the Willows Farm complex by Benchmark Archaeology (pers. com Richard Cherrington, June 2010). Further such work might permit the characterisation of any recurrent patterns or trends amongst the morphologies of the county's water meadows. The dating of the water meadows remains a prime concern that can be addressed only through assessment of extant structural remains by appropriate specialists, or through excavation of one of the identified meadows and the dating of securely stratified materials.

To complement the archaeological investigation of these features, analysis of documentary sources specific to smaller areas of the county may prove useful, in order to refine the extent of identified targets or potentially to identify further areas which were overlooked by this survey. Examination of the 1820 discussion of lands at Trentham (Loch 1820) indicated the former presence of more than ten separate areas of water meadow, and more detailed historical examination of the estate by Gregory shows records to be present for several meadows over a prolonged period from 1678 to at least the early 19th century (Gregory 2010, 78, 81). However, this survey revealed only four targets, and farms which Loch referred to as possessing meadow showed no indicative features on the historic mapping. Additionally, Loch also implied the production of meadow away from significant watercourses, reducing the likelihood of such features being identified within studies such as this one, which focus upon mapped watercourses. If the same is true for other areas within the county, it would suggest that a detailed examination of appropriate historical documents could substantially enhance the picture of water meadow cultivation provided by this survey. A comparative examination of earlier maps for specific areas, such as available estate and tithe maps may also be of particular benefit.

Seen from a regional perspective the scale of water meadow adoption suggested by the survey has demonstrated the potential for substantial numbers of water meadows to have been created within

a Midland county (although the chronology of this adoption remains to be explored in detail). This observation in turn supports the possibility that significant quantities of former water meadows could also remain unidentified (and therefore unmanaged by heritage agencies) at a regional level, particularly within neighbouring counties of similar character.

Finally, from a national perspective, the results have demonstrated the value of this form of this form of rapid remote survey methodology in areas beyond the traditional water meadow heartlands. As with the previous surveys of this type, the remote methodology, use of historical maps and aerial photographs, and the large-scale nature of this method can also be seen as potentially allowing a more effective overall assessment of the likely former level of water meadow adoption within an area than would field survey alone, divorced as it is from whether or not the features still retain an obvious expression within the modern landscape. Indeed, a case could be made for other test-cases nationally, in order to gain a more rigorous assessment of the true former scale, extent, and geographical characteristics of these striking agricultural features beyond their traditional heartlands. It should be noted, however, that whilst this method remains an effective rapid large-scale remote investigation tool, it does have limitations, as only features discernable to aerial photography and represented on historic maps are recorded. Whilst the value of the 1st edition maps cannot be refuted, their use as a base survey dataset means that only features which had notable expression since the mid 19th century onwards can be identified, a window which in the case of Staffordshire has been shown by documentary research associated with this project to lie nearly 200 years after the first arrival of the technology within the county. Consequently, there remains the possibility of future technical refinement of surveys of this type, at varying scales, in order to develop the potential for the identification of as many former water meadows as possible from a wider chronological range, including those features with little or no recent visual or mapped expression.

Ultimately, whether the Staffordshire results are typical or atypical of areas beyond the known meadow heartlands remains to be seen, and can be determined only if further landscape-scale assessments be undertaken. Suggestions that the central western counties were an area of relatively widespread water meadow adoption (Williamson 2007, 47), coupled with this survey having identified just over half the number of features recorded during remote survey in the meadow heartland of Hampshire, may raise the possibility that Staffordshire stands mid-range between those areas where this striking form of agriculture was most widely adopted and those where it remained a more restricted practice. However, only time and further data will tell.

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BRITONS AT MORFE

ANDREW BREEZE

The name of Morfe has been a Staffordshire mystery. All accept it as Celtic, but its meaning has been unknown. Yet discussion of the place's history may provide an answer. In the 13th century Morfe was a royal forest, like the nearby Kinver, Wrekin, and Cannock Chase (also with Celtic names).¹ Its whereabouts is shown by Morfehall Farm (SO 8287), Morfe House Farm, and Morfeheath Farm, near Enville in the far south of the county. The region has woodland to this day, and its wildness in the middle ages is implied by a grant of 736, fortunately surviving in an original copy.² Thanks to this charter, Morfe and Kinver figure on a map for the early Anglo-Saxon period.³ The grant refers to lands on each side of the river Stour, including Kinver and a 'wood called Moerheb, of which woods the greater part belongs to the aforesaid land'.⁴ This vagueness contrasts with the precision of other charters, setting out boundaries by reference to specific landmarks. The place must have been a wilderness, and it is thus no surprise that in the earlier 7th century Morfe and its neighbouring forests should have blocked Mercia's advance westwards for some fifty years.⁵ Besides informing us on landscape, the charter (the oldest document for Staffordshire's history to come down to us in a contemporary form) provides vital evidence on forms of *Morfe*.⁶

It there figures in the archaic form *Moerheb* and (in a later hand) *Moreb*; in Domesday Book it is *Morve*; and in 1166 *Morf* and *Morue*. Ekwall thought this might be the equivalent of Welsh *mor-dref* 'big village'.⁷ But Coates observes that we should not expect loss of *tr* as early as the 8th century.⁸ Nor would we find villages big or small in remote woodlands. The new Cambridge dictionary says nothing on Morfe, although it tentatively explains the name of Kinver from Welsh *ci* 'dog' and *bre* 'highland', with the sense of 'uplands of hounds'.⁹ The question needs looking at again.

Now, in its entry for *mwyar* 'blackberries; brambles, briers', the University of Wales dictionary cites the Old Cornish cognate *moyrbren* (*-bren* = 'tree') as a gloss on Latin *morus* 'mulberry plant'.¹⁰ This suggests a meaning for the first part of *Moerheb*. But there is an objection. The diphthong (with rounding after a labial) of Cornish *moyr-* is also spelt *oe*.¹¹ Yet that would not accord with the *oe* of *Moerheb*, since the Old English grapheme represented not a diphthong but a half-open front rounded vowel.¹² We may compare the diphthong of Old Welsh *mearen* 'brambles' (glossed by its Middle Irish cognate *smer*) in an Oxford manuscript.¹³ How do we solve this problem? It seems that Old English, having no exact equivalent to the post-labial *oia* (where *i* is a semi-vowel) of Primitive Welsh and Cornish, here substituted the front rounded vowel represented by *oe*. If this solves the phonological difficulty, then there is no difficulty in citing the element from other place-names. A variant from of Welsh *mwyar* occurs in Cilmeri 'nook of brambles', a spot (near Builth Wells in Powys) sacred to Welsh patriots as being where the last native prince of Wales died in 1282.¹⁴ One might add that, in a tangled Staffordshire forest, briers and thorns would not be unknown.

As for the second element of *Moerheb*, this is explicable from the Welsh element *eb-* 'horse', which is well-attested. It can be related to Welsh *ebol* and Breton *ebeul*, both meaning 'colt', or the name of Eposognatus 'one expert with horses', a prominent Celt mentioned by Livy and Polybius.¹⁵ In place-names it occurs in Mynydd Epynt 'horse-track mountain' (north of Brecon), where the

1 A. L. Poole, *From Domesday Book to Magna Carta* (2nd edn, Oxford, 1955), 28.

2 E. A. Lowe, *English Uncial* (Oxford, 1960), plate 23.

3 *Map of Britain in the Dark Ages* (2nd edn, Southampton, 1966).

4 F. M. Stenton, *Anglo-Saxon England* (3rd edn, Oxford, 1971), 40, 286.

5 Peter Hunter Blair, *An Introduction to Anglo-Saxon England* (2nd edn, Cambridge, 1977), 36, 250.

6 *English Historical Documents, c. 500–1042*, ed. Dorothy Whitelock (2nd edn, London, 1979), 492.

7 Eilert Ekwall, *The Concise Oxford Dictionary of English Place-Names* (4th edn, Oxford, 1960), 331.

8 Richard Coates and Andrew Breeze, *Celtic Voices, English Places* (Stamford, 2000), 334.

9 *The Cambridge Dictionary of English Place-Names*, ed. V. E. Watts (Cambridge, 2004), 349; cf. David Horowitz, *The Place-Names of Staffordshire* (Brewood, 2005), 395–6.

10 *Geiriadur Prifysgol Cymru* (Caerdydd, 1950–2002), 2516.

11 K. H. Jackson, *Language and History in Early Britain* (Edinburgh, 1953), 359.

12 Alistair Campbell, *Old English Grammar* (Oxford, 1959), 15.

13 Joseph Vendryes, *Lexique étymologique de l'irlandais ancien: Lettres R S* (Paris, 1974), S 141.

14 Hywel Wyn Owen and Richard Morgan, *Dictionary of the Place-Names of Wales* (Llandysul, 2007), 86.

15 D. Ellis Evans, *Gaulish Personal Names* (Oxford, 1967), 90–2, 197–9, 209.

Regular Army trains for battle.¹⁶ Once again, however, the form is problematic. How do we account for the *h* of *Moerheb*? Here we are aided by some of the earliest English glosses. These have a strong Mercian colouring, and frequently show inorganic *h*, as in *hynnilaec* ‘onion-leek’.¹⁷ The *h* of *Moerheb* may thus be merely graphic, and not represent any spirant or breathing. On this basis, Morfe will mean ‘horse brambles, thorns where horses were found’, as opposed to Kinver ‘hill of dogs, hound uplands’. (Kinver overlooks Morfe.) This interpretation has English and Welsh parallels. In England is Studdal ‘horse-herd forest’, now in open country on the Downs between Deal and Dover, but near old woodlands.¹⁸ In Wales is Shirenewton (west of Chepstow, Monmouthshire), which in Welsh is called Drenwydd Gelli-farch ‘new settlement of the grove of horses’.¹⁹ The Shirenewton district is still thickly wooded and (for what it is worth) is close to St Arvans, home of the Welsh Grand National.

There is reason, then, to think that Morfe’s name means ‘horse brambles, thorns of horses’. It was a forest by which the Britons bred and pastured steeds. This seems to tally with evidence on the Ordnance Survey map, which shows a racecourse (long disused) in local woods. Racecourses are usually sited by land suitable for the grazing and exercise of coursers, and this is indicated by the names of nearby Heathlands, Enville Common, and Morfeheath Farm. It appears that horses were reared on this open ground in pre-English times, so that the woods beyond them were called *Moerheb*, the brambles or thorns by which horses are found.

The Britons idolized horses. They worshipped Epona ‘divine mare’, a goddess of muleteers whose cult was (unusually for a Celtic divinity) accepted by the Roman army, as shown by inscriptions from Scotland to the Balkans.²⁰ In his eighth satire, Juvenal mocked a horse-mad ex-consul who drove his own carriage and (despite making the old sacrifices of an ox and sheep to Jupiter) swore by Epona alone, with her picture daubed up on his reeking stables.²¹

Interea, dum lanatas robumque iuencum
More Numae caedit, Iouis ante altaria iurat
Solam Eponam et facies olida ad praesepia pictas.

Twelfth-century Welsh narrative likewise supplies references to horses (though the view that Epona is there represented in the heroine Rhiannon is a fantasy of Cardiff scholars).²² If, then, the above correctly explains the name of Morfe, it underlines a Celtic preoccupation with horseflesh, as well as providing a glimpse of British influence in the West Midlands, a subject now gaining attention.²³

16 Thomas Jones, ‘The Black Book of Carmarthen “Stanzas of the Graves”’, *Proceedings of the British Academy*, LIII (1967), 97–137.

17 *Old English Glosses in the Épinial-Erfurt Glossary*, ed. J. D. Pfeifer (Oxford, 1974), lxxxii n. 6.

18 A. D. Mills, *A Dictionary of English Place-Names* (Oxford, 1991), 315.

19 Anon., ‘Shirenewton’, in *The Welsh Academy Encyclopaedia of Wales*, ed. John Davies, Nigel Jenkins, Menna Baines, and Peredur Lynch (Cardiff, 2008), 814.

20 K. H. Jackson, *The International Popular Tale and Early Welsh Tradition* (Cardiff, 1961), 133 n. 68; Lawrence Keppie, *Roman Inscribed and Sculptured Stones in the Hunterian Museum, University of Glasgow* (London, 1998), 57, 104–5.

21 *D. Iunii Iuvenalis Saturae*, ed. A. E. Housman (2nd edn, Cantabrigiae, 1931), 79.

22 *The Mabinogion*, tr. Sioned Davies (Oxford, 2007), 230; Andrew Breeze, *The Origins of the ‘Four Branches of the Mabinogi’* (Leominster, 2009), 3, 133–4.

23 D. J. Tyler, ‘Early Mercia and the Britons’, in *Britons in Anglo-Saxon England*, ed. N. J. Higham (Woodbridge, 2007), 91–101.

REVIEWS

Martin Carver, *The Birth of a Borough. An Archaeological Study of Anglo-Saxon Stafford* (The Boydell Press, 2010), pp. xv + 176. £60.00. ISBN 9780851156231.

Between 1975 and 1985 the county town of Stafford was the subject of an extensive campaign of excavations, unprecedented in its history, as redevelopment made large areas of the town archaeologically accessible to area excavations. To these Professor Martin Carver has added a consideration of excavations before and since, drawing on some fifty-five archaeological interventions to tell the story of early medieval Stafford, ‘an attempt to use archaeology to write history’ (p. xi). Carver declares in the preface that he is not offering a conventional archaeological report aimed only at other archaeologists and in this aim he has surely been successful. The content of the volume is readily intelligible, indeed eloquent, if a little repetitive. The specialist reader will find what they need, supported by excellent drawings, plans and photographs and a full archive available digitally through the Archaeological Data Service. For the non-archaeologist, Carver has taken great care to explain the implications of archaeological method, of the stratigraphy encountered and its interpretations, and the ways in which ceramic evidence may be used to map out ‘cultural markers’ (eg Chapter 5). While not disregarding documentary research, his focus is firmly on the archaeology of Stafford, but within which the author has some challenging things to say not only on Stafford, but on burhs and early medieval towns more broadly; his avowed intention is to re-open discourse on the Anglo-Saxon town, and consequently this is a book of much more than local relevance.

The volume is well designed. The six chapters begin by setting the scene on burhs and Anglo-Saxon towns, and posing key questions that reflect the fact that the programme in Stafford was undertaken against the background of a wider enquiry looking at the origins of places that became burhs. Stafford was one of the places established as a burh (in 913) by Æthelflaed, ‘Lady of the Mercians’, as part of the conquest of those parts of England under Danish control. There follows a discussion of the project design and context and of the ‘seven windows’ on early Stafford – six excavations and a pollen sequence from King’s Pool. Thus informed, the reader is then taken through three key themes: firstly, the character of Æthelflaed’s burh, discussing its form and the activities found within it; Chapter 5 turns to examine the Norman and Medieval town; while the final chapter returns to a discussion of Anglo-Saxon Stafford and Carver’s perspective on how Stafford informs a wider debate.

Stafford burh is perceived as a military base with an authoritarian feel to it. The defences of Stafford have so far proven elusive but Carver argues for a small rectilinear fort to the west of Greengate Street, at the centre of the peninsula on which Stafford stands. This contained a new minster church and grain-processing area, while east of the axial street was a pot-making suburb. From Clarke Street came the best assemblages of animal bone, suggesting a 10th-century community heavily dependant upon cattle processed centrally. This was a place where provisioning rather than trade was the purpose, a closed military system that lacked the material clutter of town life and was not integrated with existing economic networks. Carver sees Æthelflaed’s Stafford as a military depot supplying Mercian forces campaigning against the Danes and linking into a series of fortifications, but failing to mature into a thriving urban place.

Carver challenges the prevailing view that the choice of burh sites related to what was there before, whether that be the ‘royal hypothesis’ supposing some prior administrative or seigneurial centre, or the ‘minster hypothesis’ which supposes the use of an ecclesiastical centre. Although unpersuaded by either model the author notes the interest of the Mercian rulers in subsequent royal free chapels, which might reflect areas under the control of royal centres and therefore lend some weight to the ‘royal hypothesis’ in the case of the west midland burhs.

However, the archaeology of Stafford offers no evidence to suggest, as yet, activity between the Roman period and the 10th century: the impact of the Late Saxon development was ‘sudden, planned and ubiquitous’ (p. 56). Looking beyond Stafford Carver is unconvinced by Bassett’s confirmation of pre-burh defences on some sites, and argues (p. 132) that while we do have pre-9th century power centres and minsters, they have not been found in direct relationship to later burhs. He suggests that burh sites were chosen for their strategic location and defensive capabilities: that they were an innovation of the later 9th century, created *de novo* in pursuance of a particular ideal rather than developing from pre-existing centres.

The ideal that Carver postulates is in imitation of Rome. The model envisaged for Stafford burh is of a Roman-type fort laid out on one side of the previous Roman road, with a Roman-type ‘vicus’ on the other side, east of the axial street. He suggests that there are likely to be other instances of rectilinear forts modelled on the Roman fort, dismissing the possibility that rectilinear defended enclosures and street grids might simply be a logical consequence of form rather than conscious imitation. Furthermore, he suggests that the pottery made in the burhs deliberately resembled Roman pottery previously made in the same region – here Stafford Ware taking as its model Severn Valley Ware. Noting West Saxon associations with Rome, and an English landscape that would have been full of Roman buildings offering inspiration, Carver suggests that Æthelflaed and the late Saxon aristocracy was consciously modelling its campaign of conquest and control on Roman ways, as the heirs of Rome (pp. 93, 101). Rome provided an image of triumph.

Carver’s portrayal of post-Conquest Stafford is no less controversial, as a place in need of continual resuscitation, requiring successive surges of external investment, ‘a place unenthused by the urban project’ (p. 8). For instance, he argues that a consequence of the Norman Conquest was the abandonment of the east side of the peninsula and the installation of a new regime to the west: ‘Stafford in the Norman period appears from its archaeology as a bleak place’; and the ‘fury of William I had left its mark’. One feels that Carver is sometimes prone to assumptions when aligning the story of a site to a wider historical narrative. By 1086 life in Stafford had become ‘too miserable’ and the Norman ‘headquarters’ had shifted definitively to the castle to the west (p. 107). Here, however, Carver’s account seems particularly strained. Accepting at face value the cessation of a town castle site by 1086, he overlooks the continued activity of the royal castle site in Stafford, while the notion that Norman ‘headquarters’ (whatever they might be?) had shifted to the castle to the west is simplistic, misleading and confuses the nature of the authority involved. Furthermore, Domesday Book confirms that life was still active in the town.

Carver suggests that the late 12th century brought revival, but not a gradual revival, rather ‘another jump start with a central investment and a controlling design’ (p.108), a characterisation that seems rather improbable to this reviewer. In his discussion of mid 14th-century decline and an urban downturn, Carver himself admits that the picture is uneven (p. 122), leaving the reader to wonder if the case is not overstated. It does not seem to differ greatly from many other places.

Recent years have seen the west midlands well served in publications pertaining to the themes in this volume, among them Steven Bassett’s articles on midland burhs; a review of Stafford’s archaeology through the Broadeye excavations; and the recently published, ‘The Archaeology of the West Midlands’. This latter volume called for long-awaited publication of some key archaeological projects and here Professor Carver has responded to that plea in challenging fashion! Thanks are warranted to the author not only for his perseverance in bringing this major project to publication, but also for doing so in such a stimulating manner. This book will prompt debate, just as the author intended!

University of Birmingham

JOHN HUNT

Christopher Hewitson, Eleanor Ramsey, Michael Shaw, Malcolm Hislop, and Richard Cuttler, *The Great Hall, Wolverhampton: Elizabethan Mansion to Victorian Workshop. Archaeological Investigations at Old Hall Street, Wolverhampton, 2000–2007* (BAR British Series 517, 2010), pp. vi + 102. £35.00. ISBN 978 1 4073 0702 2.

This well-produced report, published by Archaeopress in their *British Archaeological Reports* series, is issued as a volume in the ‘Birmingham Archaeology Monograph’ Series 5. It brings together the outcomes of a range of investigations – desk-top evaluations, watching briefs, and excavations undertaken over some seven years on one of Wolverhampton’s best-known and perhaps best-loved buildings. Old Hall Street has for many years been associated by Wulfrunians with the College of Adult Education, but many will have been unaware of the fascinating history of the site, developing from a medieval agricultural landscape to a moated mansion house of the 16th and 17th centuries, an industrial works in the late 18th century, and an Adult Education College by the early 20th century. This report tells that story through the excavations undertaken, together with the findings of documentary, cartographic, and genealogical studies related to the site and its owners.

The volume is organised rather traditionally around eight chapters. The Introduction is followed by three chapters looking at different aspects of the history of the site. Michael Shaw sets the context

departing from the point of the well-known reference in John Leland's Itinerary (late 1530s/40s) to the ancient house of the 'Luson' family at the town's end of Wolverhampton. Was this a reference to the 'Great Hall' of this study? Shaw offers a brief profile of the Levesons, their position and wealth, followed by the Turton family who came to the house as tenants of the earl of Bradford, to whom the Levesons sold their Wolverhampton estate in 1702. By the early 1780s the hall had moved from a residential to an industrial function as a centre for japanning, although there had been a period of overlap with high-status occupation continuing into the 1770s. The works initially specialised in tin-manufactured oval tea trays but from the 1820s there developed a particular speciality in the japanning of *papier mâché*. The residence was transformed into a factory in the space of a few years and in the process presented an unusual contrast with small-scale cottage industry so characteristic of much of the Black Country at this time.

Shaw also reviews the known descriptions of the house and the cartographic evidence, blessed as we are by Isaac Taylor's detailed map of 1750 which provides the foundation for much of what can be said about the site outside of the excavations themselves, but with other useful sources such as the 'Health of Towns Act' map of 1852. In an otherwise generally well-illustrated report, with figures, plates, and tables, the quality of the figures 8–14 in this section is adequate but not uniformly good.

Shaw's chapter is followed by Richard Wisker's study of the Levesons, an Elizabethan merchant family, picking up the family's origins by the 13th century but naturally focussing on the family in the 16th and 17th centuries. This is followed by Christopher Hewitson and Yvonne Jones who outline the 18th and 19th century japanning and enamelling works at what by now was known as 'Old Hall'.

The next three chapters deal, in essence, with the excavations. Richard Cuttler and Eleanor Ramsey outline the excavations in Chapter 5, interpreting the site through five phases. In Phase 2 there was found morphological evidence of ridge and furrow cultivation that might be associated with the 13th and 14th centuries, while Phase 3 (late medieval / early post medieval period) is associated with the Great Hall built of sandstone blocks, situated on a moated platform that was further defined by a curtain wall on the inner bank of the ditch.

Chapter 6, well-illustrated by photographs and drawings, brings together the work of eight specialists to analyse the finds from the site. It may be seen that the moat was kept clean through to the 18th century as there is no evidence of an accumulating dump before this date. Although there were only relatively small amounts of medieval pottery from the site, Wolverhampton generally has produced very little such pottery and therefore the contribution made by the finds here is important. Particularly interesting is the possibility that the lack of whitewares, common in Staffordshire, might mark the edge of a distribution area, while the links with Birmingham in the 13th and 14th centuries are worthwhile noting within the context of other regional trends in this period.

The post-medieval pottery has some striking similarities with ceramics from the Civil War phases at Dudley Castle, and industrial vessels are also described, dated no later than the 17th century. High status ceramics are associated with the post-medieval phases of the site, a material culture of the period that is reinforced with the glass and bottles found, the latter particularly well represented by wine bottles. The Old Hall assemblage shows the development of bottle forms from the late 17th century to the late 19th century, a 200-year period dominated by finds of wine bottles. The change of use to japanning is reflected on the site by the appearance of such items as glass phials and beer bottles.

The environmental evidence from the site is discussed in Chapter 7, local habitats including plants that like water and waterside locations; stands of tress in or around the moat; and grassland and cultivated land nearby, habitats that are most readily compared with the watercourse linking the manorial moat with the parsonage moat in Edgbaston Street, Birmingham. These are characteristics that seem to fit well with a moated site and the nature of the site as depicted on Taylor's map of 1750, although there is no certainty that such arrangements dated back to the Elizabethan period as well. None the less, gardens and orchards would normally be expected in association with high status medieval residences, and surely no less so with an Elizabethan mansion. We are also reminded that the Hall was something of an isolated feature until the early/mid 19th century.

The volume closes with a 'Discussion' chapter that brings together the principal observations but also attempts a more detailed reconstruction of the elevation and layout of the hall itself – a three-storey hall with a two-storey central porch on the west front, flanked by large mullioned and transomed windows of late 16th-century date. To the north and south are rear wings extending east, that to the north thought to have been a service block, and to the south superior accommodation. By

1750 the platform was laid out by quadrants with the hall in the north-west, flanked on the remaining quadrants by lawns, fruit trees, and gardens.

Apart from the layout of the hall and site there are two points in the discussion that might be noted. Firstly, whether or not this mansion was preceded by a residence on the site that Leland might have considered ‘ancient’ in c.1540. The evidence for moated sites in the area is noted but not very systematically reviewed and this reviewer was surprised to see the work of Le Patourel and Roberts applied for dating purposes when more appropriate local and regional studies might have been consulted. The argument, that the presence of a moat makes more likely the presence of a pre-mansion residence on this site, feels forced at times. The possibility is noted, and there are some encouraging hints in the ceramics, a fragment of window tracery, and a wooden wedge from a timber-framed building; but there is insufficient here to either confirm or deny the presence of an earlier medieval residence on this site, and of course, if there was, there is no reason to assume that the site was necessarily moated. This could have been introduced as a part of the later enhancements to the site.

Finally, there is also a useful summary placing the Elizabethan mansion into the context of brick building in the west midland region, from the mid 15th century to the end of the 17th century; this serves again to demonstrate the high status of this building within the area, and the suggestion is made that its construction does find resonance with the much debated notion of the Great Rebuilding of 1570–1640.

This is an excellent report. Well produced, it tells a remarkable story in a short, unfussy, and well-illustrated manner, while recognising that there is more to tell if we had the evidence. There are also strands that others can take up and follow elsewhere. For the historian and archaeologist working on medieval and post-medieval life and society in the west midlands, this is a report that they should know about. It is also very much the kind of report that those concerned with the development of an archaeological research framework for the west midlands hoped to encourage.

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