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# Hilborough moated site, Breckland, Norfolk: Archaeological survey

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**HILBOROUGH MOATED SITE,  
BRECKLAND,  
NORFOLK**

**ARCHAEOLOGICAL SURVEY**

Magnus Alexander, Fiona Small and Eleanor Salkeld

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## **SUMMARY**

This short project studied a well-defined medieval moated platform and a range of other earthworks running along the valley of the River Wissey between Bodney and Hilborough, Norfolk. The moat had been put forward for assessment for scheduling as part of a review of schedulings across the MOD's STANTA (STANford Training Area) estate. Its relationships with other, less well understood earthworks meant that a characterisation of the area would be valuable in defining the extent and nature of any proposed scheduled area. In addition, the MOD wished to construct a road and bridge over the River Wissey and an assessment of the archaeology would also inform the planning of these works. The aerial/lidar survey work demonstrated the survival of extensive landscape features for several hundred metres along of the valley to the north and south, as well as on adjacent higher ground. In addition, detailed earthwork survey examined the moat and also suggested an associated enclosure and several potential areas of building remains, in addition to field boundaries and drainage features.

## **CONTRIBUTORS**

Fiona Small undertook the aerial photographic (AP) and lidar mapping, Magnus Alexander the analytical earthwork survey with support from Eleanor Salkeld. Magnus carried out some additional research and completed the report.

## **ACKNOWLEDGEMENTS**

Thanks to staff at the MOD STANTA HQ for enabling full access to the site and Piers Chantry, MOD, for information on the planned development.

## **ARCHIVE LOCATION**

The archive is digital only and retained by the team.

## **DATE OF RESEARCH**

AP/lidar recording took place in November and December 2017. The earthwork survey was undertaken in March 2018.

## **FRONT COVER**

An aerial view of the site from the east, the moat is visible just above left of centre (Damian Grady © Historic England HEA 26670\_036 16-APR-2010)

## **CONTACT DETAILS**

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# INTRODUCTION

## Background to the project

The site comprises a well-defined moated platform and a range of other earthworks running along the valley of the River Wissey between Bodney and Hilborough, Norfolk, on the north-west fringe of the MOD's STANTA estate.

STANTA (the STANford Training Area) is an MOD training facility covering about 120km<sup>2</sup> of south central Norfolk. It was originally established during the Second World War and was centred on a 'Nazi village' intended for training in advance of the D-Day landings and later an 'Irish village'. It has a similar role today and includes an 'Afghan village' recently used for pre-deployment training of troops. In the mid-1980s STANTA was expanded by the purchase of land on the north-west edge of the training area, formerly parts of the Hilborough and Clermont Estates (Davison 1994, 57). The area in question forms a part of this land.

The moated site has been put forward for assessment for scheduling as part of a review of existing and potential new schedulings across the STANTA estate. Its clear relationships with further more extensive, yet poorly understood earthworks mean that a characterisation of the immediate landscape and earthworks, as well as an annotated plan of the site showing their extent would be valuable in defining the extent and nature of any proposed scheduled area. In addition, this area has only been used intermittently for training to date, and in order to bring it more fully into use the MOD wishes to construct a road and bridge over the River Wissey through this area (pers comm Piers Chantry, Defence Infrastructure Organisation). An assessment of the archaeology will also be able to inform the planned line and construction of this route.

## Location and extent

The area in question now lies in the modern civil parish of Hilborough, part of the Breckland district of Norfolk, but in the 19th century it lay within the parish of Bodney, the boundary of which ran along the River Wissey, immediately to the west. The modern village of Hilborough is situated on higher ground (about 27m OD) to the west of the small River Wissey, about 8.5km south of Swaffham and 12km north of the Norfolk/Suffolk border, on the A1065. Bodney is now a small hamlet with only the church, half a dozen houses and a farm.

The moated site lies a little over 1km to the south-east of Hilborough, 600m south of the church and 500m downstream from Hilborough Mill, now a private house. Situated on the opposite (eastern) side of the river it is not readily accessible from Hilborough and is more easily approached from Bodney 900m to the south.

## Topography and geology

The underlying geology of the area is Cretaceous chalk overlain by Quaternary sand and gravel deposits and diamicton of glacial origin. River valleys have cut down

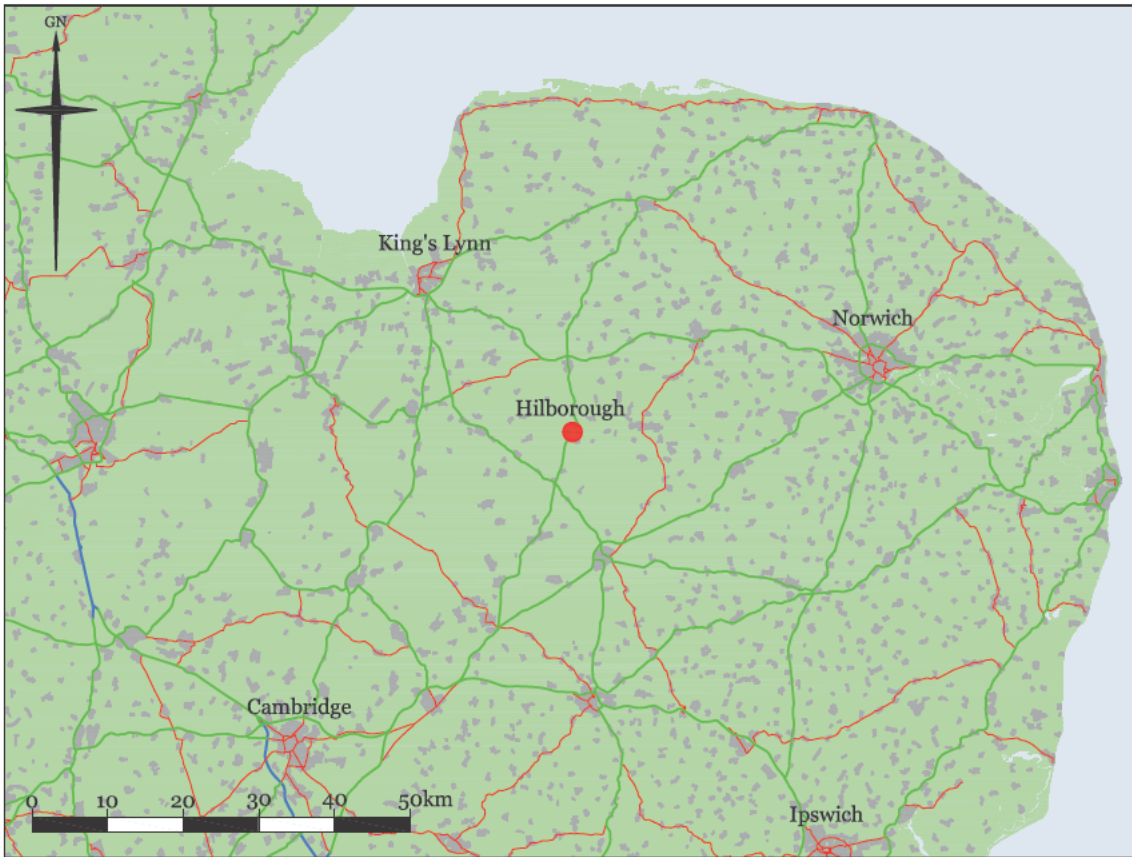


Figure 1 – The location of Hilborough

through these, leaving chalk close to the surface along the valley sides, but the valley floors are covered in alluvial deposits (BGS).

The moat lies on the eastern edge of the floodplain of the River Wissey, which runs approximately north-south, with the surface of the platform at about 20m OD and the level floodplain to the west at roughly 19m OD. To the east the ground rises fairly sharply to an elevation of 24.0m OD or so within 50m of the moat with the highest ground within the area examined lying at about 24.7m OD, about 80m to the north-east. The ground continues to rise eastwards, but more gently as it was not topographically a part of the valley of the Wissey.

To the north, a tributary of the Wissey, the Watton Brook ran in from the north-east. The confluence currently lies about 200m to the north of the moat, but Davison suggests that the Watton Brook originally continued to the east of the Wissey, which presumably occupied a channel in the floodplain to the west, the two only meeting about 200m to the south of the moat, where the Wissey presently doglegs eastwards, and that they may originally have met even further downstream, the Wissey currently occupying the former channel of the Watton Brook (Davison 1994, 63).

## Designations

This site is currently undesignated.

## Previous research

Only Historic England's National Record for the Historic Environment (NRHE) and readily available secondary sources were consulted in the preparation of this report.

The site is currently summarised in the NRHE as 'homestead moat of possible medieval date survives as an earthwork' (NRHE HOB UID: 3831982, Norfolk SMR Number: 5042). More detailed information is then given, based upon field investigator's comments in January 1976:

A dry homestead moat in permanent pasture. Average overall dimensions north - south 82.0m, east - west 52.0m, the arms have a max depth of 1.4m and max width of 14.0m; an original causeway is evident in the eastern arm. The moat was originally spring fed - there is an outflow at the south-west corner. The island is grassed, rectangular depressions at the north end probably indicate the site of a former building although there is no surface evidence of foundations. Surveyed at 1:2500.

The site was also photographed during English Heritage aerial reconnaissance in 2010/11 (oblique AP reference number NMR 26670\_030-041 16-APR-2010) and is described as being:

visible as an earthwork within pasture on aerial photographs of 2010. Dry channels in the area around the moat are probably part of a water management system connected with it. (NRHE entry)

In 1987-8, following their acquisition of the area, the MOD funded an archaeological survey of the area. Although based upon fieldwalking this was followed up with documentary research and some earthwork survey, which included the moated site (Davison, 1994, 57, 63-5, Fig. 3). It was described as consisting of:

a moated platform forming an irregular quadrilateral; the northern and eastern limbs of the moat are quite deeply indented. The western arm is a former channel of the Watton Brook which fed the moat. It leads away as a drain joining the Wissey where it has taken a sharp bend eastwards to occupy the former channel of the Watton Brook. There are raised features at either end of the platform. The northern one extends the width of the platform, giving it a stepped appearance; the southern one is less distinct. On both, brick fragments and sherds of medieval pottery have been found. Entry to the platform appears to have been by a causeway near the south-east corner. Recent dumping of flints from the fields has given rise to an apparent western entrance.

Associated earthworks to the east consist of a sinuous hollow way, possibly a street leading from the main village, but with no obvious northern destination. A shorter hollow way extends towards the moat and may be the remains for an approach way. A linear depression further south may be the remnant of a lane leading to the stream. To the north of it is a short enclosed depression of unknown significance. There are also parts of two probable

enclosures, their joint southern bank rises eastwards in marked fashion. There are signs of a platform north of the eastern enclosure. The earthworks seem to end abruptly at an old hedge bank which truncates them and is, itself, of some age. Pollard trees in the pasture (called 'Oak Yards' on the Tithe map) within which the earthworks lie are of notable size and age. There is no firm evidence as to the identity of the moated site which is probably that of one of the three manors of Bodney; the neighbouring earthworks appear to be a northward extension of the deserted village.

Settlement in the area of Bodney is likely to be early. To the west of Bodney church and a little to the north of the road, but 'clear of the edge of the rivers' flood plain' the late 1980s work by Davison mentioned above (1994), revealed an area of finds recovered by fieldwalking, referred to as Site 29. This included 4 sherds of middle Anglo-Saxon (about AD 650-850) Ipswich Ware, supplementing earlier finds of 2 similar sherds from the same area and an Ipswich Ware base found to the south of the road. Together these were taken to suggest that 'the core of Bodney village must have its origins in this period, at the latest' (Davison 1994, 61). Very few finds of this period were noted anywhere else in the study area. This area, both north and south of the road, apparently also produced finds of the later Anglo-Saxon period (about AD 850-1150), mainly Thetford-type Ware plus others including some evidence for a 'wattle and daub' building. The same area also produced a significant scatter of medieval and post medieval sherds though so this building is as likely to be medieval as Anglo-Saxon. A certain amount of medieval material was recovered from elsewhere in Bodney, but seem to have formed an 'aura' around the concentration near the church, both in the late Anglo-Saxon and medieval periods (Davison 1994, 63). Such an 'aura' is usually taken to indicate manuring of arable fields close to settlement. The area of the moat was not mentioned in this context so may have lain beyond the arable core.

The parish church of St Mary (Listed Grade II\*, UDS UID: 1077285) is recorded in the NRHE as having probable 12th century origins (though the original list entry records it as 'mainly 14th century') and having been lightly restored in the 19th century. It is a relatively small building constructed of flint with ashlar and some brick dressings and a pantile roof over an aisleless nave and chancel, with a vestry to the north (NGR: TL 83118 98836, HOB UID: 1580182). A fragment of a late Anglo-Saxon grave-cover showing four-cord plaits, was visible in the north-east buttress of the chancel (NGR: TL 8311 9884, HOB UID: 383238, Norfolk SMR 5022). This suggests that the church's origins are at least a century earlier than given above. It also occupies an extremely prominent position on a short spur projecting into the valley from the east with steep scarps on three sides, which may have been enhanced. Also perhaps significant is a late Anglo-Saxon iron spearhead found on the surface of a ploughed field, less than 100m north-west of the church (TL 8306 9890, HOB UID: 383237 Norfolk SMR: 5021).

Given the topographic and organisational association, the presence of possible earthwork remains of a deserted medieval village at Bodney, less than 1km to the

south, might also be significant (NGR: TL 830 986, HOB UID: 383231, Norfolk SMR: 5021, 5044). They have for example been suggested by Davidson (above) as being directly related to the earthworks examined here. They are shown in part on the 1st edition OS 6 inch and 25 inch to the mile maps as 'Site of Bodney Hall', 'Moat' and 'Fishponds' and have been described more recently:

'Possible features associated with the deserted areas of the settlement of Bodney are visible as earthworks on aerial photographs. A disturbed area of ground, which may relate to village earthworks or to quarrying, is located at TL 83356 98431. A possible hollow way is located at TL 83569 98223 extends from north west to south east for a distance of approximately 325 m. These features were recorded from EH Reconnaissance aerial photographs of 2010 (NMR 26670\_045-049 16-APR-2010).

There is, however, some doubt over what exactly these remains represent and the area's characterisation as a deserted medieval village may be going beyond the evidence. In 1973 it was thought by the OS Field Investigator that an earthwork shown on earlier OS maps as a moat was a fishpond (the mapping was changed to reflect this by the time of the 1978 OS maps), and a bank suggested by some as tenement boundaries probably an avenue; 'No traces indicative of desertion were seen' (NRHE entry). Earthworks associated with the manor house and some probable garden features were felt more likely to be correctly interpreted (ibid) and if these were not settlement remains then it would seem more likely that they are the remains of the landscape around Bodney Hall and might actually be more closely contemporary with the moated site to the north. However, in the late 1980s Davison examined this area and concluded that the fishpond was in fact a moat noting that it was shown as having three arms on the tithe map, though the other conclusions are broadly supported (1994, 65-6). This work is not recorded in the NRHE.

To the north, Hilborough Mill (Listed Grade II\*) is a former watermill and miller's house built in 1819 according to the date stone, and is now a private house. The mill is built of colour-washed brick and the miller's house is of flint with brick dressings, the roofs are of slate and pantiles. The two-storey building has a long rectangular plan with the house in the westernmost bay and a single storey stable wing to the north. The mill still contained much of the machinery in the 1980s, including the cast-iron waterwheel (though the paddles are missing). (NGR: TL 82727 99932, UDS UID: 1342591, HOB UID: 871661). Also recorded was a hydraulic ram adjacent to the mill, which was still working in 1980 (HOB UID: 871662). Some of the recorded earthworks to the south may be indirectly associated with the mill.

In addition to the above, prehistoric, Romano-British and Anglo-Saxon finds have been recorded from several areas, but most are significantly earlier than the moated site and generally at some distance so are unlikely to be relevant. They include:

- TL 83 98 (HOB UID: 383239 Norfolk SMR: 5011, 5017, 5016, 5013, 5012) - axes, chisels, scrapers, borers and knives from Bodney, mostly Neolithic

- TL 8235 9945 (HOB UID: 383240, Norfolk SMR: 5024) – a worked flint recorded from the surface of a field said to be ‘covered’ with flakes; later, in the 1970s, waste flakes and burnt flints were also found in the ploughed field centred TL 8220 9945, but in no concentration
- TL 818 996, (HOB UID: 383253, Norfolk SMR: 11908) - worked flint and a lava quern fragment were found in pipe trench
- TL 82 00 (HOB UID: 357845, Norfolk SMR 2703/2705) - A Neolithic stone adze and knife, found ‘at Hilborough’; also fragments of a Bronze Age Beaker (HOB UID: 357846, Norfolk SMR 2706)
- TF 83 00 (HOB UID: 357847, Norfolk SMR: 2706) - Iron Age sherds were found south-west of the Blackwater Ford in Hilborough.
- TF 8355 0020 (HOB UID: 357840) - A Romano-British village has been recorded based upon pottery, a quern and other artefacts found in 1923, but there are no visible remains
- TL 825 999 (HOB UID: 383191, Norfolk SMR 5019) - Roman and Medieval pottery found in 1941 and a sherd of probable pagan Saxon pottery was found a few years later
- TL 83 98 (HOB UID: 383236, Norfolk SMR: 28106) - It has been noted that ‘Anglian’ (ie early Anglo-Saxon) pottery was found in Bodney before 1924, but the site is not known and the pottery is lost

The Second World War Bodney Airfield lay less than a kilometre to the east of the study area (NGR: TL 838 993, HOB UID: 1386169) and two pill boxes associated with it have been recorded nearby (NGR: TL 8331 9996, HOB UID: 1386298, Norfolk SMR 32702, Defence Estate SMR No. NOST178 and NGR: TF 83304 00029, HOB UID: 1418308, Norfolk SMR 32391, Defence Estate SMR No. NOST174)

## History

### Moated sites

Smaller moated sites, as opposed to castles, are a form of medieval settlement (or more accurately an element in the settlement pattern) characteristic of areas of dispersed settlement on heavy soils and are common in many areas, far more so in Suffolk and Essex than Norfolk (see for example Roberts and Wrathmell 2002, 57). Nevertheless, they are known in this area; there is a moat a few kilometres upstream at Great Cressingham. They were typically four sided and square or rectangular though topography played a part and a wide range of forms and sizes are known.

Most date to the 13th and early 14th centuries (Stamper 2011, 2), but examples from the mid-12th century are known and many 16th century Tudor mansions were moated (Muir 2004, 174-5). A desire for security may have been one reason for

investment in moat-digging (Stamper 2011, 2), but not all moats were defensive or even occupied by dwellings and their roles and development are likely to be complex. Practical considerations such as drainage must have been important but status appears to have been an element in their take up (Muir 2004, 174-5); 'keeping up with the Jones's'.

## Hilborough Moat

There appears to be no modern overview of the history of the area. The fullest available is that by Blomefield (1807) and whilst detailed needs to be treated with some caution. The Victoria County History for Norfolk only comprises two volumes published in 1901 and 1906 and no subsequent work has taken place (<https://www.victoriacountyhistory.ac.uk/counties/norfolk> accessed 21/3/2018). Davison (1994) however provides a useful summary and looks at the history of Hilborough and Bodney in some detail.

## Origins

At the time of Domesday Book, Hilborough was held by William de Warenne as a single large manor valued at £7 with 38 households. Whilst it is highly unlikely that the area of the moat formed a part of this it is perhaps relevant the entry mentions 8 acres of meadow and 3 mills (Brown 1984; 8,91). Bodney was tenurially more complex. Although a single manor held by Hugh de Montfort, William de Warenne and Ralph de Tosny also held land there (Brown 1984; 23,1; 8,96; 22,8). The manor appears to have been about half the size and value of Hilborough; de Montfort's holding amounted to 14 households valued at 60s, de Warenne's holding 1 household and 20s, and de Tosny's 5 households, but was not valued (note that reference to 'All together this paid 6 night's revenue to H(arold), now it pays £60 by weight' is to all the land in South Greenhoe Hundred; n22,8). In terms of the landscape de Montfort had 5 acres of meadow and 1¼ mills, de Warenne 2 acres of meadow and ¼ of a mill, and de Tosny 1 mill. Note that the references to ¼ mills are to a shared interest in a mill; it is not clear if the two ¼ interests mentioned amount to a half share in a single mill or to two separate mills. The six or seven mills listed in Hilborough and Bodney must all have been watermills and much of the 15 acres of meadow was probably river meadow. Given that the only significant watercourse is the Wissey it is highly likely that some of these mills and meadows were in the vicinity of the moat.

It seems likely that the moat lay on that land held at this time by William de Warenne. The church was typically associated with the caput of the estate and the fieldwalking evidence (above) strongly suggests that this area was the core of the estate, probably the location of de Montfort's seat (Davison 1994, 71). Blomefield (1807) suggests that the de Tony lands were to the east extending into Little Cressingham. This leaves the moat on the land held by William de Warrenne at Domesday.

This holding seems to have been largely unaffected by the Conquest apart from the change of lord; there is limited information, but it is described as always having 1 villain, always 1 plough and a value 'then' of 20s 'now the same'. This is in contrast

to the main holding which saw a marked decline; a halving of the population where given, a quarter the number of ploughs, a similar reduction in livestock, and the value down from 100s to 60s. This also seems to suggest that it may have been a distinct entity with a separate economic identity, rather than land within the main holding.

Hilborough appears to have remained as a single unit throughout the medieval period (Davison 1994, 70). Bodney appears to have remained as three separate holdings for some time; the de Montfort holding descended to the Oldhall or Holdall family in the 14th century, the de Tosney holding was held by Roger de Tony in 1264 (Davison 1994, 71). As a minor part of the manor little appears to have been recorded of the history of the de Warrenne holding; Blomefield (1807) only records that it remained separate until the decades either side of 1400:

That part of this township held by William Earl Warren at the survey, continued under the said fee for several ages, and was held about the reign of Richard II and Henry IV of Thomas Holdich, Esq. and his parceners [coheirs].

The lesser holdings were apparently 'united (by purchase or otherwise) to the capital lordship about the reign of **Henry V** [1413-22]' (Blomefield 1807), and in 1453 Thetford Priory obtained the manor. At the dissolution it reverted to the Crown and was then given to the **Duke** of Norfolk who held it in 1546 when it passed to the Hogan family. A few years later, in 1553, it passed to the Downes family who held it until 1615 when it was sold to Cressy Tasburgh and descended to Francis Tasburgh 'the present lord' (Blomefield 1807). At this time, in the first years of the 19th century, Bodney was described as:

a depopulated village, and consists only of a manor-house, a farm-house adjoining, and a poor rectory-house like a cottage, at the east end of the churchyard (Blomefield 1807)

Half a century later the parish was summarised thus:

BODNEY (St. Mary), a parish, in the union of Swaffham, hundred of South Greenhoe, W. division of the county of Norfolk, 9 miles (N. N. E.) from Brandon; containing 98 inhabitants. This parish comprises 2605a 18p, of which 1384 acres are arable, 1177 meadow and pasture, and 43 woodland and plantations; much ground is also rabbit-warren. The ancient Hall was for some time the retreat of the nuns of Montargis, of whom Eloise Adelaide de Bourbon, daughter of the Prince de Condé, assumed the veil here in 1805, and is interred at this place. The house has been rebuilt in a handsome style. The living is a discharged rectory, united to that of Great Cressingham, valued in the king's books at £6. 7. 3½.: the tithes have been commuted for £195. The church is a plain thatched building, with an ornamented window, and a wooden belfry. (Lewis 1848)

## Desertion

The period during which the depopulation of Bodney took place provides a context for the desertion of the moated site. Although the majority of the manors in the



vicinity were relatively poor in 1334, if their tax is any guide, most seemed to have fared fairly well over the following century. 'When [tax] reductions for hardship were allowed in 1449 ... only Bodney, allowed a reduction of 17.5%, was close to the median' for the hundred, the other manors saw little or no reduction. Such a decline during a century of plague, social unrest and possibly famine is in some ways unsurprising, but Bodney appears to have seen an economic downturn earlier than the other manors in the area and to have remained depressed:

By 1524-25 the numbers of contributors to the payment in Bodney and Little Cressingham seem to indicate decline, while Great Cressingham and Hilborough appear to have been thriving. ... By 1581 wealth in Bodney and Little Cressingham seems to have lain in the hands of a few.' (Davison 1994, 70)

What was the cause of this continuing depression? From the later-15th and earlier 16th centuries legal documents suggest:

that sheep farming and rabbit warrens were the primary interests of [Thetford] Priory in this manor. ... It is possible that the Priory ... sought profit by increasing their flocks at the expense of tenants, [and] may have played a part in the depopulation of the village. (Davison 1994, 72)

The moat may have been abandoned when the separate holdings were united with the main manor. It is uncertain exactly when this was, but Blomefield notes that it remained separate in the reigns of Richard II (1377-99) and Henry IV (1399-1413) and that the manor was united in or about the reign of Henry V (1413-22). Given the context of economic decline noted above it may have been that the small holding simply ceased to be economically viable, and the Holdichs sold out to the Oldhall/ Holdall family.

# AERIAL PHOTOGRAPHIC SURVEY

## Features recorded and conventions

The aerial survey of Hilborough Moat is based on the interpretation of existing Environment Agency lidar (1m resolution) and vertical and oblique aerial photographs (APs) dating from 1946 to the present day, supported by a range of historical Ordnance Survey maps.

The survey encompassed an area of approximately 1.5km<sup>2</sup> centred on the moated site at Hilborough. All visible archaeological features including earthworks and structures potentially dated from the later prehistoric to mid-twentieth century were transcribed and recorded. No cropmarks were noted within the survey area.

All features were mapped in AutoCAD using Historic England mapping conventions for ditches and banks, with some larger earthworks depicted with 'T' hachures. Ridge and furrow is depicted with a single line along each furrow. A number of buildings, hangars and hard standings and the remains of defensive structures, such as pillboxes and barbed wire associated with the adjacent Second World War RAF Bodney have also been mapped.

## Description

The following refers to Figure 2. The floodplain has been shown by the enhanced line of the 20m OD contour. This is however only indicative; the river and brook flow from north to south so the floodplain falls in that direction.

The features directly associated with the moat in question, mainly the blue 'T' hachures in the centre, are discussed in the earthwork description below.

The majority of negative features plotted (shown in green on Figure 2), lie on or adjacent to the valley floor. To the south-west of Hilborough Mill is a group of these features as well as a few others shown with 'T' hachures. There appear to be two distinct types. Some are slightly broader and less regular and can be seen around the mill with a branch running off to the south-east, with two isolated examples to the south of this. The others are straighter, narrower and more uniform and mainly lay to the south of the mill. The former appear to be older and one of the second type can be seen to overlie them. Some form what may have been an enclosure or by-pass channels around the site of Hilborough Mill, but this doesn't sit well with the current mill buildings (of 1809, see above) suggesting that there may have been an earlier mill on this site. The later, straight features are not of a single phase. Some relate to existing field boundaries or are coherent enough with these to suggest former boundaries. Others sit slightly awkwardly with these and may therefore be earlier, perhaps related to meadow drainage, though probably not floated water meadows. A straight, narrow positive feature to the south-west of these is likely to be a field boundary bank. A broader, more sinuous, positive feature here appears to underlie the boundary bank; it is most likely to be an earlier boundary. What appear to be broader elevated areas, perhaps truncated in places, are indicated by 'T' hachures in this area.

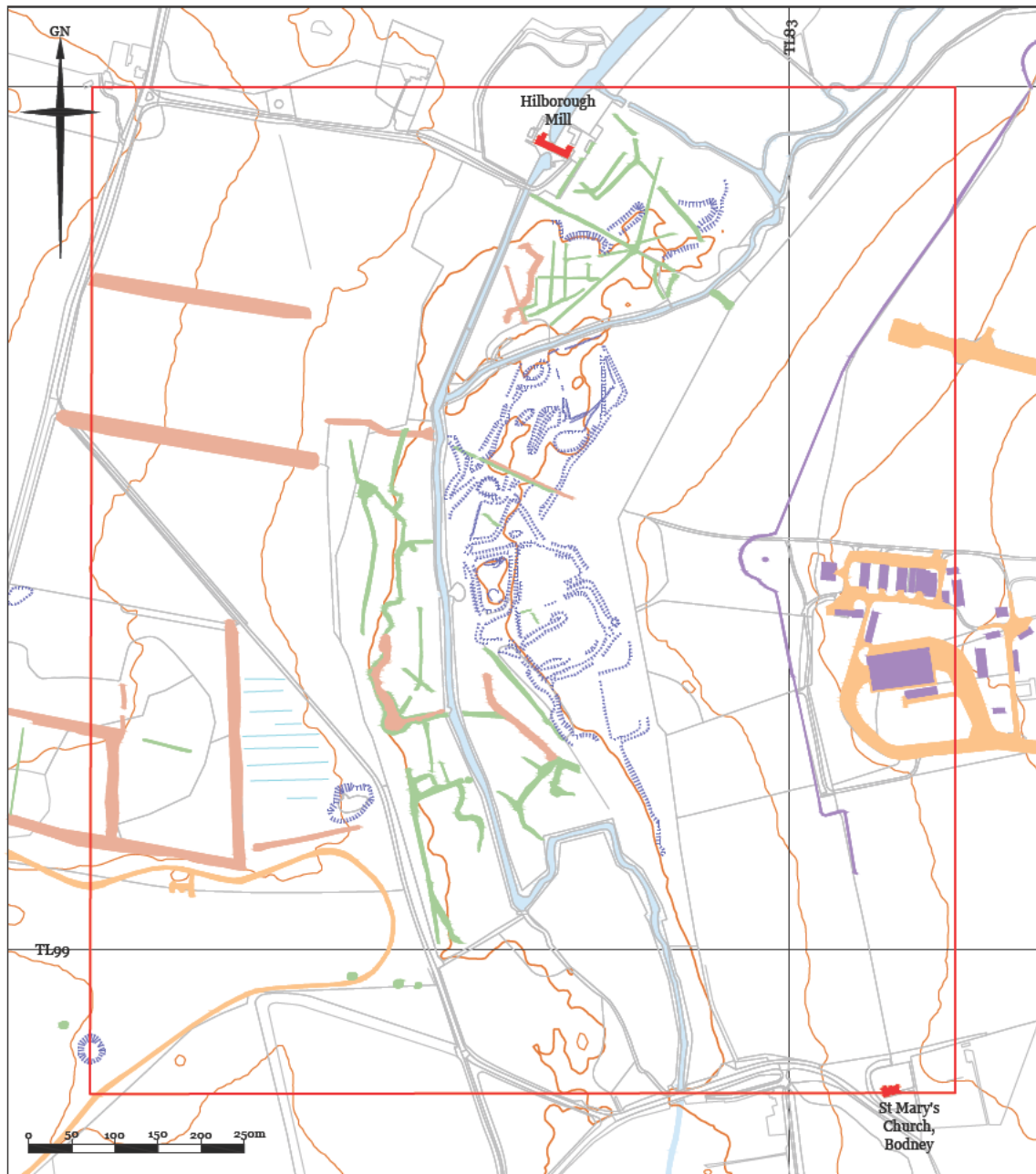


Figure 2 – The aerial photograph and lidar mapping, 5m contours (the 20m OD contour enhanced to indicate the flood plain), 1:8000 at A4. Red rectangle is the study area. Large earthwork features, principally visible on lidar, shown with blue ‘T’ hachures; negative features such as ditches in green; positive features such as banks in salmon; cyan lines indicate ridge and furrow; former structures in purple; other features in orange (Fiona Small © Historic England, Modern Ordnance Survey mapping: © Crown Copyright and database right 2018. All rights reserved. Ordnance Survey Licence number 100024900)

To the south of this area, to the west and south of the moated site, the negative features are less dense and clear stratigraphy is not visible. Again, some are broader and more irregular and others are narrower and straighter suggesting different phases of activity. Most are likely to be either field boundaries, drainage or both, with the more sinuous examples perhaps palaeo-channels. There are few coherent

features, an exception is a small square enclosure about 20m across to the SSW of the moat.

There are a few positive features in this area such as an 'L' shaped feature to the south-west of the moat flanked by ditches and a linear feature to the south of the moat. Their date and function are uncertain, but they may represent tracks built up on the floodplain.

The positive east/west feature to the immediate west of the central earthworks is likely to be a track approaching the point on the river where military engineers have practiced temporary bridging methods. This relates to the plan for a new road in part motivating this report.

The valley narrows to the south and no features are recorded here. Perhaps the narrower floodplain made it impractical to farm.

Several broad, straight positive features have been plotted to the west of the river valley. These are all likely to be the remains of ploughed out post-medieval field boundaries. Several are shown on first edition OS maps. Some much slighter features to the WSW (both positive and negative) are of uncertain origin.

Several large hollows are shown to the west of the river valley with blue 'T' hachures (and some smaller hollows shown in green). The two largest of these are shown on the first edition OS maps as unlabelled pits. They are probably quarries for local use, perhaps extracting chalk given the underlying geology. It seems likely that the others had a similar origin, though given the military activity in the area and the proximity of the airfield, other more explosive origins cannot be ruled out.

Also in this area a block of ridge and furrow has been recorded. This very probably marks the truncated remains of medieval open-field agriculture.

The area to the east of the river valley is featureless apart from evidence of the Second World War Bodney Airfield. These comprise numerous buildings shown in purple and roadways shown in orange. Some are large enough to have been hangers and taxi-ways. The purple line to the west of these marks the line of the barbed wire enclosing fence, which bulges westward around a pill box, also shown. The latter survives.

A sinuous roadway to the south-west is of uncertain function, but is probably also military.

# EARTHWORK SURVEY

## Methodology

The site was largely open, apart from a few large veteran trees, and it was possible to survey with Global Navigation Satellite System (GNSS) equipment. Detail was surveyed directly using Trimble R8 survey grade GNSS receivers working in Real Time Kinematic mode with differential data supplied by another R8 receiver configured as an on-site base station. The position of the base station had previously been adjusted to the National Grid Transformation OSTN15 via the Trimble VRS Now Network RTK delivery service. This uses the Ordnance Survey's GNSS correction network (OSNet) and gives a stated horizontal accuracy of +/- 0.010-0.015m per point, vertical accuracy being about half as precise. The survey data was downloaded into proprietary software to process the field codes and the data transferred into AutoCAD software for editing.

## Description

The following describes the main features surveyed in approximate chronological order. Figures in square brackets refer to Figure 3. It is not exhaustive and various features such as modern paths and tracks, small mounds, tree boles, and animal poaching have been omitted.

The moat [1] lay towards the south of the area examined at the junction between the floodplain and the rising ground to the east (Figure 4). The platform was defined by clear arms visible to the north, east and south where the earthworks cut into the rising ground. These were up to about 14m wide in the south though 11-12m was more typical elsewhere. The east arm was the deepest at about 1.5m and best defined, as the adjacent ground was highest here, but had probably silted up and originally been deeper. No western arm was visible at the time of survey due to flooding. Davison (1994) records this arm which he suggests was a former channel of the Watton Brook and traces of such a channel were also noted on the lidar. Visual examination of this area suggested that some truncation of the moat island had taken place though it was unclear how extensive this was. A channel continuing to the south from the south-west corner of the moat was recorded by Davison, from the lidar data, and shown on the 1st edition OS maps. To the south, the steep scarp surveyed dropping into this from the higher ground to the east demonstrated the erosional potential of this stream.

The surviving platform formed an irregular trapezium measuring up to 55m north/south and 37m east/west. The level of the island had been raised using material from the excavation of the arms so that it stood about 1m above the floor of the floodplain, though lower than the ground to the east. A raised platform occupied the full width of the north end of the island, apart from a strip 4-5m wide beside the northern arm. Davison (1994) records medieval brick and pottery from this area, strongly suggesting that this was a building platform, perhaps the main range given its size. To the south a roughly square mound, about 20m by 18m, also produced brick and pottery (*ibid*) and probably marked the site of a second building.

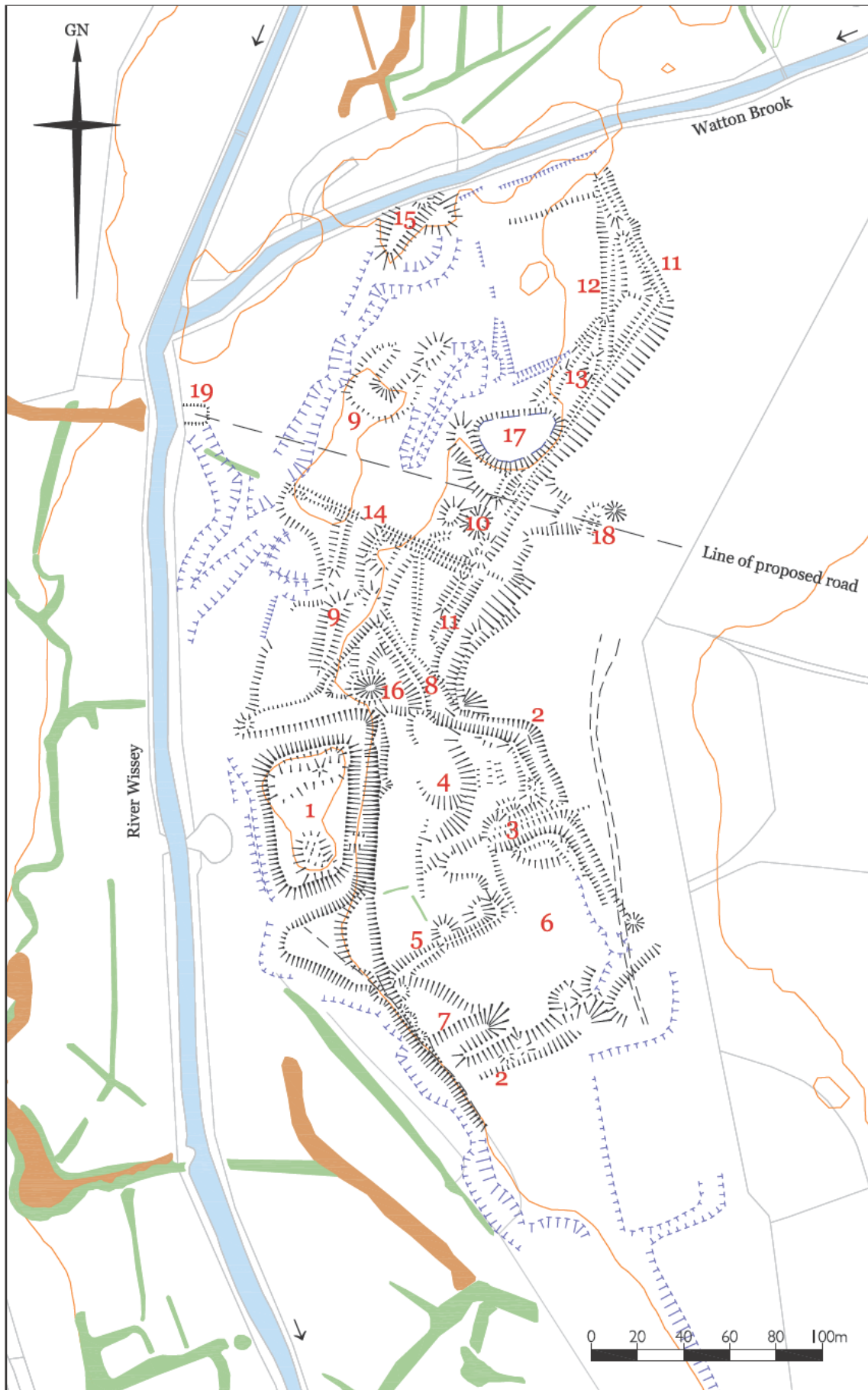


Figure 3 (opposite) –Earthworks of and associated with Hilborough Moat, 1:2500 at A4, surveyed earthworks shown with black hachures, other features derived from AP/lidar mapping, see Figure 2 (Magnus Alexander © Historic England, Modern Ordnance Survey mapping: © Crown Copyright and database right 2018. All rights reserved. Ordnance Survey Licence number 100024900)

A causeway across the south end of the eastern arm of the moat has been described as the original entrance. This actually appears to be secondary, but could have replaced an earlier wooden bridge during the lifetime of the moat. There was no obvious approach to this.

From about 20m to the east of the north-east corner of the moat, a substantial gully [2], generally about 8-10m wide, ran up the valley side for 40m before turning SSE to run along the natural slope. The line of the south side of the northern arm of this gully was continued by a scarp that ran into the north-east corner of the moat, after being interrupted for a short distance by a low mound associated with one of the large, ancient pollards seen across the area. The north side of the gully appears to have been truncated by gully [8] running away downslope to the north-west.

The low, flat-topped bank to the north of the moat might also be associated as scarps to the east seem to pick up the line of the gully, though this is less certain due to hollow [14].



Figure 4 – The moat at the time of survey, viewed from the north-east (Magnus Alexander © Historic England)

About 45m from the north-east corner the gully was interrupted by a second gully and a spur/ridge (see [3]).

Beyond this the line of the original gully continued SSE for another 50m before petering out in an area of amorphous features that it was not possible to make sense of on the ground. The lidar evidence suggested the gully may have continued for another 20m and then turned south-west running into another area of surveyed earthworks. Although confused by later activity, a broad gully seemed to continue this feature (a suggestion supported by the lidar). This ran for over 60m before being truncated by the steep, eroded slope down to the floodplain.

These gullies would appear to define a polygonal enclosure apparently associated with the moat measuring up to 150m north/south by 95m east/west. Within this the earthworks were rather different in nature to the surrounding area. It should be emphasised that the earthworks along the southern side of this proposed enclosure were however rather disrupted and somewhat different in nature to those to the north and east, in particular the southern gully was broader and without an obvious internal bank, so there may be some conflation of features. It is probably more likely though that it had been disturbed by traffic along the valley, for which there was considerable evidence, which would have had less impact on parallel features also running along the valley, than on those the tracks would have crossed at right angles. Davison described the latter (with [8]) as 'a sinuous hollow way, possibly a street leading from the main village [Bodney], but with no obvious northern destination' (1994, 65). This is probably incorrect as, apart from the lack of any clear origin to the south or destination to the north, it doesn't acknowledge the likely continuation of the northern arm as far as the moat, and includes gully [8] which is very probably later.

A counterscarp defining a bank ran along the western side of the eastern arm of the gully. There was the suggestion of the bank also turning to run along the northern arm, but this was somewhat broken. A bank around the south-east corner and along the eastern half of the southern arm was recorded from lidar data, but was not obvious on the ground.

As noted above, gully [2] was interrupted by a broader, 13m wide, gully running WSW from it at 90° [3]. This may have been contemporary as to the south the internal bank of [2] curved inward to run alongside this feature. The north side of the gully was rather disturbed; a vegetation hollow at the north corner with [2] interrupted the internal bank west of it, and a notable step in the northern gully scarp seemed to push its line to the south with some material perhaps thrown up to the north. The south scarp was much more uniform, though may have been pushed slightly northwards by one of the very large ancient pollards seen across the area. The western end of the gully appeared to have been eroded by traffic running across it; to the south a west facing scarp suggested a track line, the height of the southern scarp dropped markedly where the two features met, and a shallow scarp to the north was also suggestive of erosion.

To the WSW of the end of the gully was an area of slight, raised earthworks. These were rather amorphous, but it is possible they marked the location of a building (or



buildings) of some sort. If so, then the gully might mark an entrance to the polygonal enclosure.

A faint ridge ran along the centre of the gully, though on a slightly different alignment to it, steadily increasing in size towards the ENE and projecting a short distance beyond the line of [2], though it was very faint here. This would appear to be secondary to the gully, and may represent a later field boundary. To the west, a vague north-facing scarp appeared to continue the line of this feature.

The area to the north, and due east of the moat was largely featureless apart from a broad, rather amorphous depression [4], possibly indicative of erosion associated with use of the area as a yard or similar. SSE of this was an area of similarly amorphous, but slightly raised earthworks. If the interpretation of the former is correct then it is possible that there were associated buildings here though neither was certain.

South of these features was a well-defined bank [5] running WSW to ENE with a northward return at the east end. It extended from the steep scarp falling down to the floodplain at its west end, for about 55m. About halfway along a short, spread spur projected northwards. This possibly aligned with a west-facing scarp to the north and a faint cropmark was recorded on a similar line to the immediate west (with another similar at right angles to it) and it may be that this was a truncated bank. The main bank to the west of this spur was much lower and broader and may also have been eroded by later activity. Within the angle of the northward return was a fairly well defined raised square area, possibly a small building platform. Taken together these features are suggestive of small service yards or perhaps a productive garden associated with the moat and the well-defined nature of some elements implies a later date than those described above.

To the east was a second depression [6], even broader and more open than [4] and not surveyed. Although possibly natural, a dense scatter of molehills across it, not seen in the surroundings, suggested a difference in underlying deposits. Perhaps this area was a paddock or similar.

No clear evidence for associated building platforms was seen. Within the southern corner between [2] and [3] where there was a raised level area defined by a curving, south facing scarp, but this was uncertain and may have been related to the ancient tree here. The earthworks to the south-east may have been related, but were incoherent.

A slight, but well-defined scarp ran away to the NNW towards [3] suggestive of past traffic and a gully to the south also seemed indicative of erosion. Perhaps a later track crossed the whole area.

To the immediate north of the gully thought to form the southern arm of the polygonal enclosure, was a short broad gully [7] with a well-defined eastern terminus truncated to the west by the steep eroded scarp down to the floodplain. This appeared to be on the same orientation as [2] with a well-defined ridge between

them, but this may be due to conflation; both Davison and the lidar evidence suggest that the features were not related being on slightly differing alignments with a less regular ridge between them. The purpose and date of this feature is unknown.

A faint oblique scarp north of this appeared to align with a break in [2] where a later track crossed it. A hollow at the north-west end of this appeared to be the result of poaching perhaps as livestock broke down the steep scarp to the west in order to access the stream here.

To the north of the moat and possible polygonal enclosure were a number of mainly linear features some of which appeared to be on common orientations. It is not necessary to describe all of these (other than those mentioned below); suffice it to say that most appeared to be post-medieval and most were probably agricultural, drainage or both.

As noted above, a gully [8] ran north-west from the northern arm of the possible polygonal enclosure. To the north-west it cut a scarp running obliquely across its line (south-west/north-east) that defined the edge of the floodplain. Note that a triangular area identified by Davison (1994, fig. 3) is a conflation of these features. This seemed to cut gully [2] and had probably truncated its northern scarp. A bank ran along its south-west side, but this did not appear to overlie the cross scarp to the north-west. Where the gully and bank met [2] was a deep hollow exaggerated by the bank to the west which was more substantial in this area than to the north-west.

In the floodplain north of the moat was a low area of slightly higher ground, probably a natural island. This was generally featureless though its margins appeared to have been slightly sculpted in places, probably mainly by natural erosion as several palaeo-channels were recorded from lidar. On the north end of this island was a 'U' shaped platform [9] defined to the south-west and north-east by straight, clear scarps with a definite corner between them. Although the other scarps were slightly less regular, and the south-east corner seems to have been eroded, the overall impression was of an angular feature strongly suggestive of a building platform around three sides of a low, rectangular area, perhaps a yard. An oval mound to the north-east may have been related, but this was uncertain.

To the south, a low bank and spur of ground extended this island to the south. South of a break, possibly cut to aid drainage, a second broad, low bank may have picked up its line. It is possible that this was a causeway constructed to allow access to the island from higher ground in the area of the moat, and suggests a relationship between the two.

To the east was a low, flat bottomed, sub-rectangular depression [10], about 12m by 10m, with a slightly smaller, flat-topped, sub-square mound on the same orientation to its immediate north-west. Immediately to the north of both of these features was another larger, flat-topped mound that also appeared to be rectangular (visible to the left in Figure 5). This may have measured about 20m by 30m, but as it was truncated to the north and merged with another similar though more rounded mound to the north-west this was uncertain. This may mark the site of a group

of buildings around a yard such as a farmstead or stable/barn complex. Directly to the east a scarp ran obliquely down the natural rise of the ground towards this area. This indicated a track approaching this area and supporting the suggestion that this represents an agricultural complex of some sort. It is uncertain if the above mentioned oval mound adjoining to the north of this complex was directly related or not, though as it was also flat-topped at the same level it may also be a building platform related to the complex. To the south were some small rectangular platforms overlying gully [11], but these may well have been unrelated.

A straight gully [11] a few metres wide ran along the ESE side of the earthworks surveyed for almost 180m. To the ESE a steepening of the natural fall was recorded indicating that it was slightly cut into the rising ground. To the WNW was a low, intermittent bank again several metres wide, but only about 0.30m high at most. This feature ran beneath boundary [14] so pre-dated this and was interrupted for about 20m by some small platforms perhaps associated with possible building complex [10] though this was less certain. At its north end it turned to run to the NNW and although better defined here there was no indication that this was a separate feature. The function of this feature is uncertain. It may have been a small track or a field boundary, but could have been a water management feature; it had



Figure 5 – The area to the north of the moat at the time of survey from the south-east a little off the valley floor; [10] lies to the left foreground, [15] in the middle distance slightly to the right of centre, [17] in the lower centre, and [11] runs across the foreground in front of this (Magnus Alexander © Historic England)

a slight, but consistent fall from about 21.2m in the SSW to about 20.2m OD in the NNE, and though this runs rather counter to the natural lie of the land it may have been intended to carry hill-wash away from the area of [9] and [10] – running off to the north is probably the easiest way to achieve this.

About halfway along the northern section, a later track broke through this and [13]. Although this could be traced for a short distance to east and west it was not obvious where it came from or went to though it was probably just a modern track following the valley bottom, used in dry conditions.

Immediately to the north-west of the northern part of [11] was a narrow, raised level area [12] defined by a short, but clear scarp running parallel to it, with a slighter eastward return to the north. This became rather less well defined to the south-west where a low ridge ran slightly away from it towards [10], but it was truncated by [17] so no relationship was visible. It was cut by gully [13] and a mound to the immediate west could have been upcast from this.

A gully [13] cutting off the north-eastern corner of [11] was of uncertain function, but as it cut into [11] it was probably related so drainage seems most likely.

A straight bank [14] with a clear ditch to the south and suggestions of a ditch to the north ran across the area to the north of the moat, from the valley side ENE for 110m. It cut through or ran over all other features surveyed along its length, apart from a break about halfway along where a broad channel interrupted it. A negative cropmark extended the line of this feature a further 30m where it crossed slightly higher ground between two palaeo-channels identified from lidar. This was clearly a late feature and probably marked the line of a field boundary; trees shown on this line shown on the 1st edition OS maps and some surviving thorns suggest a ditched hedgerow. This would be typical of early modern enclosure.

On the floodplain, in the north of the area examined was a relatively substantial spur of slightly higher ground [15] running south-west from the Watton Brook. A lower semi-circular platform lay against the south-east side of this spur. These were completely isolated from the other earthworks surveyed and had no stratigraphic relationships with other features. Neither was well defined and did not appear to be angular enough to immediately suggest a building platform however contours suggest the higher ground extended to the north of the brook, and early editions of OS maps show a small channel curving north away from this area immediately upstream, re-joining the brook about 70m downstream. This channel is curvilinear and looks more natural than the straight surviving section which might be a mill race and the elevated area just possibly a former mill site.

A substantial oval hollow [16], measuring almost 14m along its longest axis, with banks to north and south and a spread of material falling away to its west, lay immediately to the north of the north-east corner of the moat. This appeared to overlie surrounding features and is unlikely to be contemporary with the moat, but otherwise its origins are unknown. It is however too large to be a tree bole and looks to have been excavated for some reason.

A large, sub-oval depression [17] in the north of the survey area appeared to form a semi-permanent pool, though it does not appear on any mapping. The origins of this were uncertain, but it cut the surrounding features so must be later.

A relatively discrete feature [18] comprising an oval gully with visible bank outside this on the downhill (west and north) sides. This appeared to be modern and was probably the result of erosion around a livestock feeder of some kind. Several similar features appear in the lidar data across the area around the end of the track running in from the east. An adjacent hollow was probably a large tree bole.

A raised square platform [19] immediately adjacent to the river was a foundation pad created to support temporary bridging of the river during military training exercises (pers comm Piers Chantry, MOD). It is planned to permanently bridge the river at this point as part of the intended works. This may necessitate deeper foundations.

## CONCLUSIONS

Although the moated site itself is well known, and the extent of the moat has been defined since the 19th century, its wider associations have not been examined in detail. Davison's work was valuable and identified several associated features, but others have been missed or excluded and some interpretations are probably incorrect. Both the AP and lidar mapping, and earthwork survey have demonstrated that the moat sits within a more complex and extensive landscape than has previously been appreciated.

This was clearly a medieval 'homestead' moat; the moated platform was occupied by buildings, probably of some status. There also appears to have been a large polygonal enclosure on the valley slope to the east and south that was probably contemporary with the moat. This has not been recognised before. Enclosures associated with moats are reasonably common as the moat itself provided a restricted site that was frequently outgrown, if not always too small to house all the necessary ancillary buildings. This enclosure probably contained yards and paddocks with associated buildings such as stables, barns and perhaps servants' or visitors' quarters. There was also evidence for multiple phases of use, with later subdivisions suggesting smaller yards or garden compartments, productive or otherwise.

As noted above moated sites generally originated in the century after about AD 1150 and there seems no reason to think that this example was in any way unusual in this respect. The moat was probably the caput of one of the subsidiary holdings within the manor of Bodney, most likely that held at Domesday by William de Warenne, and circumstantial evidence suggests that it may have been a distinct economic unit with a separate course of development to the rest of Bodney during most of the medieval period. As a lesser holding it is poorly documented, but remaining separate until about 1400. The manor was probably united soon after this and it seems likely that this could be the approximate date of the desertion of the moat. Bodney appears to have been in decline for some time by this point however, and the re-unification of the manor may have been a consequence of decline and desertion rather than a cause of it, with desertion taking place earlier. It is also possible that the moat remained occupied, but with a drop in status; from manor to outlying farm or just a field barn with stock management yards.

The area to the north was less certainly associated with the moat and most features appeared to be agricultural, related to drainage or both, and were probably later. Even here though there were at least three possible sites of buildings and/or building complexes. Although these were not necessarily related to the moated site, they are of interest in their own right, however, references to six or seven mills in Domesday Book, all of which must have lain along a relatively restricted length of the River Wissey and Watton Brook, does suggest that some or all of the proposed building locations may be early.

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