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*community
archaeology*

Keesbury Manor Cawood North Yorkshire



Geophysical Survey

April 2015

Undertaken by Jon Kenny – community archaeology
and
Volunteers from the Cawood Castle Garth Group



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The National Lottery[®]
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Non Technical Summary

A geophysical survey was carried out on Keesbury Manor site in Cawood on behalf of the Cawood Castle Garth Group as part of their Keesbury Manor Heritage Project, a project supported by the Heritage Lottery Fund. The survey was undertaken by a volunteer team under the direction of Dr Jon Kenny MCIfA over a number of days in March and April 2015.

A number of anomalies were identified, some of which were extant features such as the moat around the probable site of the manor house, ponds and ditches and ridge and furrow. Other high and low resistance anomalies have been identified that are not visible in the ground that may be of significance. More water management is evident in some of the low resistance features. Perhaps more significant are some of the high resistance anomalies visible on the platform surrounded by the moat. Faint linear anomalies and points might tentatively suggest beam slots and post pads. These features suggest a rectangular building, a set of smaller structures and a smaller rectangular feature associated with the possible house. The latter remained as an extant brick built structure until the 20th century and is recorded on an old photograph.

It is considered that only evaluative excavation will confirm or otherwise the tentative conclusions drawn in this report. If the preservation of features suggested by the geophysical survey is confirmed Keesbury Manor will be an important example of a small manorial complex.

1. Introduction

- 1.1 Jon Kenny – community archaeology was commissioned by Margaret Brearley and the Cawood Castle Garth Group. His remit was to support community archaeological activity to investigate the moated site of Keesbury, a plot of land within the village of Cawood owned by Mrs Joyce Payne. One of the activities identified by the project was geophysical survey across the field to identify archaeological features on the platform within the moat and in the surrounding area. Features were to some extent suggested by extant ditches and banks but other evidence was to be sought on the platform in particular.
- 1.2 Keesbury is an open field almost entirely enclosed by domestic houses. The property is owned by Mrs Joyce Payne who resides in one of the adjacent properties. The site is a Scheduled Ancient Monument (Monument No. 20540). The field has about 60% of an enclosing moat visible on the north westerly portion, water courses and a shallow pond on the south and east sides. To the south and west is ridge and furrow.

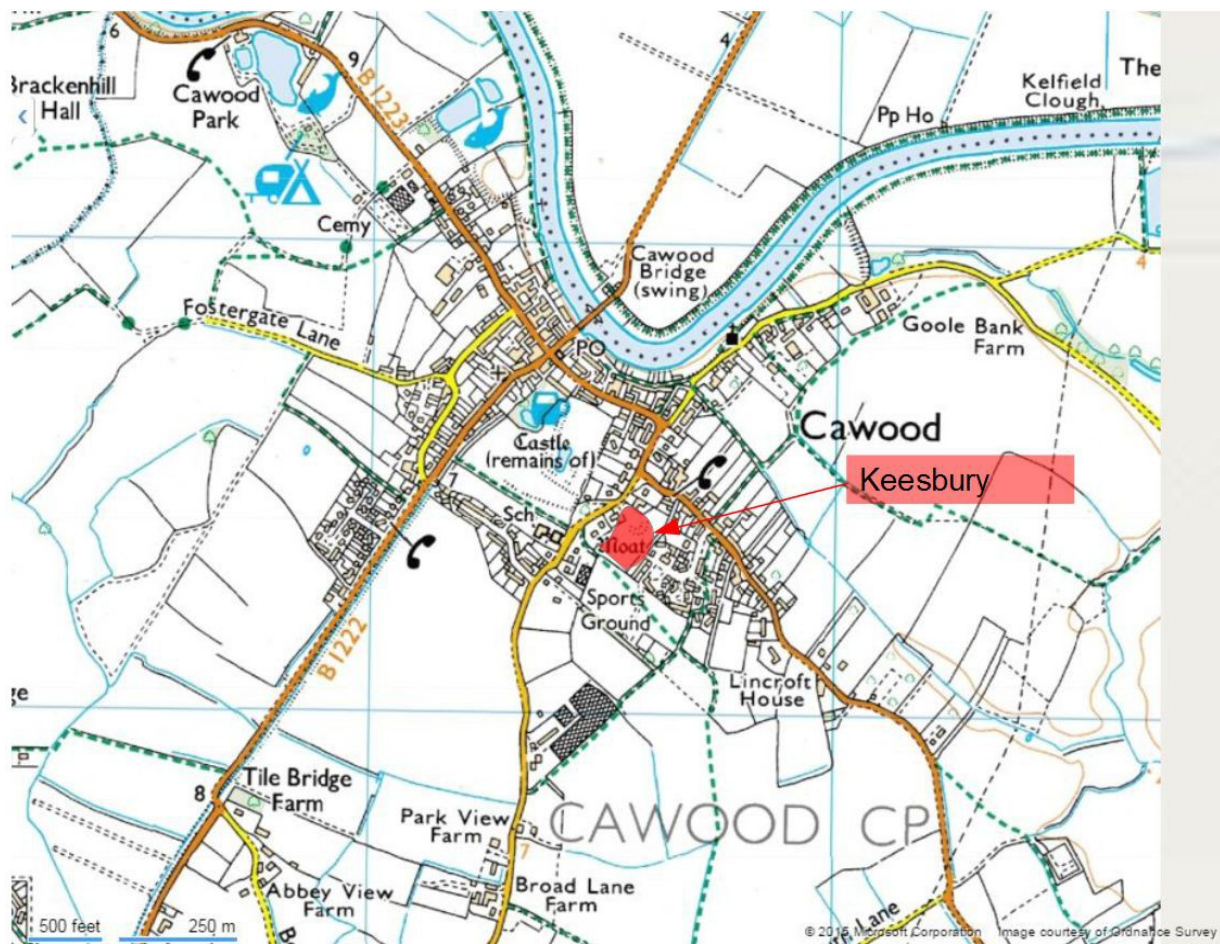


Figure 1: Map of Cawood showing location of Keesbury (in red)

- 1.3 The geology at Cawood is made up of drift deposits underlain by Bunter Sandstone. The drift deposits are a combination of sands and clays sometimes known as the 25 foot drift of the Vale of York. The soils are best described under the Wigton Moor (WW 2232) classification in the Cranfield University Soils Guide 2015. Seasonally waterlogged soils affected by a shallow fluctuating groundwater-table. They are developed mainly within or over permeable material and have prominently mottled or greyish coloured horizons within 40 cm depth, most occupy low-lying sites.

2. Archaeological and Historical Background

- 2.1 Keesbury Moated Manor site includes a moat, the remains of a fish-pond and medieval ridge and furrow field system (National Monument Record 1997). The site is known locally as Keesbury or Kensbury Manor and is situated in low lying land south east of Cawood village centre.
- 2.2 Although the Archbishops of York had a residence at Cawood castle this site has been identified as the seat of the de Cawood family who held a manor here independently of the archiepiscopal estate. The moated site is thus an important feature relating to the history of the town of Cawood and its remains may be contrasted with the nearby archiepiscopal residence at Cawood Castle. (National Monument Record 1997)
- 2.3 As early as AD 975, part of Cawood was specified as not belonging to the Archbishops of York. Cawood is not mentioned in the Domesday Book but it is likely that the Cawood family had received the manor as a royal grant soon after the Norman Conquest and was certainly in their hands by 1201. The Cawood family then held the manor until 1454. There is evidence that the site was abandoned in 1390, 1403 and 1450 when it was described as worthless.
- 2.4 Although cultivated for a short period the moated island at Keesbury remains undeveloped and could retain buried remains of medieval buildings. Over the years the moat has been in-filled in places and because of the low situation the moat silts will contain environmental evidence.
- 2.5 A small structure on the platform was still standing in the 1960's (photo (See Figure 2) and plan of the building from Janet Pexton 1988 and survey by Barbara Hutton 1975). The building was of interest as part of the remarkable range of 17th century brick houses in Cawood (DW Black 1975). It is now demolished.
- 2.6 Around 6,000 moated manor sites are known in England. They consist of wide ditches, often or seasonally water-filled partly or completely enclosing one or more islands of dry ground on which stood domestic or religious buildings. In some cases the islands were used for horticulture. The majority of moated sites served as prestigious aristocratic and seigniorial residences with the provision of a moat intended as a status symbol rather than a practical military defence.



Figure 2: Two ladies stand by the brick structure on the moat platform.

Possibly the Wale sisters Adelaide and Matilda (circa 1902).

- 2.7 The peak building period for moated sites is between 1250 and 1350 but mostly in the south and east of England. They are important for the understanding of distribution of wealth and status in the countryside. Medieval moated sites often lay at the centre of a wider agricultural complex. Features associated with these sites are fish-ponds and field systems (National Monument Records 1997) as can be seen in the extant archaeology at Keesbury.
- 2.8 From the NMR monument report in 2003, the site is described as "A moated site and an adjacent area containing the remains of a fish-pond and fragment of medieval field system. There are no remains of a hall" The site is a Scheduled Monument.
- 2.9 The earliest clear reference to this manor in the ownership of the de Cawoodes is in 1201 and the descent can be traced without break until 1454. After 1495 the manor disappears from the record as a unified land holding (Blood and Taylor 1992). There is little record of Keesbury Manor history. At the Borthwick Institute, York University, there are three volumes of Court Leet records from the end of the eighteenth century until 1935 when manorial administration disappeared. At this time it was in the possession of a Mrs. Brown.

3. Aims and Methodology

- 3.1 One of the core aims of the Keesbury Manor Heritage Project is to better understand the moated site at Keesbury. This had two principal objectives:
- To evaluate and understand any evidence for structures on the moat platform.
 - To understand the moat and its platform in relation to the immediate village landscape.
- 3.2 The aim of the use of geophysical survey was to add to our understanding of the site by revealing structures and features that are not visible in the ground as extant features.
- 3.3 The geophysical survey was also an opportunity for volunteers from the local community to participate in researching their historic landscape. To achieve this the survey was carried out first as a weekend training event held in March 2015 and then five days subsequent to this.
- 3.4 Earth resistance survey was elected to survey the whole field as this can bring out some of the detail required to understand smaller features such as beam slots and post pads resulting from timber framed construction. The fluxgate gradiometer was used to survey the platform area because we hoped to find evidence for hearths in this part of the site.
- 3.5 Geophysical survey involves the use of instruments at the ground surface which are sensitive to variations in the physical properties of the underlying soil, such as its magnetism or electrical conductivity. Variations within the sample area, mapped as 'anomalies' can be interpreted in terms of their likely archaeological origin (Hey & Lacey, 2001).
- 3.6 Electrical earth resistance survey involves measuring the resistance between two mobile probes inserted into the ground, and records the resistance between them in Ohms. This is compared with two fixed remote electrodes, positioned outside the survey area as a baseline at a distance recommended by English Heritage (EH) best practice guidance (EH, 2008, 26). The baseline reading is compared with readings taken at the mobile probes to form a weighted average of higher or lower resistances. A survey image is achieved by passing the raw data through a software program which distributes the readings spatially and assigns them colour or intensity based on their value relative to the baseline.
- 3.7 Gradiometry (also known as magnetometry or magnetic gradient survey) is a passive geophysical method that detects local variation in the strength of the earth's magnetic field. These variations can be caused by a variety of natural and cultural features that alter the magnetic field emanating from the earth. The difference between the strength of the earth's magnetic field (about 30,000 to 60,000 nanoteslas [nT]) and the strength of anomalies of archaeological interest (typically 1 to 100 nT) is great, requiring a very sensitive instrument to detect (see Bevan 1998; Burks 2004b; Kvamme 2006).
- 3.8 The earth resistance survey was carried using a Geoscan RM 15-D Resistance Meter. The survey was conducted in a zigzag pattern over an area comprised of 26 whole and partial 20m x 20m grids situated on Keesbury field (see Figure 3).

The survey was also extended onto two adjacent gardens to look for the corner of the moat and any possible drainage features. Readings were taken at 0.5m intervals and 1m transects. Where readings went over range, or obstacles prevented survey, 'dummy' readings were taken.

- 3.9 The fluxgate gradiometer survey was carried out using a Geoscan FM256 instrument. The survey was carried out in a parallel pattern over an area of 2 partial 20m x 20m grids on the platform at Keesbury. (see Figure 3).
- 3.10 The results were processed using Geoplot 3.0. Despiking, interpolation and a high pass filter were used to create the survey image. Despiking removes any unusually high or low individual readings which can occur in resistivity survey due to metal objects or water. Interpolation is used to smooth the curve on the X and Y axis; this produces a clearer image by adding data points between measured points of an average value thereby artificially increasing the resolution of the survey image. The high pass filter takes into account possible variations in geomorphology by removing low frequency changes over the whole dataset (Geoplot 2004, 2).



Figure 3: Areas surveyed.

4. Results

- 4.1 The earth resistance survey revealed a number interesting anomalies, these are represented in Figure 4 and 5 as a whole and are then presented independently.

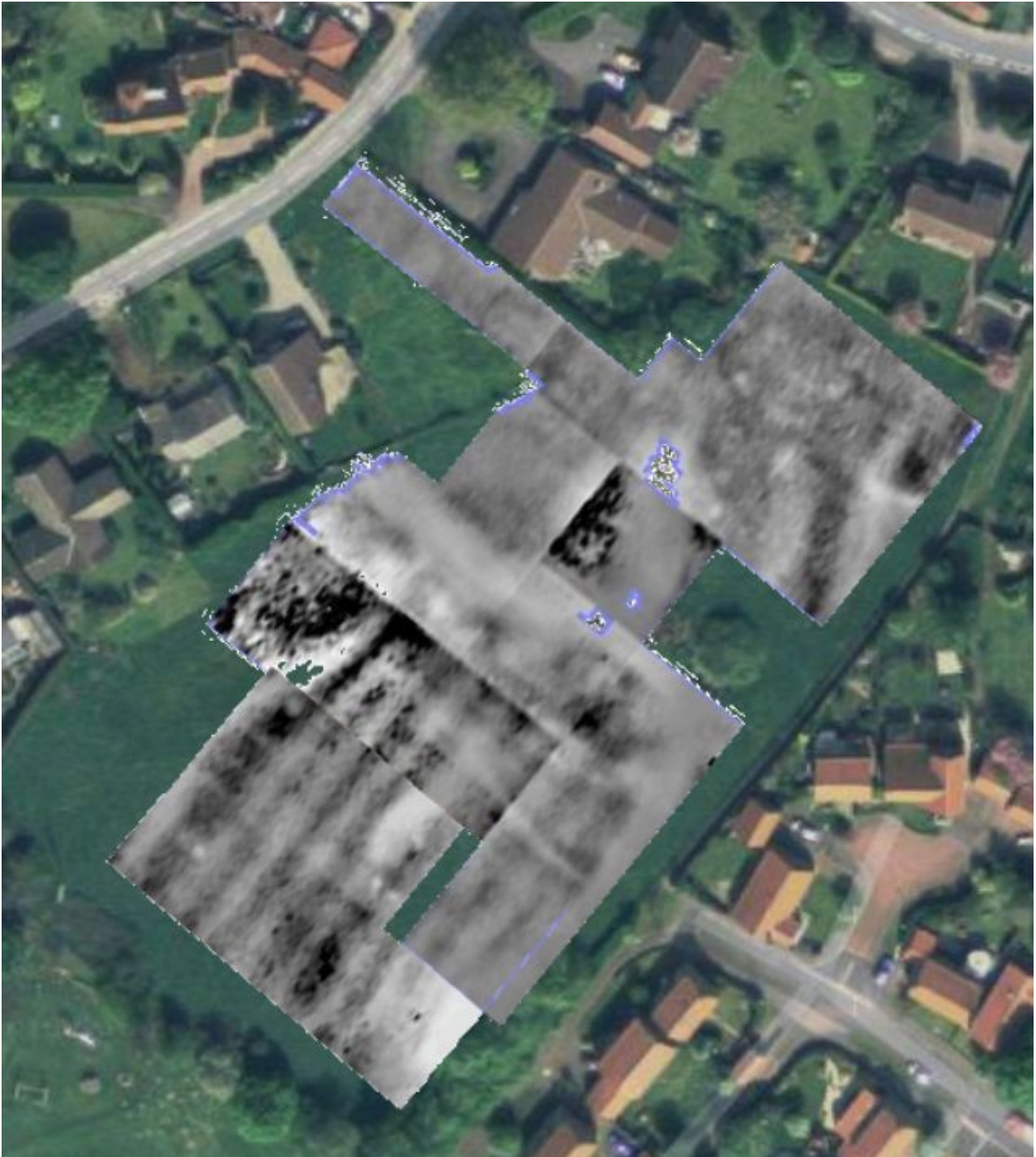


Figure 4: Earth resistance survey results overlaid onto Google Earth image.

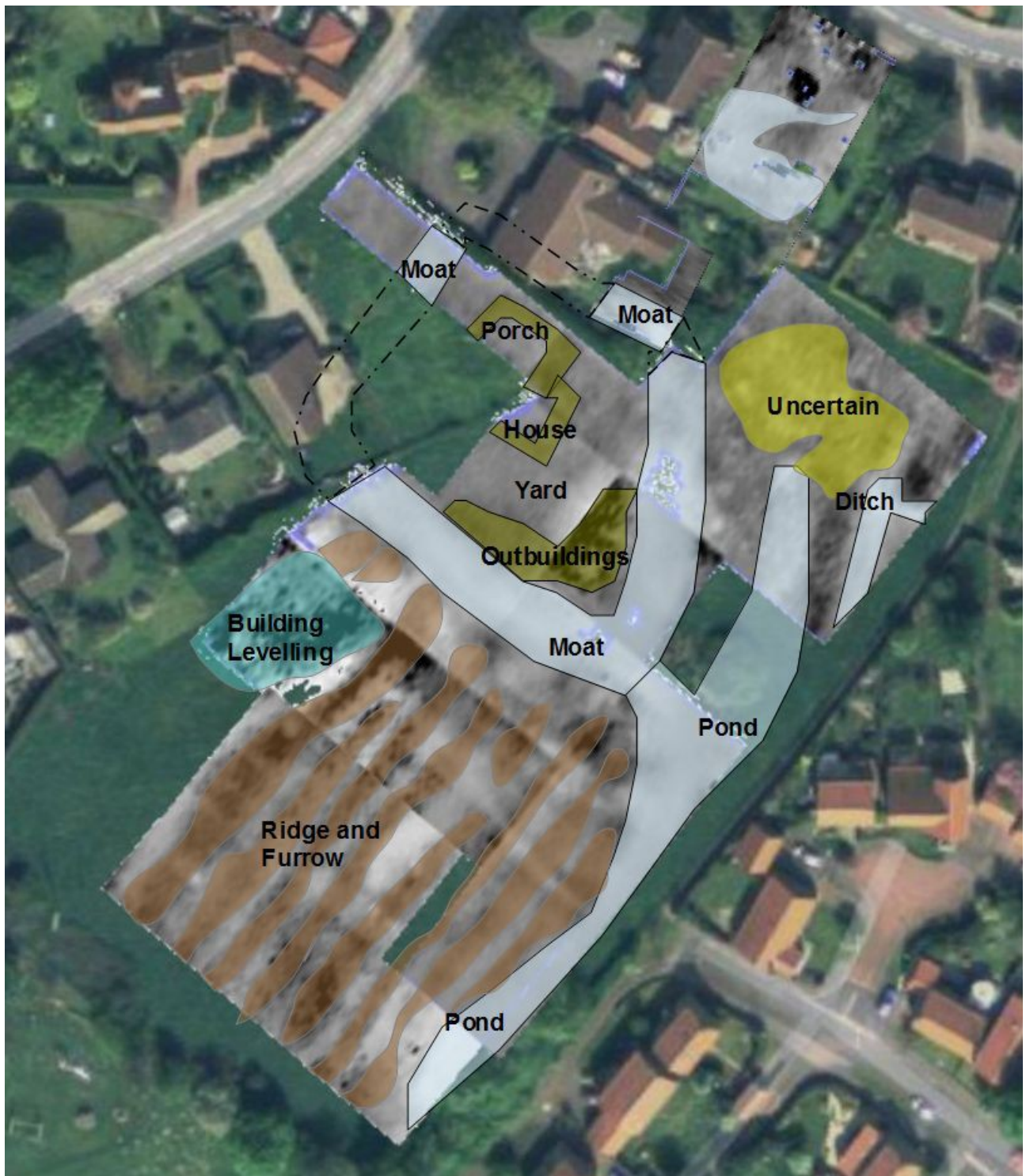


Figure 5: Interpretation of anomalies from earth resistance survey.

- 4.2 The earth resistance survey has shown three potential sets of anomalies that may show structural archaeology. These are shown in figure 6. They suggest the possible location of a) a rectangular structure measuring approximately 30m by 10m, b) a rectangular feature some 10m by 5m and a more irregular, c) a roughly L shaped feature measuring about 20m by 10m. All of these anomalies were high resistance in nature.

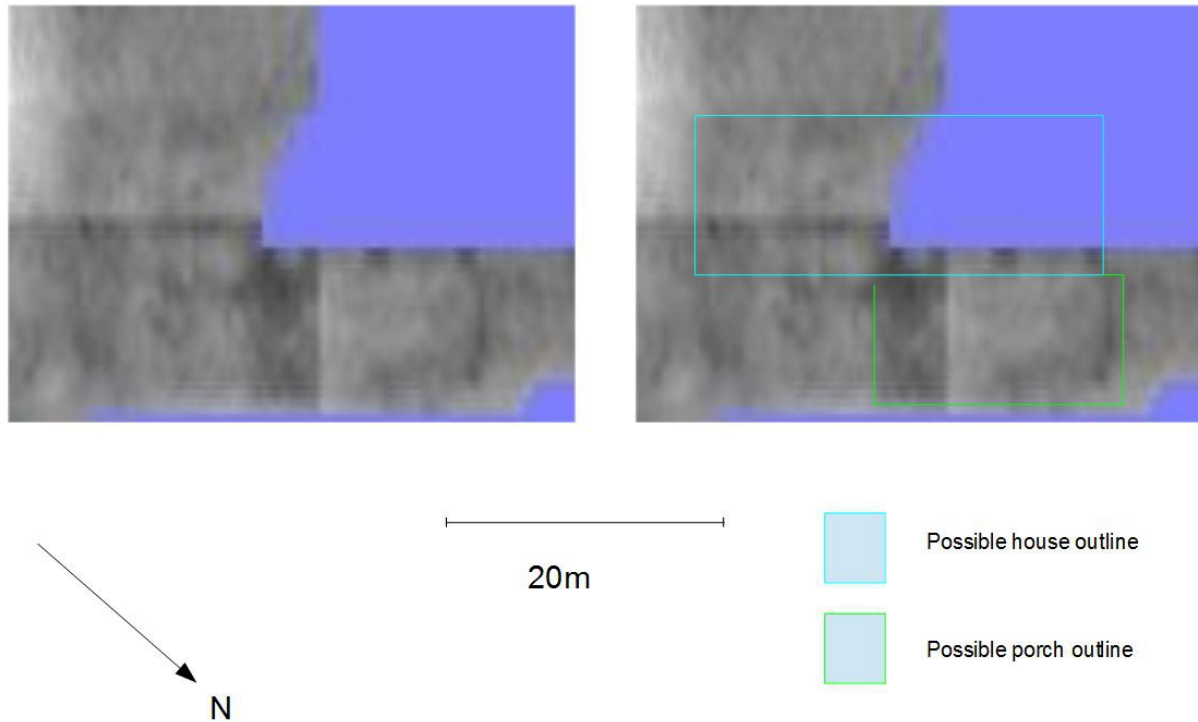


Figure 6: Possible outline of house and brick feature.

- 4.3 The linear anomalies in figure 6 form a rectangular pattern that may represent the footprint of a house built on sill beams. This may be the footprint of a small typically medieval house that might be a simple long house or more a small hall given the location on a moat platform. Also appearing on this part of the survey is an anomaly that may be the footings of the demolished brick structure shown in Figure 2. This was interpreted when it stood as an unfinished cottage from the 17th century or possibly a deliberate folly built to be seen from the 18th century grange that overlooks the site. To these possibilities we might add the idea that this is a porch, being the abandoned beginnings of the 16th or 17th century upgrading of the timber house to a brick building.
- 4.4 The whole of the possible house does not appear in the survey, this is because it runs under the garden of an adjacent house where the owner would not grant permission for us to survey. A visual examination of the garden appears to show part of a rectangular platform that slopes towards the moat.

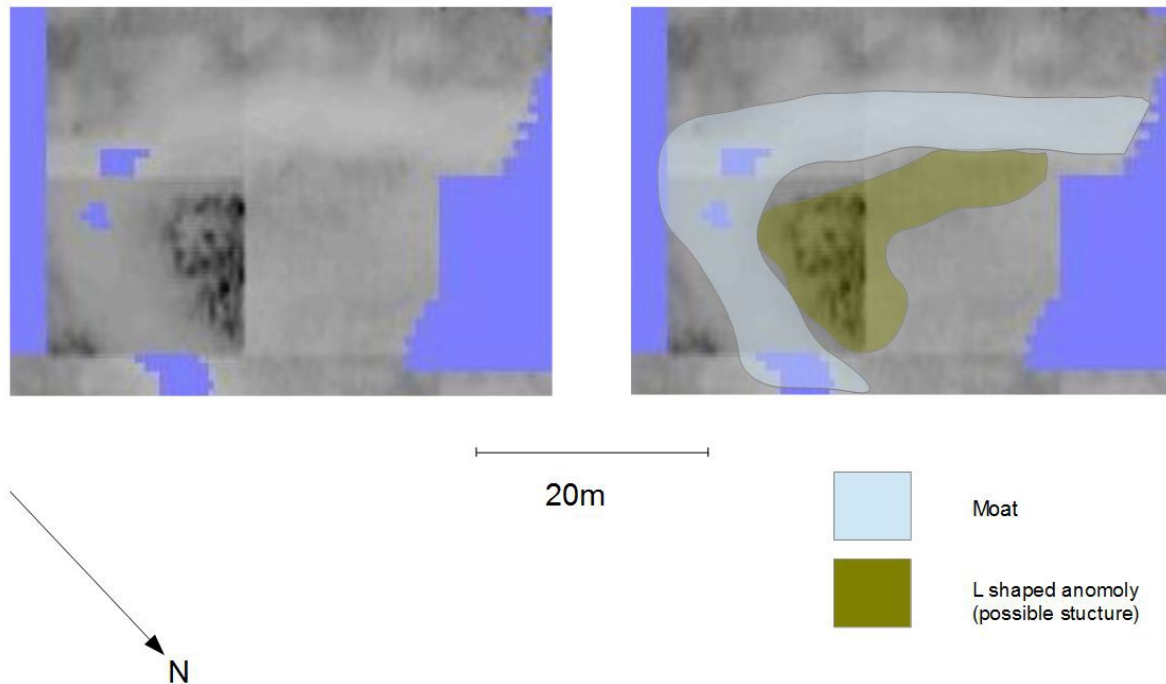


Figure 7: L shaped anomaly, possible structure.

- 4.5 The L shaped anomaly appears to have more pronounced reading showing towards the south east end of the moat (see Figure 7). This is a result of different sections of the platform being surveyed on different days. The pronounced readings are brought out by a drier few days prior to survey. The anomaly does not show linear features as we see in Figure 6 but a set of high readings, not removed by the despiking process, may represent post pads supporting a structure. This may represent ancillary buildings located on the moat platform.
- 4.6 The moat appears on figure 7 and the survey located most of its alignment. The shape of the moat is defined on a number of old maps, it appears on our survey and can be seen as a shallow depression in the garden of one of the adjacent properties. The moat also appears to run into another property (that of Mr and Mrs Moore). Survey in the garden at the Moore's bungalow indicated that the moat turns in their garden and runs under the bungalow turning back just on the other side of their home. Discussion with residents who recalled the building of the bungalow revealed that they builders had to dig down nearly 15 feet to find solid ground under that corner of the building.
- 4.7 The moat is shown in figures 8 and 9. Figure 8 shows the moat taken from a 1960s map showing the moat complete, merged with a Google Earth aerial image to show the approximate path of the moat. Figure 9 shows the geophysical evidence for the positioning of the moat.

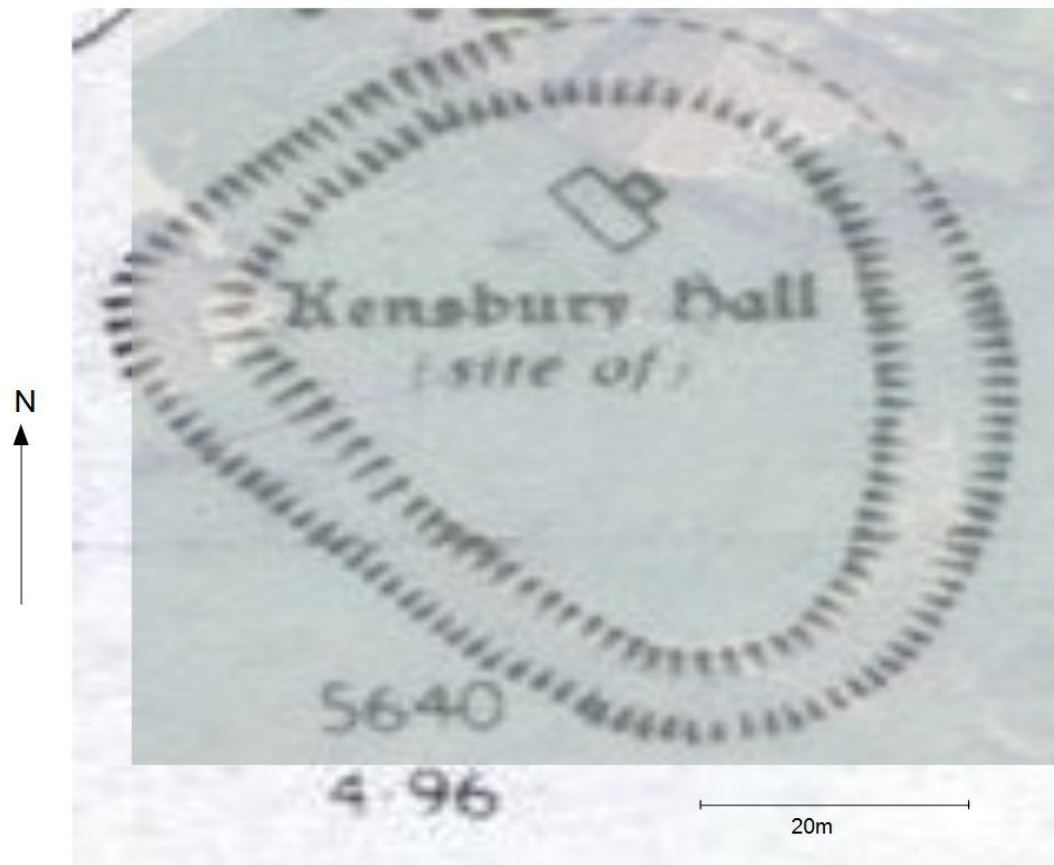
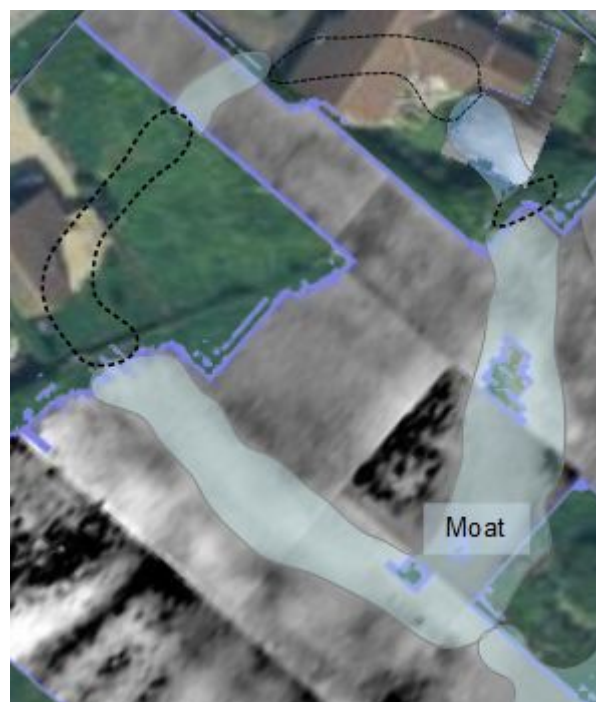


Figure 8: 1960s map merged with aerial image.



**Figure 9: Earth resistance survey evidence for moat.
Probable course of moat where not surveyed marked by dotted line.**

- 4.8 The earth resistance survey also took in a number of water features in addition to the moat. These were located to the south east of the moat. Most were visible as extant features but some had been affected by the re-landscaping of part of one water feature into a roughly circular pond with a willow tree growing in its centre.
- 4.9 The water features seen in figure 10 below can be understood as a pond that arcs to the south and east of the moat and appears to have a link to the pond. Presumably at some time having a sluice gate allowing water to be retained in the moat or released. To the east of the pond another water course appears, this may be a drain taking excess water towards the village pond or the river.



Figure 10: Pond and drain features on Keesbury.

- 4.10 In addition to the moat, pond and drain there may also be evidence for water either escaping from the pond at time of flooding, washing a channel through the adjacent ridge and furrow, or of an attempt to drain the furrows into the pond, see Figure 11 below.

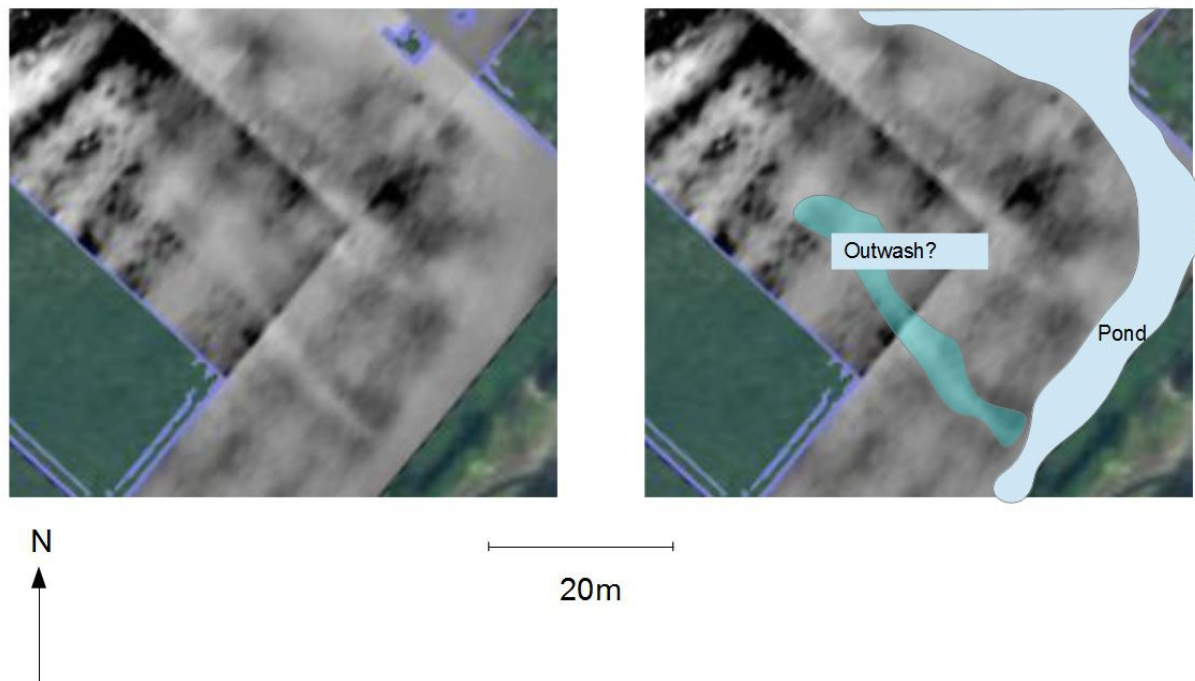


Figure 11: Possible outflow of water from pond during flooding.

- 4.11 The Keesbury site also shows extant ridge and furrow that comes up to the moat on the south west. The earth resistance survey shows this well and also suggests that there is a headland at the point the field system meets the moat, see figure 12 below.
- 4.12 To the west of the ridge and furrow an area of high resistance can be seen near to the back gardens of the houses built in the 1970s. This may be a spread of building rubble spread onto the field and masking further ridge and furrow.
- 4.13 To the north of the site at the tip of the pond there is an area of indeterminate nature on the earth resistance (see area denoted by a ? in Figure 5). This may have been used as pasture or other horticulture. There are areas of low resistance that may reflect tree boles. This area may warrant further investigation to determine the nature of the results here. The existence of manors in Cawood in 1040 suggests there may be pre Norman remains in the area.

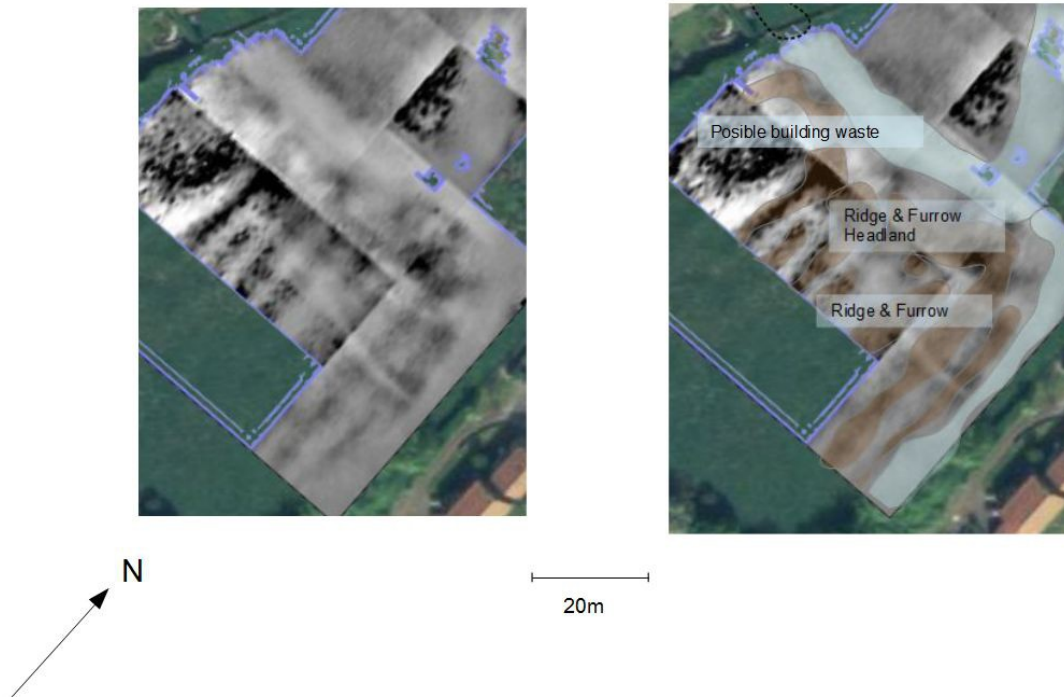


Figure 12: Ridge and Furrow, ridges show as high resistance anomalies.

- 4.14 The earliest map of Cawood so far found, by Margaret Brearley, has been a Tithe map from 1780. This is not to scale so pinpointing geophysical survey plots onto it are not easy. This map however, shows a building not recognised on later maps (see Figure 12), such as the 1852 OS first edition.
- 4.15 It does seem possible that the geophysical survey may clip this building, which appears on the map to be of similar size to a building on the moat platform.

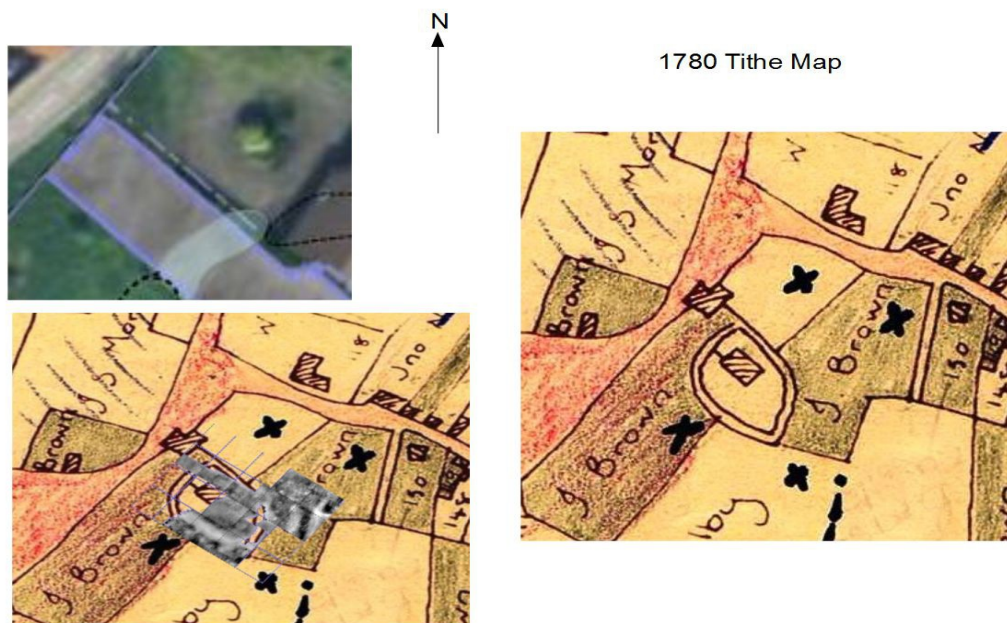


Figure 13: 1780 Tithe map and geophysical survey plots showing possible presence of feature near the road.

- 4.16 The fluxgate gradiometer survey was carried out on the moated site platform to ascertain any specific features that might be located by this type of geophysical survey, hearths for example. The results are shown in figures 13 and 14 below. The results confirm the potential site of the building, marked in dark green and areas of disturbance that may represent smaller buildings. Two areas of high response are thought to be metallic fence elements and concrete wall footings.



Figure 14 Fluxgate gradiometer survey overlaid onto aerial view of Keesbury.



Figure 15: Interpretive map of Fluxgate Gradiometer survey.

5. Discussion and Conclusions

Discussion

- 5.1 The moat that lies at the heart of the medieval Keesbury estate has been defined again. The survey has confirmed that it was originally a complete moat and must have been accessed via a bridge.
- 5.2 The linear features on the northern part of the platform may represent a structure, either something fairly low status for a lordly seat or a hall in the style perhaps of a Wealden Hall (see figure 13). This would have been the main seat of a family such as the de Cawood's until they moved away as family fortunes improved.

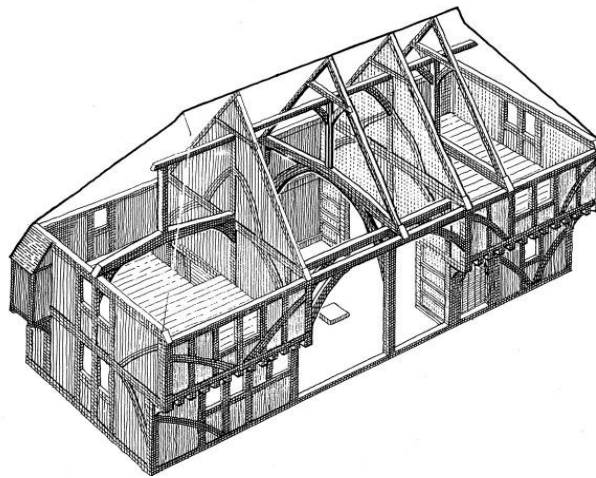


Figure 16: The Wealden Hall at Weald and Downland Museum.

- 5.3 The L shaped high resistance anomalies on the southern edge of the moat may represent a range of work shops, stores and animal shelters or pens. These are the type of building one would expect on a medieval moated site. There may also have been a kitchen along this side of the moat. Between the house and the service range there may have been a yard. These types of building were found not far away at the moated site at Wood Hall (see figure 14).



Figure 17: Reconstruction drawing of workshops at Wood Hall.

- 5.4 The use of a moat and fish pond as part of the medieval manorial estate is normal practice. This is partially for practical purposes, providing fish for the table and because such features are a sign of status. The survey shows that the pond was different in shape to the pond we see today and that drainage was an issue. The research into possible boundary ditches in the vicinity of Keesbury suggest that a number of medieval ditches and drains ran through Cawood, acting as boundaries and draining an area prone to flooding.
- 5.5 Ridge and Furrow is still often found as a monument in the landscape, over the last 30 years a good deal of it has been ploughed out and here at Keesbury it provides a reminder of how medieval agriculture worked and differed from modern practices. Although ridge and furrow is difficult to date it has a relationship with the moat at Keesbury. The headland abutting the moat suggests that the moat was there when the ridge and furrow was ploughed.
- 5.7 There are questions raised about how long the house occupied by the de Cawoods stood. The early maps 1780 and 1852 may show the brick built structure of the moat. But the building shown in these maps appears more central to the moat. They also seem larger than the brick structure. Further investigation of the map evidence may be required.
- 5.8 Further investigation of the building on the road to the north west of the moat in the 1780 map would also help to understand the area, but it may be difficult to locate.

Conclusions

- 5.9 One of the aims of the geophysical survey was to suggest whether there is archaeology on the platform of the moat. The survey suggests that this is the case. It is not clear what deposits remain and the next question to ask is just that. The deposits causing the anomalies in the earth resistance survey need to be evaluated and some of the suggestions made in this report should be investigated and evaluated.
- 5.10 If the deposits suggested by the geophysics are well preserved the site would be an important example of a small lordly seat. This report does not suggest that full excavation should take place but rather that evaluation should be carried out to ascertain the nature of the deposits and to establish relationships with the results of the survey reported here.
- 5.11 As part of the evaluation process the site should be put into its larger landscape, comparing it to its wealthy neighbour, the Archbishop of York's palace and better understanding the nature of Cawood as a village with two manors. This is part of the objectives of the Keesbury Manor Heritage Project.
- 5.12 The site at Keesbury continued in existence beyond the life of the house on the moat platform. Questions have been raised about the purpose of the brick structure still in existence into the 1960s,. Was it an incomplete cottage? Was it a folly? Or could it have been the beginning of the rebuilding of a wooden manor in brick? The latter being a task that was abandoned in favour of better land, unencumbered by moats and fish ponds. For example the site where the grange sits today.

- 5.13 Once the house has gone the site remains in agricultural use. The brick structure was used as a cow shed in living memory. The Keesbury Manor Heritage Project has already identified the land in the area as later referred to as 'the gooseberries' and indication of the importance of horticulture in Victorian and Edwardian Cawood.

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