A RECENT GEOPHYSICAL SURVEY OF THE GARDENS OF WEST BOWER MANOR, DURLEIGH

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SUMMARY

A geophysical survey was undertaken in the gardens of West Bower Manor to try to establish the extent of any surviving walls and features relating to the layout of the 15th century manor. The survey has identified a series of long linear anomalies, the position of the 16–17th century dovecote, and a group of 18th–19th century farm sheds.

INTRODUCTION

This survey forms part of a detailed study of the medieval manor of West Bower, Durleigh (centred on ST 26553640), in which the surviving architectural features have been surveyed, including the 15th century gatehouse and an examination has been made of the documentary and topographic sources relating to the site.

The primary aim of the survey was to locate any remains of the early manor and the position of the 16th–17th century dovecote. This was circular and built of clay and cob on a stone foundation (Taylor 1968, 101). Recent work by Gater *et al.* (1993, 55) in the main river valley to the east of the site found that the geology of the area permitted successful geophysical investigation. It was hoped that foundations could be located by means of a resistance survey. If so, the results could be compared with other anomalies from the site in an attempt to identify the remains of buried walls.

Background

The manor of West Bower was owned by Richard Coker in 1335 (Dunning, 210) and in 1489 passed to the Seymour family. In 1540 the house was described as in two parts, with a little court within the walls, and a garden and orchard (Seymour Papers, XII). The house and its land was incorporated into the Halswell estate at the end of the 16th century and its main use since then has been as a farm. The land immediately to the south of the house, including a series of fishponds, was lost in 1938 when the Bridgwater Water Company constructed Durleigh Reservoir and flooded the valley floor.

Geology and Position

The site is situated at an altitude of approximately 20 m above OD, and lies in a partially submerged valley. The underlying geology is keuper and bunter sandstone (Stuart-Menteath, Fig. 2) and the dominant soil type within the local area consists of a series of stagnogleyic argiflic brown earths.

GEOPHYSICAL SURVEY

Method

The survey grid was aligned with the eastern range of buildings and consisted of 32 squares, each 10 m by 10 m (Fig. 1). The corner pegs were located with hand tapes using triangulation. The survey was carried out using a Geoscan RM15 earth resistance instrument with a combined data logger and a 0.5 m twin electrode configuration. The readings were taken with a zigzag action along 1 m traverses, using a sample interval of 0.5 m. The data was stored in the datalogger and downloaded off site into Geoplot 2 for processing.

Survey Difficulties

Due to an incorrect setting on the resistivity instrument, the data from the first grid is corrupt and has not been included in the results. A further problem was due to the positioning of the probes within each transect. Readings were taken every 0.5 m, with the initial reading being taken at a distance of 0.5 m along the transect. The computer software, Geoplot 2, does not accept this as a valid survey technique and is formatted in such a way that the readings must start at point zero on each transect. It has not been possible to rectify this and the anomalies have a slightly staggered appearance.

Another problem with Geoplot 2 is that it does not provide the option of printing the details concerning the resistance and range of the data being displayed. However, for the purposes of interpretation, it should be noted the white/light anomalies have a low electrical resistance and the black/dark anomalies have a high electrical resistance, (Fig. 2).

Results

The results of the survey have been superimposed on to the ground plan of the site (Fig. 2) and interpretative details are displayed on Figs 3 and 4, (numbers relate to Fig. 4 and upper case letters relate to Fig. 3). The data is presented in a grey scale printout and interpretative plans (Figs 2, 3 and 4). Visual enhancement of the anomalies has initially been achieved by interpolation of the raw data along its x-axis, therefore visually smoothing the image. A low pass Gaussian filter (Scollar *et al*, 1990) has also been applied to the data (Fig. 2).

A group of high resistance rectilinear anomalies, 5a, were located in the south-eastern corner of the survey area (Fig. 4). These appear to coincide with B, a demolished barn and a set of animal pens. Associated with this building were a series of boundaries (Fig. 3, E) which also have been located, 5b. The ground level was raised in this part of the farm when Durleigh Reservoir was created, which may explain why this area has patches of low resistance. Further evidence for this can be seen in a strip, *c.* 1.5–2.5 m, thick, of low resistance anomalies, 4a, 4b, 4c, along the southern edge of the survey. It is likely that these represent back filling which took place when the revetting wall for the reservoir was built.

A strong circular anomaly of high resistance (5c), *c.* 7 m in diameter, has been identified as the remains of the *c.* 16th–17th century dovecote, A, which was destroyed in 1967 (Taylor 1968, 101). Although the data is staggered, the anomaly appears to be *c.* 1–1.5 m wide and therefore thicker than the anomalies at 5a. An explanation for this may be that the stone footings of the dovecote were wider than the barn at 5a and/or there is a rubble spread caused during its destruction in 1967. The doorway was located to the northest of the anomaly (Fig. 2).

The areas immediately south and west of the house, 1a and 1b, are marked by extreme anomalies of both high and low resistance. It was not possible to survey right up to the buildings because of buried cobbles and a concrete path. Area 1a used to be covered in concrete, and this may be partially responsible for the anomalies in this area which are north of Feature F.

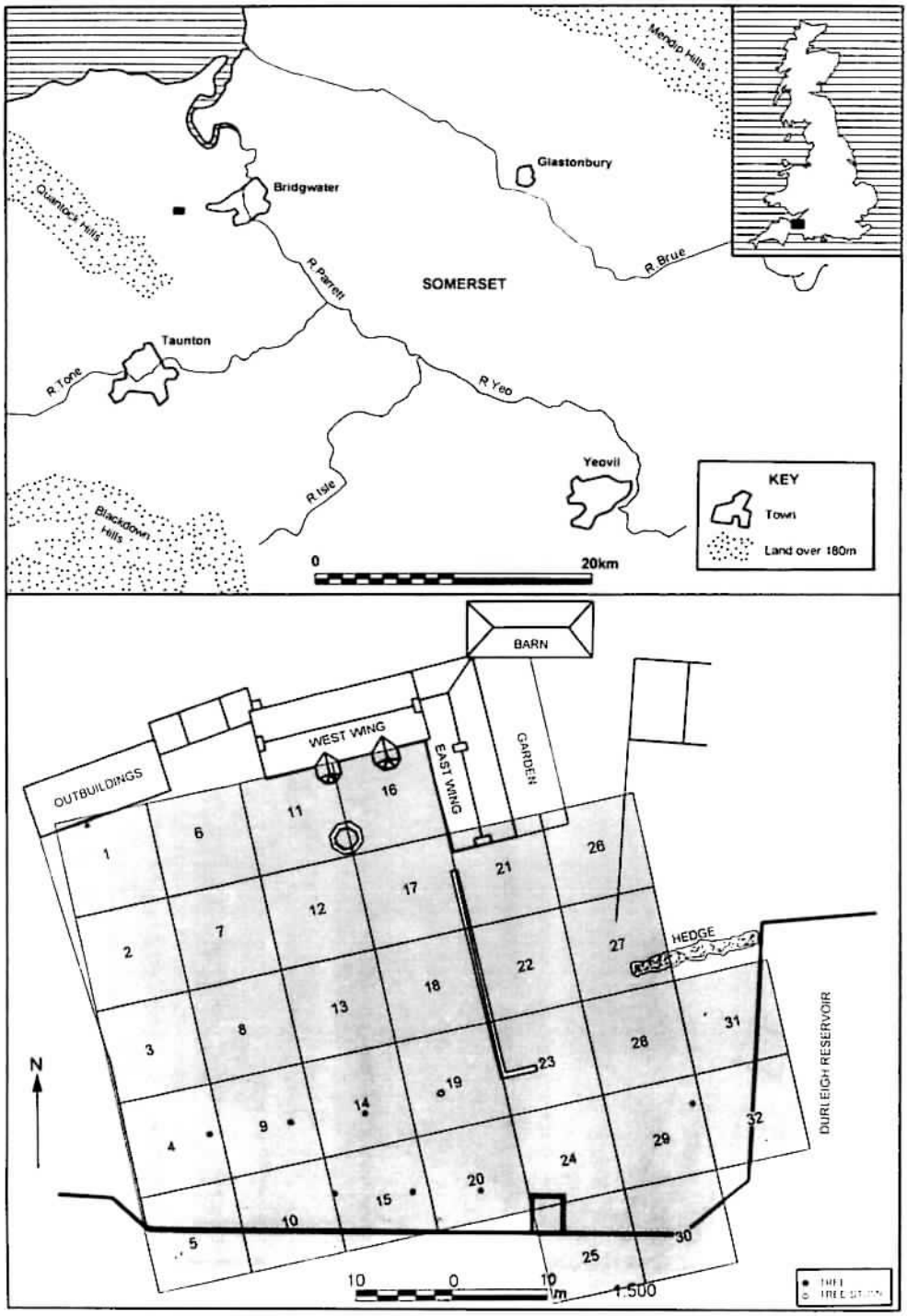

Fig. 1 Location map and survey grid.

Fig. 2 Half-tone plot of raw data.

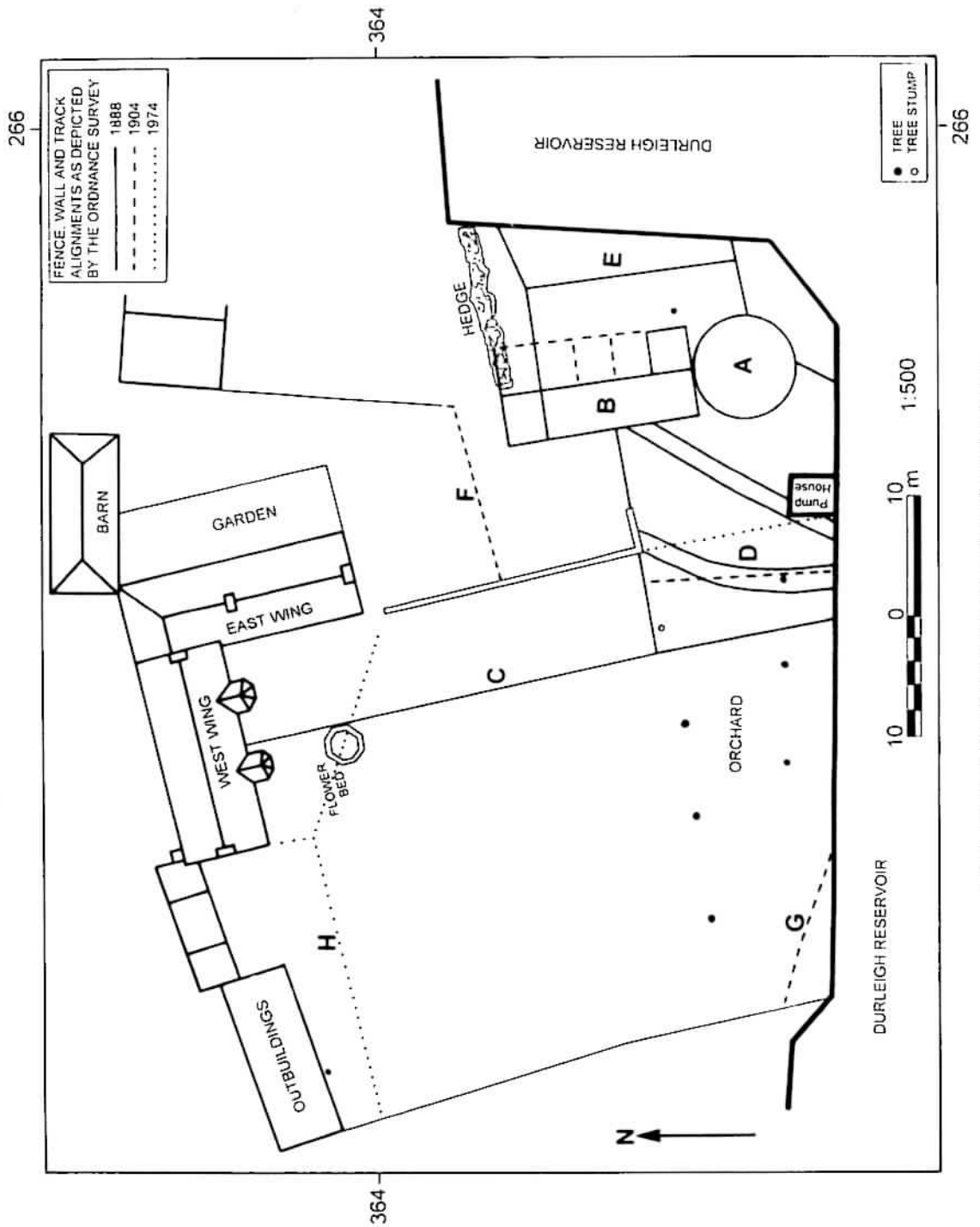

Fig. 3 Location plan of survey site with positions of intrusive features.

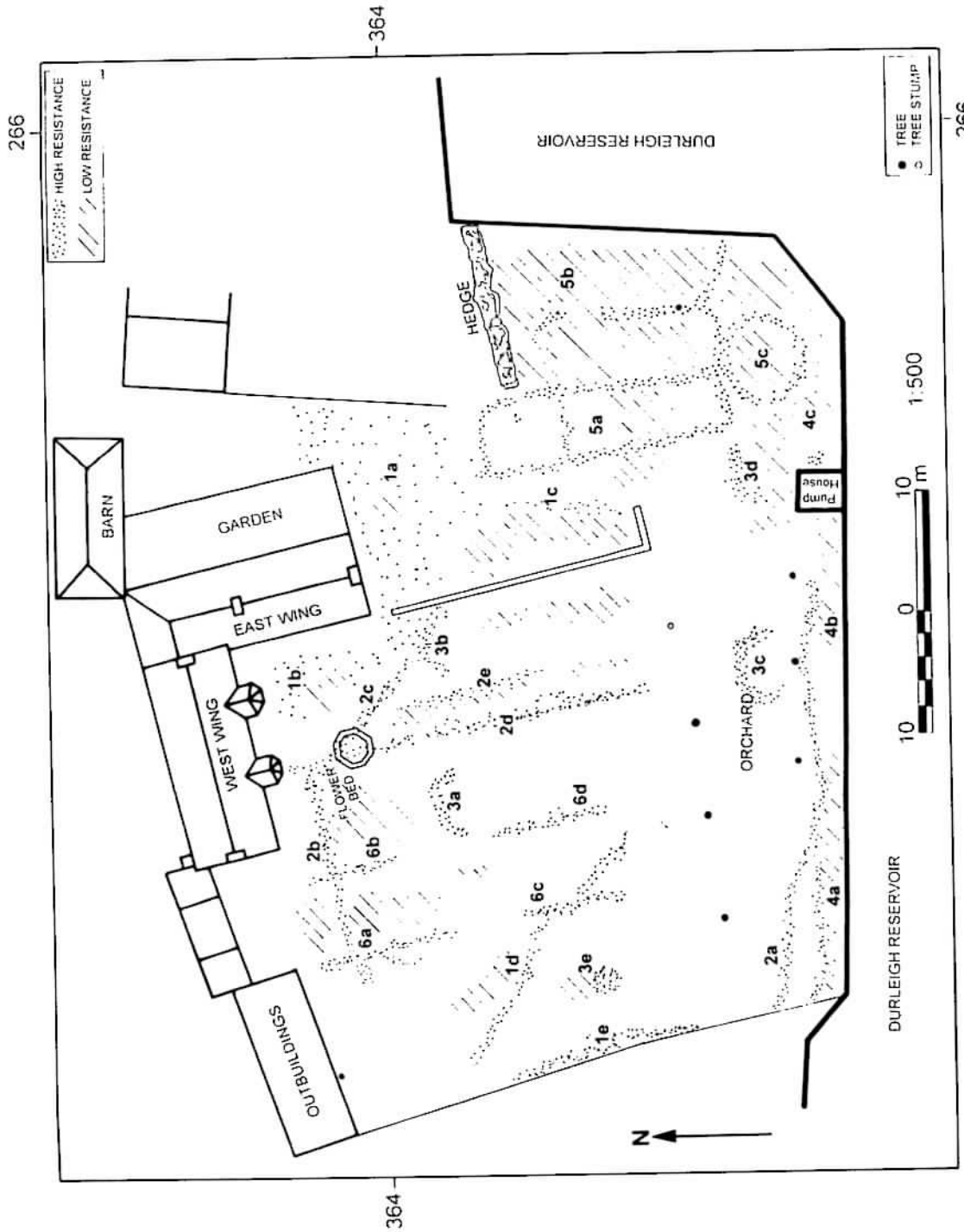

Fig. 4 Interpretative plan of survey area.

Two drains are known to have run across the site, both heading for the pump house (information provided by the previous owner Mr M. Martin). Their exact routes are unknown, although one originates from the north-west and the other from the north-east. It is possible that the high resistance anomalies at points 1c and 1d actually represent both of these buried features, the anomaly at 1c extending to the south-west and at 1d to the south-east. Regrettably neither can be followed completely to the pump house.

Two thirds of the southern part of the survey area is covered by a small orchard. It is in this area that there is evidence of extensive disturbance, and this may be a result of tree root damage.

A narrow strip of high resistance anomalies along the western boundary wall probably represents fallen masonry and stone. A similar area of high resistance has been identified as a rubble deposit to the east of the pump house, and at both points the survey probes hit buried stone.

Within the central part of the survey there are 4 small curved anomalies of high resistance, 3a–3d. It is not known what may have caused them and whether they are in fact related. Another unclear anomaly, 3e, consists of a high and low reading, one above the other. They may represent water which is being held behind a stone feature, or a pit and its associated fill. In order to explain these anomalies any further, archaeological excavation would be necessary.

A number of the fence and wall alignments on Fig. 3 appear to match certain linear anomalies located within the survey. Two high resistance anomalies, 2b/2c and 2a, may represent features H and G respectively. Anomaly 2a, although unclear, may be connected with the disturbance related to 4a. The longest boundary on Fig. 3, is feature C, which is *c.* 50 m long. It is on a similar alignment to two high resistance anomalies, 2d and 2e, and one of them may directly relate to it. It should be noted, however, that there may be inaccuracies on the map of 1888 and both anomalies may represent a succession of boundaries at this point.

Finally, in the western part of the survey area 4 linear alignments of high resistance anomalies have been located, 6a–6d. The distance between them is *c.* 7 m and they form a right-angle with the west wing of the house which contains the 15th century gatehouse. It is therefore tentatively suggested that they represent wall alignments relating to the demolished medieval complex of buildings (Seymour Papers, XII).

CONCLUSION

The results, although staggered, have enabled interpretation. It would appear that most of the anomalies were created by 19th centurty land divisions, farm buildings, and the creation of Durleigh Reservoir in 1938, which involved raising the ground-level along the southern edge of the site. However, the demolished 16th–17th century dovecote was successfully located. The other anomalies which may have archaeological significance are 6a-6d (Fig. 4). It is possible that they represent a western range of buildings, which were similar in size to the surviving medieval gatehouse, and once associated with it. However, this can only be confirmed by excavation.

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