Alfoxton Park
Resistivity Survey, April 2022

GeoFlo
Southwest Geophysical and Flotation Services

GeoFlo, 4 Mill Cottages, Taunton, TA4 1AD
www.geoflo.co.uk

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Quantock Landscape Partnership Scheme
Reimagining the Manor

Made possible with Heritage Fund

Quantock Hills Area of Outstanding Natural Beauty

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Acknowledgements

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1.0 Introduction

The survey took place in the walled garden of Alfoxton House (NGR 314800 141500) on behalf of the Quantock Hills Landscape Partnership. Alfoxton House is situated approximately 1km from the village of Holford in Somerset (fig 1). The building was constructed in 1710 after the previous Manor was destroyed by fire and is currently a Buddhist retreat centre. The walled garden is a Grade II Listed Building (Somerset HER ref no. 30527). It is currently mostly overgrown but is being developed into an eco-garden and wildlife haven. The purpose of the survey was to try and locate any former garden features which could be incorporated into the garden development.

The survey was carried out by GeoFlo – Southwest Geophysical and Flotation Services.

1.1 Equipment

Resistivity meter – TR/CIA Resistance Meter

A twin probe array was used, with mobile probes at a fixed separation of 500mm and two remote probes of variable spacing. The meter range was 200 Ohm, and minimal filtration was employed to remove any effects of mains electrical earth currents. Resistivity meters work by measuring the resistance to the passing of an electrical current through the ground from one probe to another. Different buried components in the ground have different degrees of conductivity or resistance. Water is the best conductor in the soil so in effect the method is also dependent on the amount of moisture present. As a consequence it can be susceptible to geological and seasonal variations. It is effective in the identification of stone structural remains, organically rich deposits and cut linear features or large pits, where there is sufficient contrast between features and the surrounding buried environment.

Software – Geoscan Geoplot 4.00

Geoplot 4.00 allows the presentation of data in four graphical forms: dot-density, grey scale, pattern and X-Y (or *trace*) plots. The latter are particularly effective when used in conjunction with other graphical modes to emphasise ferrous magnetic anomalies or other distortions which show as accentuated peaks or troughs. The programme supports statistical analysis and filtering of the data.

1.2 Field method

The survey area consisted of six 20m squares aligned with the garden walls (fig 2).

Readings were logged at 1m intervals along northwest to southeast traverses set 1m apart, in a zig zag pattern.

1.3 Processing method

1. Isolated high or low readings (noise spikes) were replaced by the mean reading.
2. The impact of geological variation was reduced by the application of a uniform high pass filter with a radius of 8 readings in the X and Y directions.
3. Data were smoothed and weak anomalies highlighted by the application of a low pass filter with a radius of 1 reading in the X and Y directions.

4. Further smoothing was achieved by the positive interpolation of data points along the Y and X axes, using the calculation of sin(x)/x.

2.0 The survey area *(figs 2 & 5)*

The grid comprises six 20m squares covering the interior of the walled garden. The majority of the garden was covered by the survey apart from three areas of bramble thickets (**X**, fig 5), plus upstanding garden structures and paths (**Y** and **Z**, Fig 5).

3.0 Survey results *(figs 3, 4 & 5)*

The survey results reveal a series of high resistance linear anomalies, consistent with the traditional division of the garden into four quadrants. The imbalance of the widths of the east and west quadrants is due to inaccessibility along the east wall.

The survey has also detected amorphous areas of high and low resistance. This is suggestive of disturbance due to replanting and reuse of the garden over the centuries, which can limit confidence in interpretation

Areas of high and low resistance are shown in fig 4. Fig 5 highlights anomalies where the degree of confidence in readings relating to archaeological features is higher. These anomalies are discussed in ***3.1*** and ***3.2*** below.

The readings below are after the use of a high pass filter enabling high and low resistance data to be expressed in a bipolar form.

3.1 Higher resistance anomalies

A Linear anomaly with reading ranging from 7 to 20 ohms. Appears to be a continuation of pathway **Z.**

B Intermittent, irregular linear, readings generally ranging from 8 to 16 ohms. Appearance and location suggests a continuation of path **A** along the northern wall of the garden.

C Linear anomaly ranging from 10 to 22 ohms. Within normal range for a stone path or wall.

D Intermittent linear trend with reading ranging from 5 to 8 ohms. Anomaly has possibly been intersected by the survey limit but readings and location suggests **D** could be part of a stone wall or path towards the eastern side of the garden.

E Irregular linear trend. Readings to the west are particularly high, ranging from 65 to as high as 142 ohms. Within the range for a significant stone construction just below ground level, forming the north-south division of the garden. Readings weaken significantly as the anomaly heads eastwards, ranging from 9 to 17 ohms. The western part of **E** is consistent with a path running alongside raised garden beds and a pond.

F Intermittent linear with reading ranging from 7 to 25 ohms. Within normal range for buried stone possibly relating to former garden features.

G Very weak linear trend with reading ranging from 1 to 2 ohms. Although extremely weak, **G** aligns with the dominant linear trend which strengthens confidence in its integrity. Possibly the remnants of a former garden feature.

H Amorphous area of high resistance with readings ranging from 8 to 12 ohms. Within the range for a deposit of buried stone/rubble.

3.2 Lower resistance anomalies

a Linear anomaly with readings ranging from -6 to -14 ohms. Within normal range for a ditch. Alignment is consistent with the dominant linear trend.

b Rectilinear area of low resistance, ranging from -14 to -20 ohms. Corresponds with an area of planting currently being carried out by the residents of Alfoxton House.

c Two rectilinear anomalies with reading ranging from 19 to 20 ohms. Appearance and readings are very similar to **b** suggesting recently cultivated areas.

d Linear trend bisected by bramble patch **X**. Readings range from -6 to -11 ohms. Alignment is consistent with the dominant linear trend. Possible former garden feature.

4.0 Conclusion

The degree of confidence in identified anomalies varies from moderate to high. The survey has revealed that the walled garden is of a traditional four quadrant design. Unfortunately, apart from the paths, the majority of other original garden features have suffered from disturbance over the centuries, making any interpretation uncertain.

Bibliography

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Fig 1: Location of survey

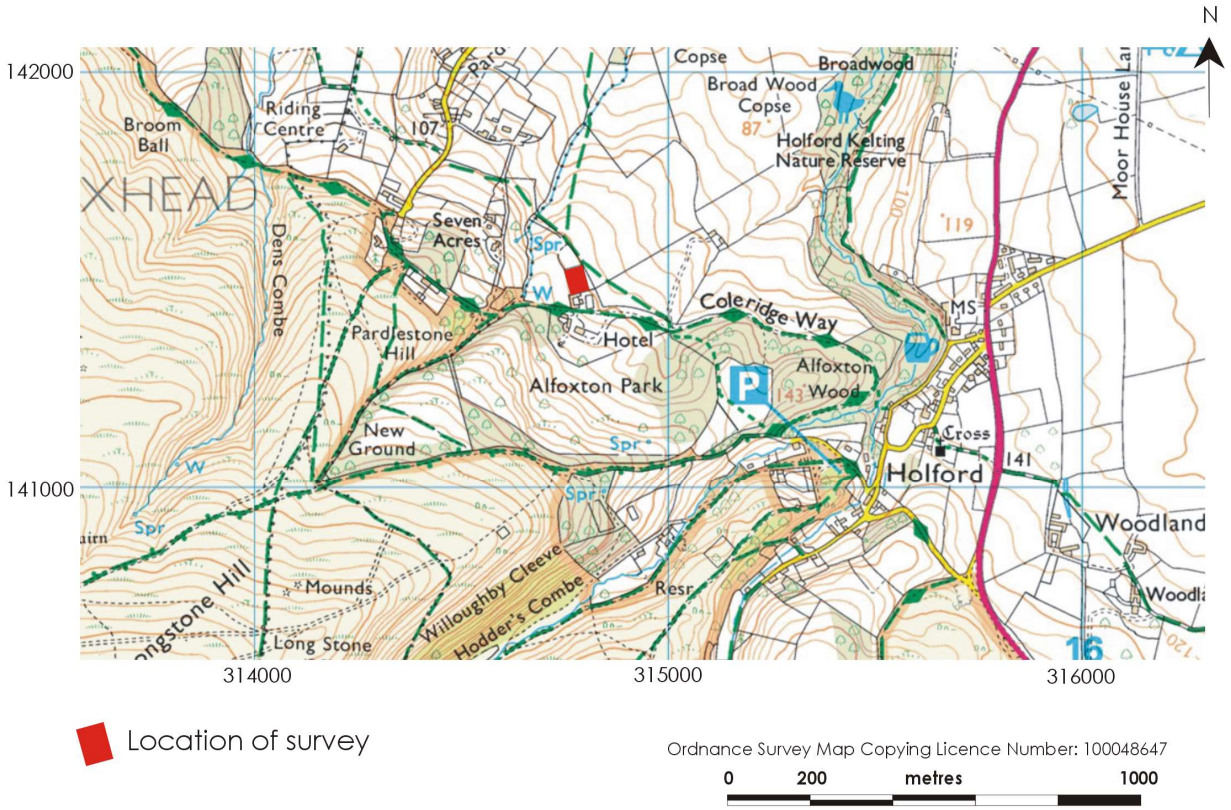

Fig 2: Location of survey - detail

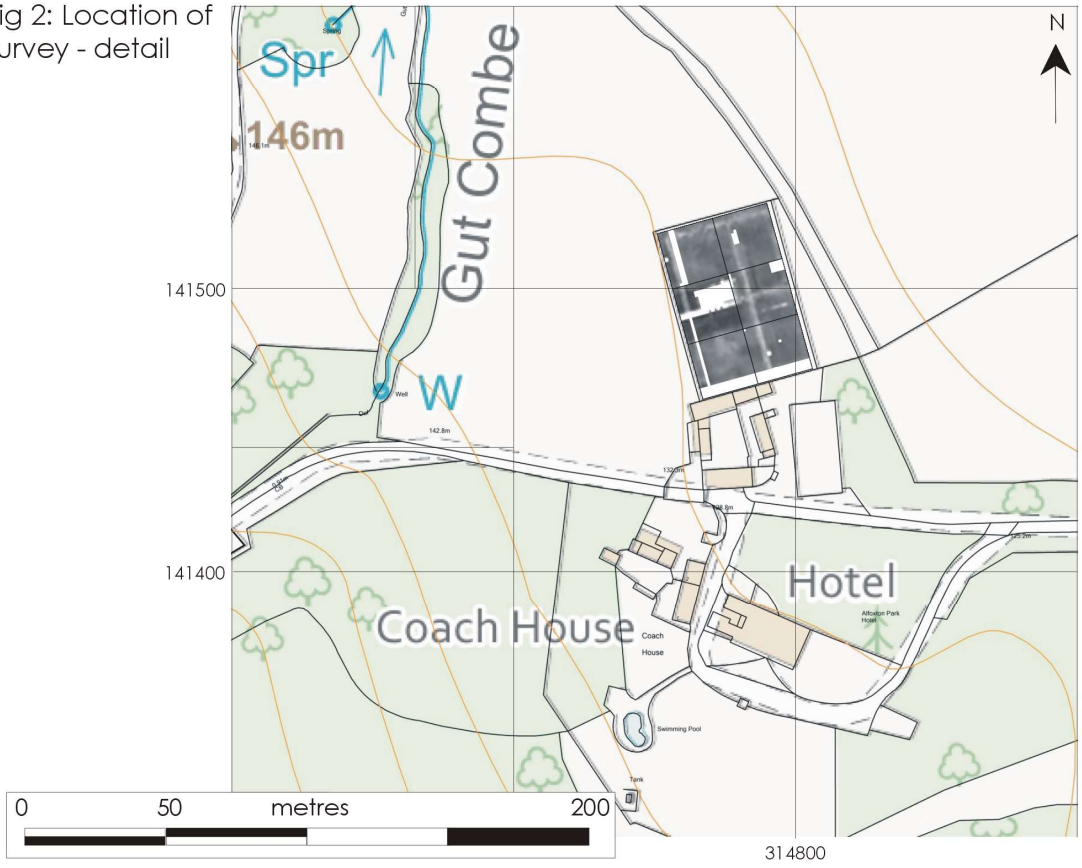

Fig 3: Survey results

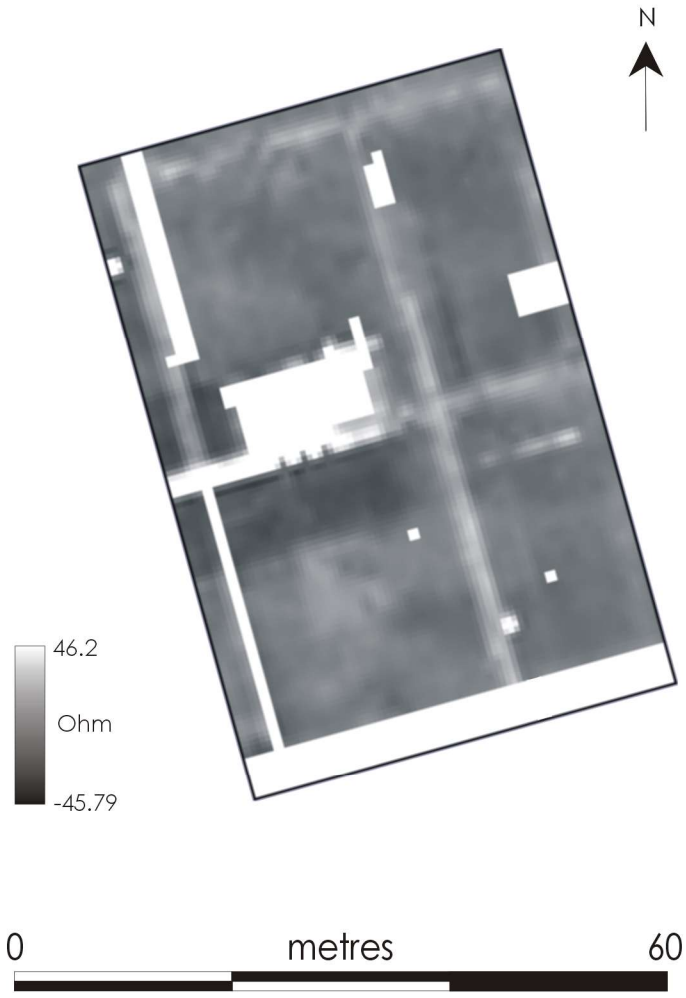

Fig 4: Highlighted survey results

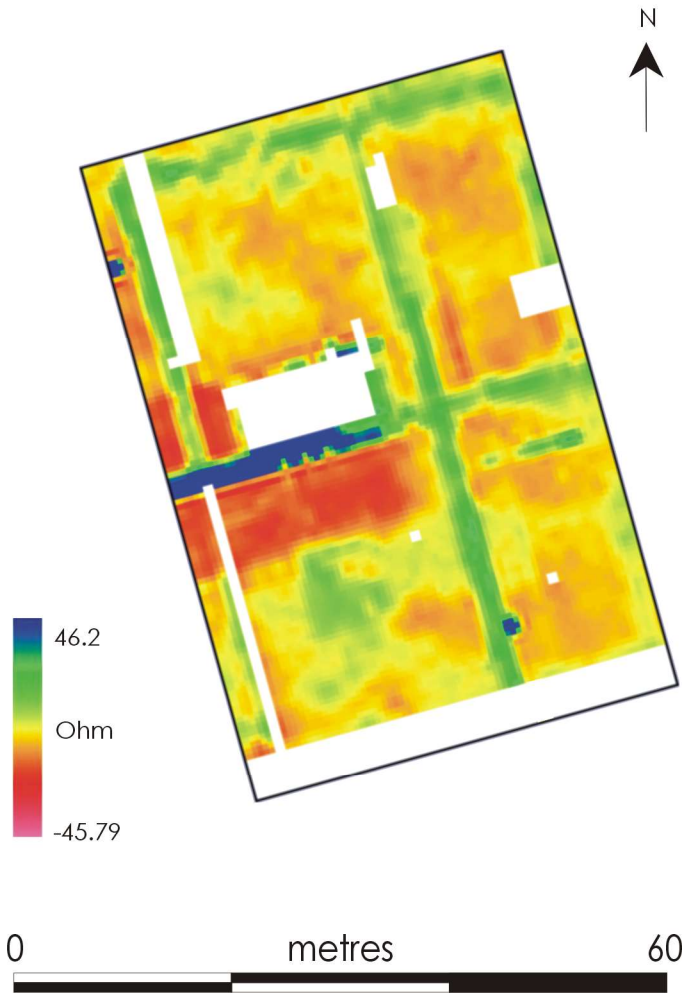

Fig 5: Interpretation

Report prepared by Liz Caldwell for GeoFlo – Southwest Geophysical and Flotation Services.
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GeoFlo
Southwest Geophysical and Flotation Services

GeoFlo, 4 Mill Cottages, Longaller, Bishop's Hull, Taunton, Somerset TA4 1AD
Tel: (01823) 323551 mobile: 07791 931297

info@geoflo.co.uk
www.geoflo.co.uk