

THE CHAPEL ON BLAKENEY EYE : INITIAL RESULTS OF FIELD SURVEYS

By Peter Carnell

During the winter of 1998/99 the BAHS undertook a detailed study of the 'chapel' ruins on Blakeney Eye, using a variety of survey techniques. Some useful information has been obtained and the first results are outlined in this article. Other reports will be prepared in due course after further analysis of the information obtained. This article describes the principal surveys: height measurements, geophysics and molehill sampling. A separate article in this issue of the Journal outlines what is known about the site from documentary sources.

Introduction

On the north-east corner of Blakeney Eye lie the foundations of a building long known as 'Blakeney Chapel'. A low earthwork suggests a two-celled building, although only slight traces of flint walling now remain. The site is owned by the National Trust and farmed by a leaseholder, and there is no public access. The building itself is legally protected by its status as an Ancient Monument (No. 305, Norfolk). The AM designation includes no land beyond the remains of the building itself, and the site is not included in Norfolk County Council's Monument Protection Programme.

The BAHS obtained permission from English Heritage to undertake resistivity and other surveys of the site, taking advantage of the varied skills possessed by members of the Society. The permission came in the form of a licence, under Section 42 of the Ancient Monuments and Archaeological Areas Act 1979, which permits access but still precludes any disturbance of the soil. However, moles have a privileged status and continually provide soil samples which can be examined for evidence of former activities on the Eye.

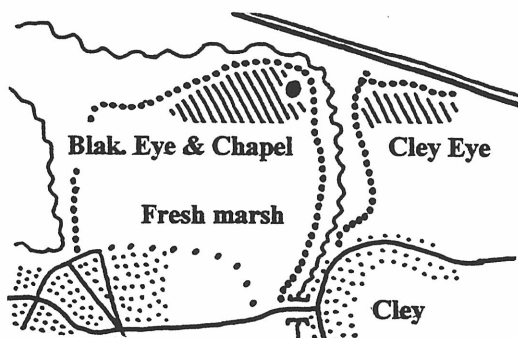
The main aims of the 'Eye Project' were to assemble known information about the site, to undertake surveys designed to add to this information, and to make the results available to the public. Although some documentary work was envisaged, the main emphasis was to be on fieldwork, principally contour and geophysical surveys, and the examination of soil cast up by moles. The intention was to discover the detailed shape of the chapel and of any other buildings that may have been located nearby, and to examine the surrounding area for any evidence that might help to determine how it had been used in the past. The Project team also had in mind a particular question: had the building ever been used as a chapel and, if so, when?

For convenience, the building is referred to in the rest of this article as a chapel, but this should not be taken as firm acceptance that the building ever had that function.

The Site

Blakeney Eye is one of several islands standing out above the level of the fresh marshes that stretch from Blakeney eastwards to Salhouse and Weybourne. These islands or *eyes* are composed of relatively recent glacial deposits and are characterised by thin soils over sandy gravels. Some such islands have already been lost to the sea as the shingle beach is rolled

landwards by storm waves, and others are in the process of going. At present a bank marks the northern edge of Blakeney Eye and close beside it runs Cley Cut, a channel dug for the River Glaven in 1922 to replace an earlier one obstructed by shingle. Since then, the sea has continued to advance; storm waves have rolled the beach back over the salt marsh and shingle is once more beginning to fill the channel. Some dredging has been carried out but this will not keep the Cut open indefinitely, and it is a near certainty that the sea will eventually destroy not only the Cut but also the Eye.



The Eye is but the northern part of the area enclosed by the bank running from Blakeney round to Cley. The southern, and larger, portion consists of low-lying pasture that would have been salt marsh before the embanking process began. The enclosed area lies within three parishes: Blakeney, Cley and Wiveton – with the whole of Blakeney Eye being in Cley parish.

The Survey Programme

Fieldwork was carried out on at least one day each week between January and May 1999, with between three and eight people on site at any one time. The selected survey area measured 100 by 40 metres, being the largest that could be covered within the time and resources likely to be available. The area occupied the extreme north-east corner of the Eye and was closely bounded by a post and wire fence beyond which lay the seabank carrying the coastal footpath. (Fig. 1).

Four measured surveys were conducted: height, resistivity, magnetometer and molehill sampling. They were preceded by a visual survey to record the main features of the site, principally the flint and mortar remains, the main ridges and depressions, and various grass marks. All survey measurements were entered into computer programs to produce distribution plots and other data.

Contour Survey

Heights were measured from an arbitrary datum level at one-metre intervals over the survey area, 4141 measurements in all. Figure 2 shows relative heights across the site at vertical intervals of 15 cms (6 inches). The chapel building stands on the highest point of the surveyed area. On three sides the land surface slopes down immediately and quite steeply; towards the north the slope is more gentle and a 'channel' appears to cut across a 'plateau' area. From the chapel area a ridge leads southwards, rising towards another knoll just outside the survey area. The chapel and the second knoll form the two highest points on the whole of the Eye.

Resistivity Survey

Resistivity is a method of measuring the ability of the soil to conduct electricity and the resultant maps, in effect, show the amount of moisture in the soil. Measurements were taken with a purpose-built meter and a frame with two probes attached. Two sets of readings were obtained: one over the whole site at one-metre intervals, and one in the immediate area of the chapel at half-metre intervals (4131 readings). The main survey was conducted on three successive Fridays and the initial results showed the effects of changing weather conditions.

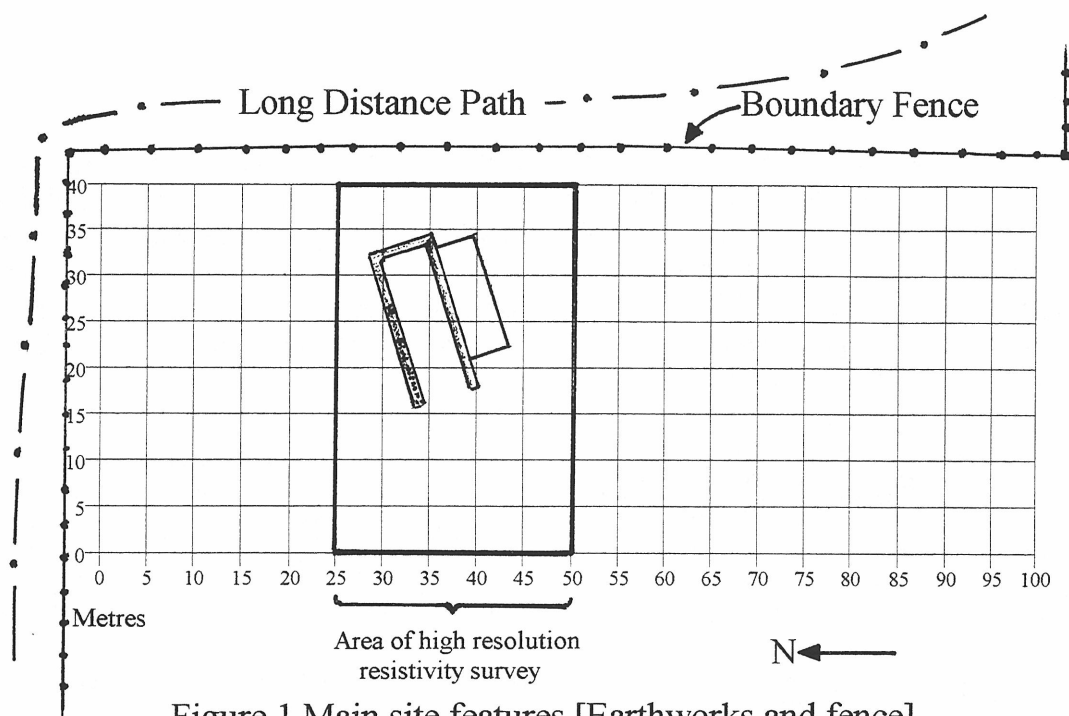


Figure 1 Main site features [Earthworks and fence]

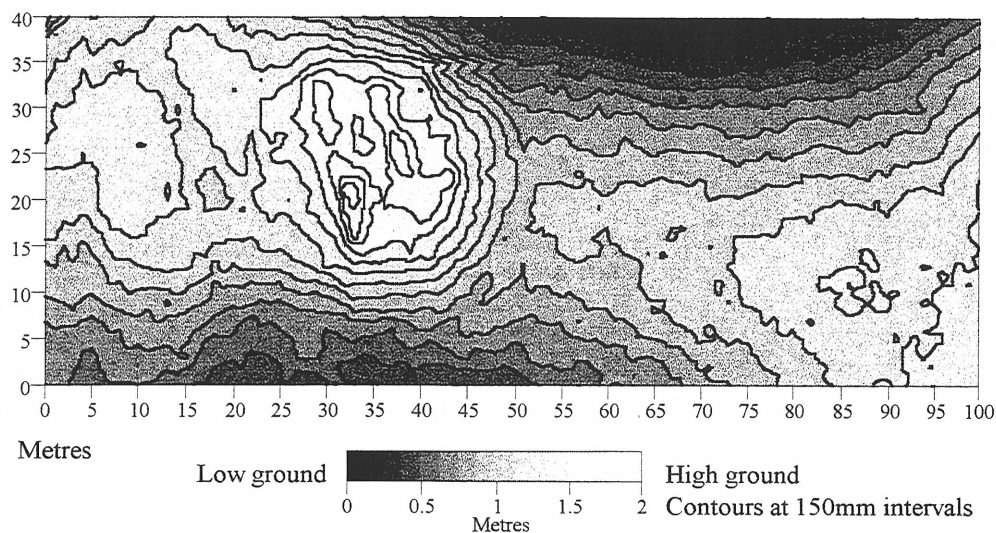


Figure 2. Height contour map .

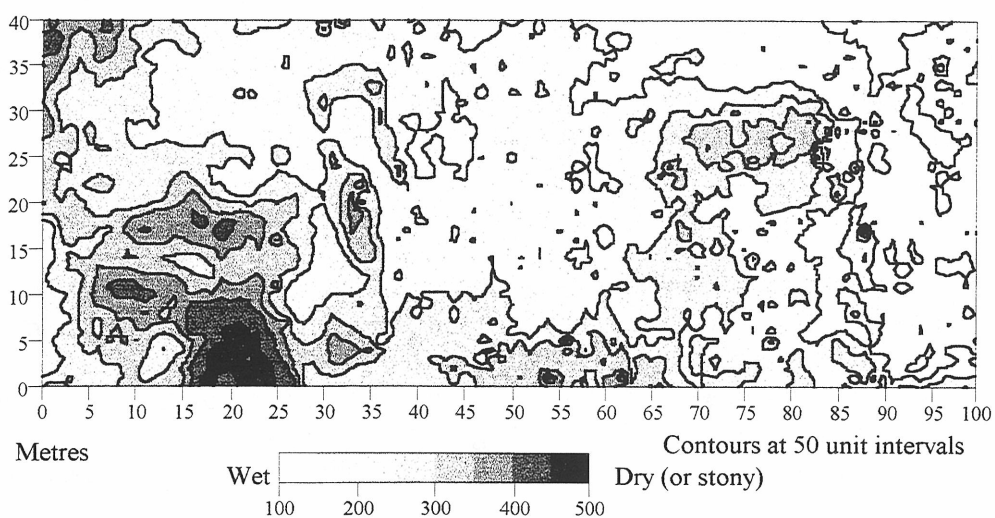
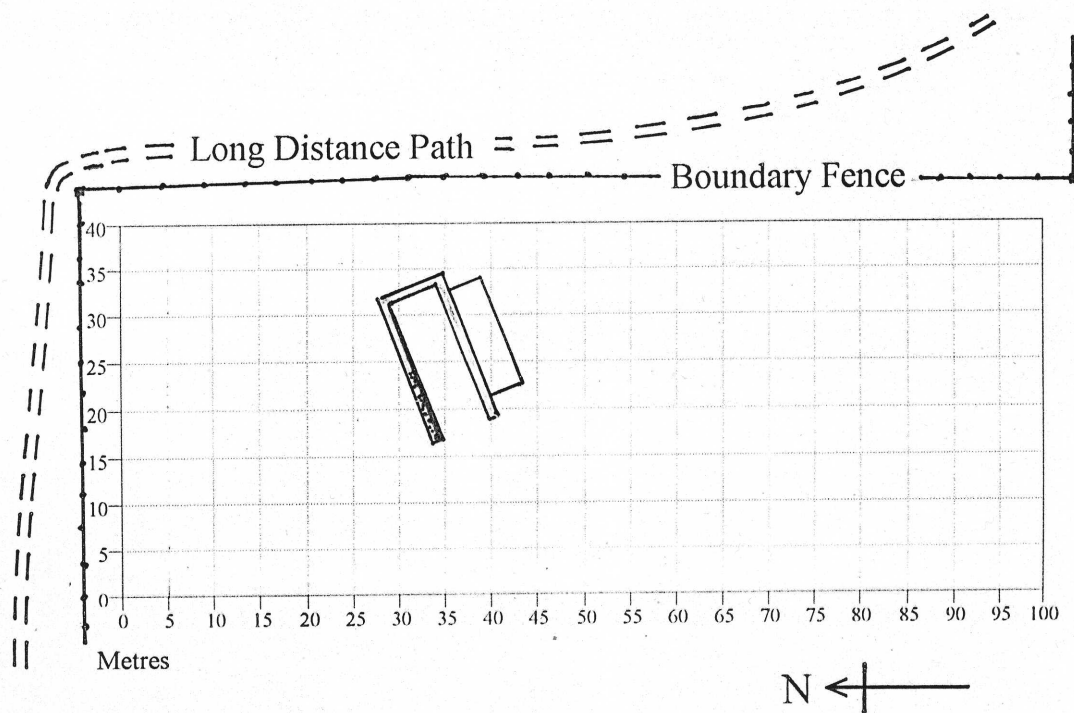
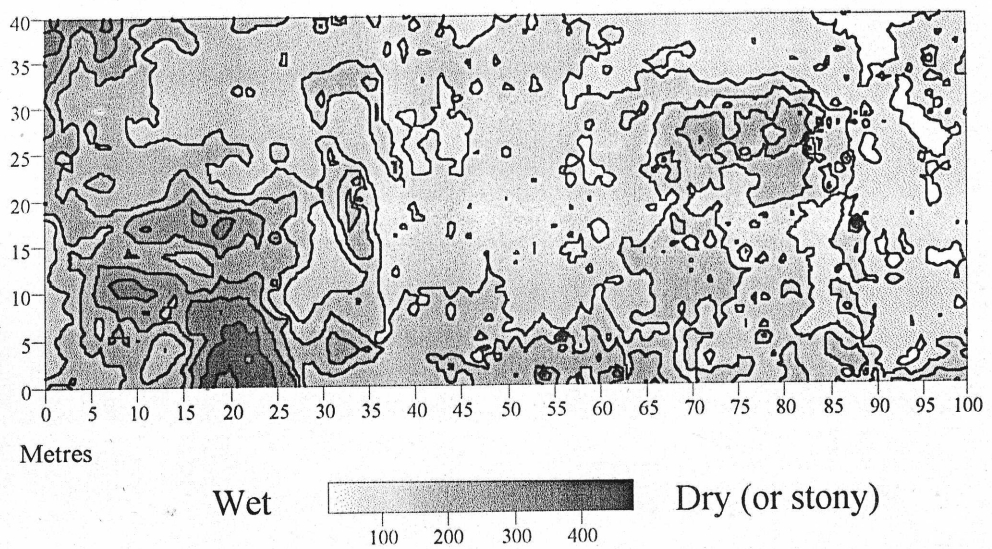


Figure 3. Resistivity survey [1 metre intervals]

Blakeney Eye Project - Overlay



Main site features [Chapel earthworks and fence]



Iso-resistivity 'contour' Map

Adjusted readings (Fig. 3) show the larger of the two cells that make up the building, but the smaller cell to the south is almost imperceptible. The wettest areas are within and immediately outside the smaller cell, and in the south-eastern sector of the surveyed area. The driest areas are mostly to the north-west.

The high resolution resistivity survey (Fig. 4) shows clearly the earthwork which constitutes the larger of the two cells, with the driest (darkest) area indicating the visible stonework. There are only traces of the smaller of the two rooms, even though little such distinction is visible to the eye

Magnetometer Survey

A fluxgate magnetometer was used to record small variations in the earth's magnetic field over the site. Readings were taken at one-metre intervals (4000 measurements) and a map produced (Fig. 5). There is no indication of the chapel building but a totally unexpected result is the straight line of very strong anomalies, with another line or patch of similar readings at right angles to it. These readings were compatible with buried ironwork and were later identified as part of the wartime defences.

Molehill Survey

The survey area was covered with clusters of molehills in various states of degradation, and a total of 954 were sampled (Fig. 6). Mole heaps were distributed across the site but with some blank areas which may be there for physical or archaeological reasons, or just by chance. From each heap a sample of 750 millilitres was sieved and the finds counted and (later) weighed. The remainder of each heap was checked visually for any unusual artefacts.

Maps were produced showing the distribution of the main finds: mortar, stones with mortar, seashells and slate (Figs 7 – 10). All these finds were heavily concentrated around the chapel building. Not illustrated, but with broadly similar distributions were brick and tile fragments, small pieces of coal or clinker, and a few metal fragments which included five wartime bullets. Only three pieces of pottery were found, none appeared to be as early as medieval. The weight of stones (without mortar attached) was also mapped and was found to be heavily concentrated around and to the south of the chapel: the area to the north produced very few. None of the stones were noticeably water-rolled as they would have been had they come from the beach; they appeared to have come from glacial deposits. A scatter of small pieces of chalk was also discerned; these are probably agricultural in origin, but might also be a natural component of the underlying gravel deposits.

The Main Findings

The contour and resistivity maps (Figs 2 & 3) show less correspondence than might have been expected. A thin soil developed on sand and gravel tends to be drier in the higher areas and wetter in the lower areas. With the notable exception of the chapel site, however, the reverse is often the case on the Eye: the low ground to the north-west, for example, is much drier than the relatively high ground to the south-west. The flat area to the north of the chapel has relatively constant resistivity; by contrast there is a rectangular area of drier ground south of the chapel, which has little correlation with the contour map.

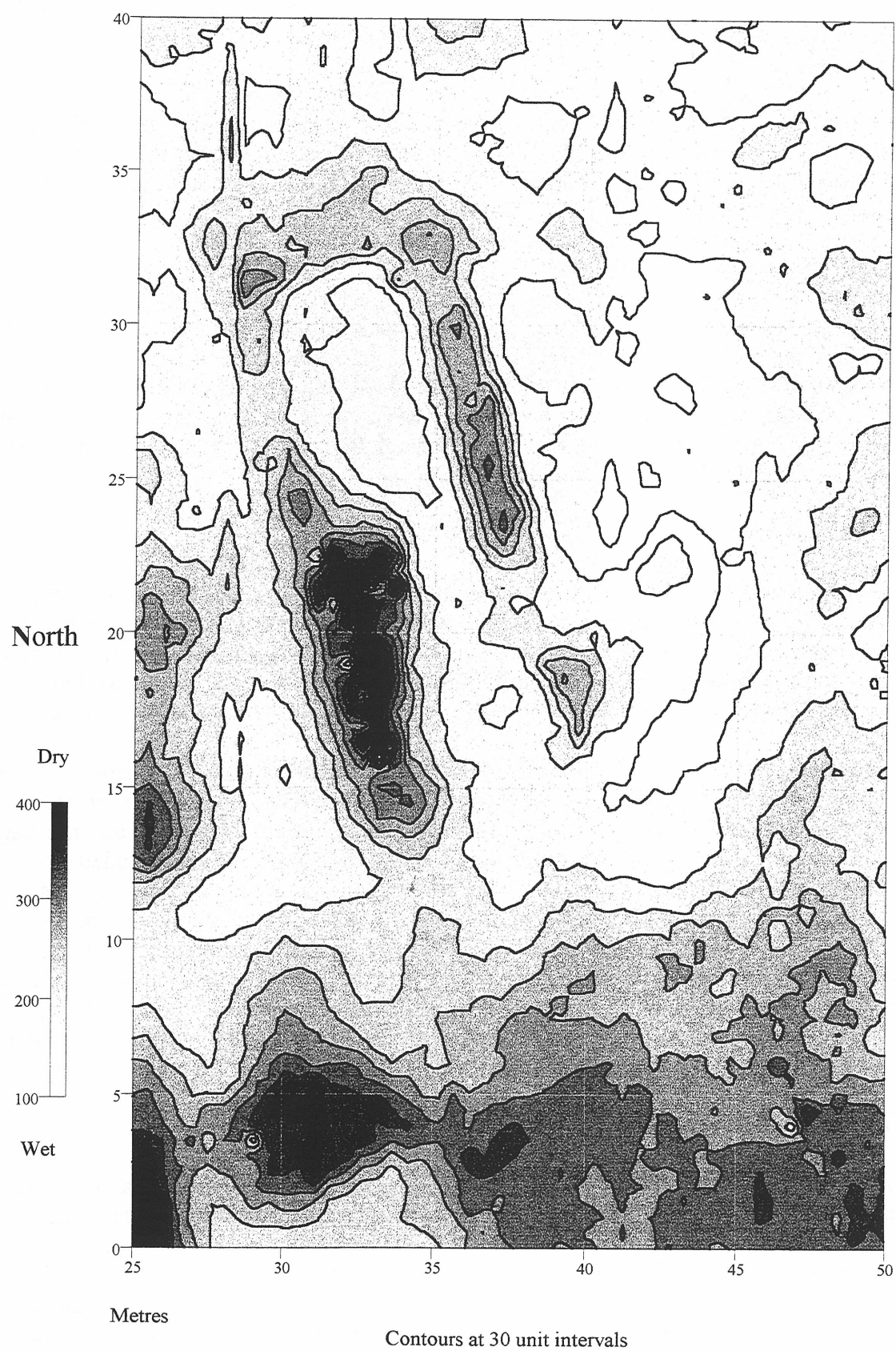


Figure 4. High resolution Iso-resistivity map of the chapel site.

The high resolution resistivity plan shows in dramatic fashion the difference between the two cells of the chapel. The larger, more northerly, one shows up strongly, the smaller one hardly at all. Such a difference is very likely to indicate that the foundations of the larger room are much more substantial than the other, even though this is not apparent from the surface appearance. It might be that the walls of the smaller room have been much more thoroughly robbed of their stonework, but this is unlikely as the form of the ruins – wall fragments showing through the banks of a low earthwork – is essentially the same for both. The most likely conclusion is that the smaller room was built in a different fashion, perhaps using less flint, which may indicate that it was built at a different time, and perhaps later.

The high resolution resistivity map indicates that the smaller cell has a western end even though the image is faint. There is no sign, however, that the main building had a western wall. Were there ever foundations here? The ground slopes away steeply where the wall should be located and on site it is easy to imagine the sea sweeping away this side of the Eye, taking part of the building with it. Downslope to the north-west is an area of very high resistivity barren of molehills. Could this be the remains of the western wall?

One portion of the stonework looks as if it might be a fallen piece of walling and the resistivity plot does nothing to dispel this. A gap in the dry readings that portray the northern wall might indicate a doorway, which is also indicated by an abrupt change in the visible stonework. There is also a suggestion of an inner division. It is probably pushing interpretation too far to see in Figure 4 an apsidal end to this larger room, and thereby an early church building.

The smaller cell appears to have a division through the middle which co-incides with some brick visible in the grass and in some of the molehills in this area. This brick division might have been a later insertion into the building or ruin – for sheep pens for example. The interior of this room (and to a lesser extent the main cell) is relatively damp which could possibly indicate water trapped above a buried floor.

From the high resolution resistivity map it can be seen that there is a clear break in the southern wall. By comparing the building outline (separate overlay) with the magnetometer map (Fig. 5) it can be seen that the metal fence cuts through the wall at this point. It would appear that the wartime construction of this fence caused the partial destruction of this southern wall.

The strong features of the magnetometer map can only be the result of buried metal objects, and it is very likely that they are the bottom parts of sawn-off metal posts that once formed part of a wartime metal (barbed wire) fence. The line of anomalies joins the seabank immediately to the north of the survey area and close by, sticking out of the path that runs along the embankment, are pieces of angle-iron which gave the same readings as those within the survey area. There are also other similar readings along the path at points where iron is not actually visible at the surface. The other end of the line across the chapel joins the path to the south-east of the survey area where the embankment is at a similar height to that at the northern end. Those who put the fence up appear to have cut off the north-eastern corner of the site, where the seabank is at a lower level, so that the fence could be kept on relatively high, level, ground.

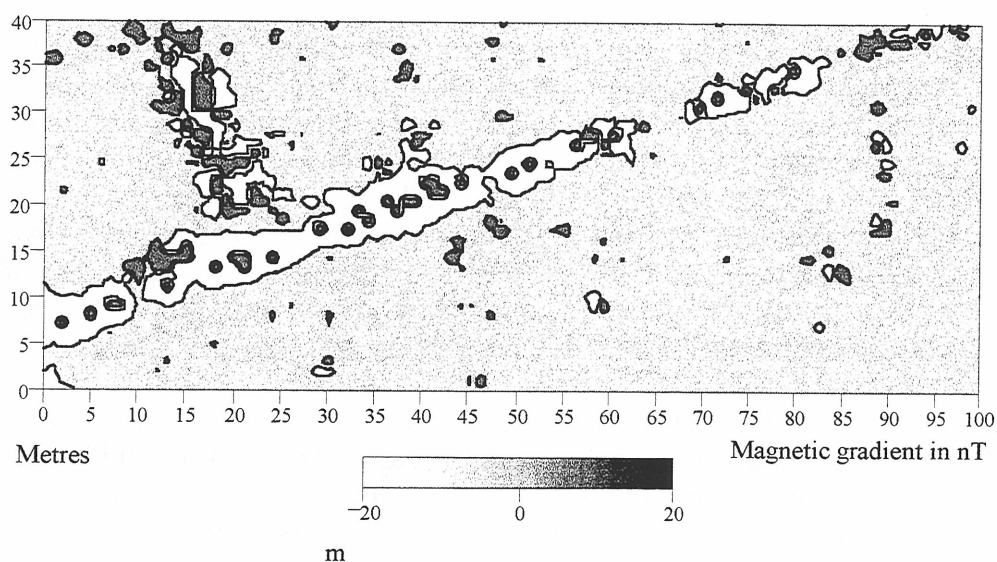


Figure 5. Fluxgate magnetometer survey

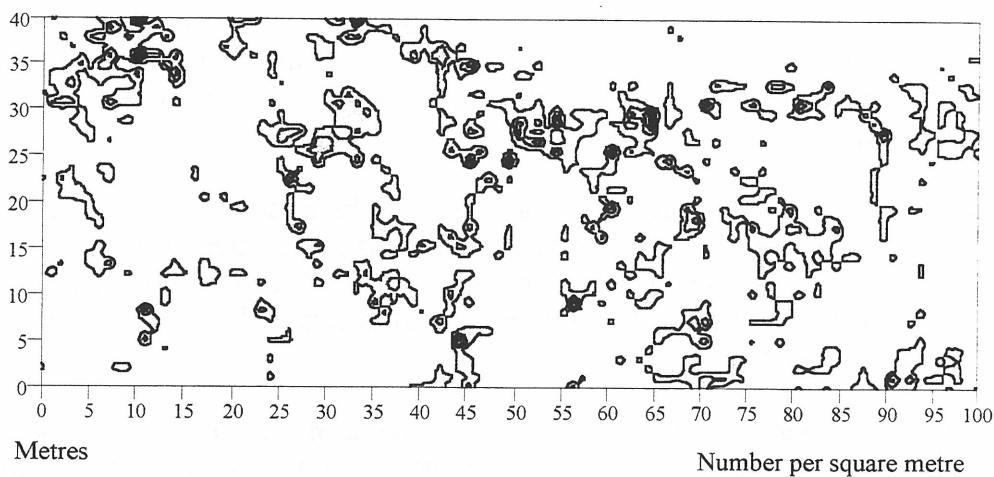


Figure 6. Molehill distribution

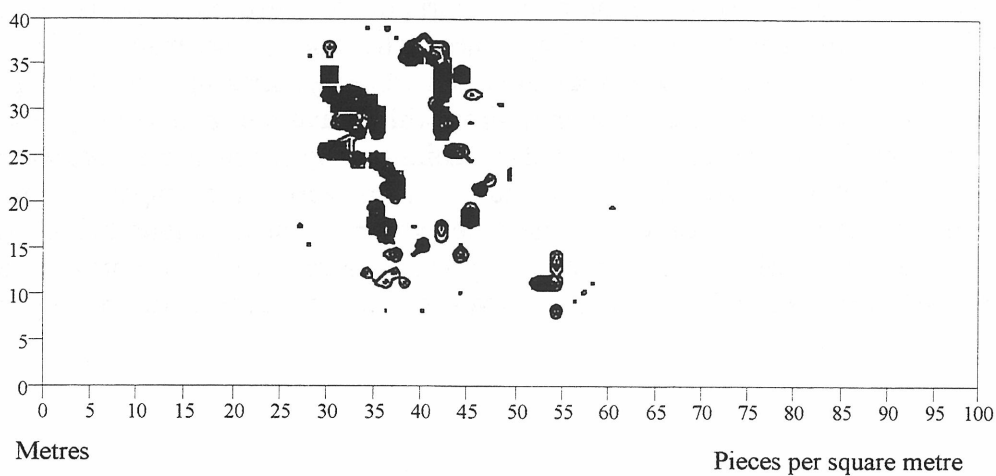


Figure 7. Molehill survey: mortar

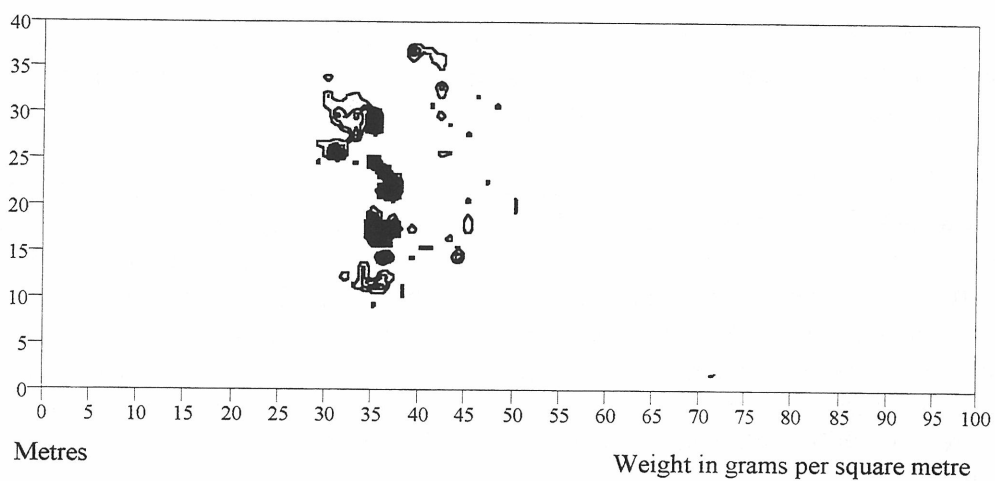


Figure 8. Molehill survey: Stones with mortar.

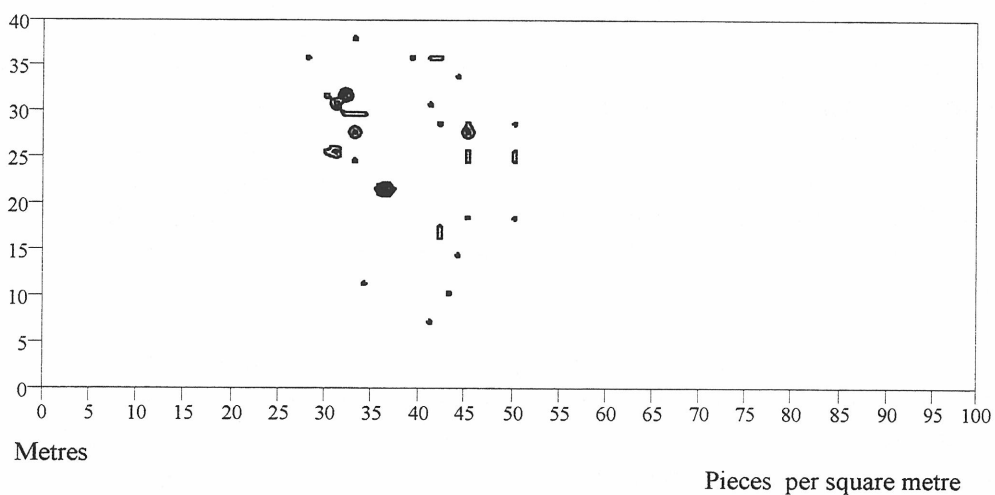


Figure 9. Molehill survey: Sea shells.

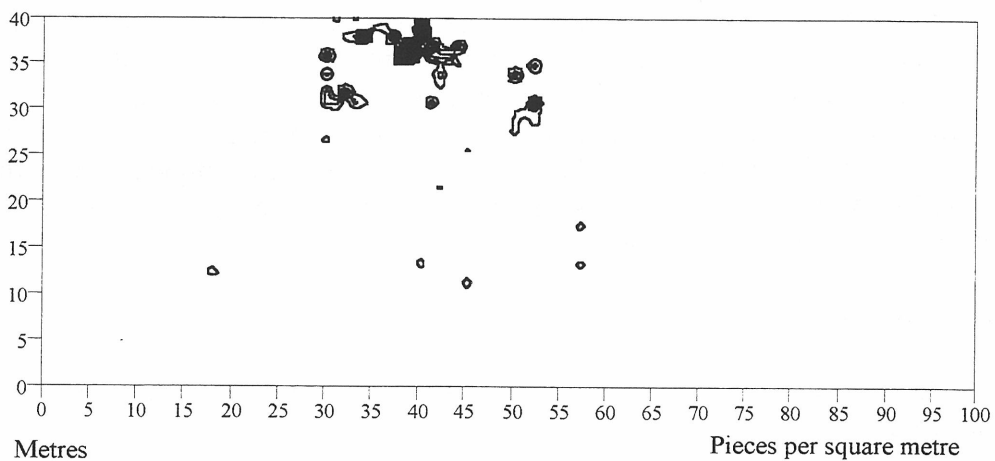


Figure 10. Molehill survey: slate

The other anomaly is at right angles to the fence but does not connect with it. The feature is wider than the fence and (unless it is a fence re-positioned more than once) could represent pits containing metal – perhaps barbed wire.

The distribution of molehills (Fig. 6) makes interesting comparisons with other maps. In a soil with constant characteristics the distribution might be random, but it is not entirely random on the Eye. There are no heaps within the smaller building, which has no obvious doorway, but there are within the larger, which tends to confirm that the open western end has no solid barrier below ground. Molehills generally avoid the area of buried wire, if that is what it is, and also the low, wet ground to the south-east as well as the dry, low ground to the north-west. Neither are there many on the wetter, but higher, ground to the south. If there is any direct relationship with resistivity then it is that mole heaps are more likely to occur in *average* moisture conditions.

Mortar fragments and flints with mortar attached (Figs 7 & 8) are found only in the immediate vicinity of the chapel building, principally within the larger building and to the east of the smaller one. Stones with mortar had the additional emphasis that they were found particularly in the vicinity of the 'west wall' which might possibly encourage the view that such a wall has been destroyed than that it never existed. The inescapable conclusion is that these mortar pieces have come from the walls of the building either during robbing activities or as products of natural weathering or accidental erosion (by cattle, for instance). The remnants appear to be similar to the material of the wall tops visible at ground level. The flints associated with the wall, either in it or nearby, are not typical beach-rounded stones, and some are very large. Perhaps all the walls were robbed to ground level at the time but there has been some further erosion at the western end of the north wall since then, leaving a few stones proud of the surface.

Seashells (Fig 9) were few but had essentially the same distribution as the mortar, which probably indicates that these shells were once part of the fabric of the building – indeed, one or two can still be seen in situ in the wall where they would have been used to strengthen the mortar. It is notable that no shells were found away from the building.

The slate fragments found, none larger than a 50p piece, were also associated with the building (Fig. 10) but the distribution was clearly different from the other building materials. Apart from a few pieces just inside the larger building, the slate was concentrated outside the south-eastern corner of the smaller cell. This suggests that roofing slate was stacked there for removal and that the present distribution is what remains from breakages. If slate was used to roof the building then it was unusual, for there is little slate in local villages and there would have been even less before the arrival of the railways. The chapel is described in documents as 'ruined' from around 1600 onwards and there is no evidence that it was ever rebuilt in relatively recent times. In the medieval period it was only religious and other important buildings that were roofed in slate as the carriage costs from slate quarries elsewhere in the country would have been very high.

Initial Conclusions

Though there is more work to be done, some initial conclusions can be drawn from the findings to date.

- The remnants of walling that can be seen at the surface probably constitute the whole building – there is no clear evidence that any extension exists which is not now visible. A narrow ‘wall’ running southwards from the chapel, reported by local residents in the 1970s, might have been parch marks associated with the wartime fence found by the magnetometer.
- The surveys suggest, more strongly than the visual evidence, that the two cells of the building may not have been built at the same time. The smaller room has less stonework in it, and probably less substantial foundations, than the larger one. This could indicate that the two cells were built at different dates, or perhaps they were built at the same time but had different functions – such as chapel and living quarters. If of different dates, then the smaller building might well be later – if earlier then its northern wall has been rebuilt as part of the larger structure.
- The survey has found very little of the original building material. If this was mostly flint then it has been carried away for use elsewhere (though some of it might be downslope to the west). Nevertheless, a timber-framed building on a flint base cannot be ruled out.
- Taking all surveys together, there is no evidence for any other stone building in the area surveyed. On the other hand, less substantial buildings, wooden huts for example, would not necessarily have left traces that could be recovered by the survey methods available.
- The lack of any medieval finds suggests that if the building is medieval in origin then it was not occupied by many people or for very long. Medieval house sites usually produce domestic debris, especially pottery. The lack of any such finds on the surveyed part of the Eye argues against a community of people living there, although negative evidence cannot rule out the presence of a one frugal person, for example.

In summary, some of the findings from this survey are compatible with the documentary evidence for the building being a medieval chapel. The structure lies east-west, the roof was probably of slate, and the foundations of the larger cell are relatively substantial. There was no evidence of habitation and nothing was found to contradict the traditional interpretation.

Further work

This is a preliminary report of the survey findings to date. More analysis has yet to be carried out, including the chemical analysis of soil samples from all the moleheaps. Botanical data may yet provide useful clues about earlier land use. It is also intended to pursue the documentary survey further and to compare these records with the results of the fieldwork. It is still possible that more can be deduced about the origin, function and destruction of the building before excavation becomes necessary. Map evidence for a ‘chapel’ on Cley East Eye suggests that some fieldwork should also be carried out on the eastern side of the Glaven channel.

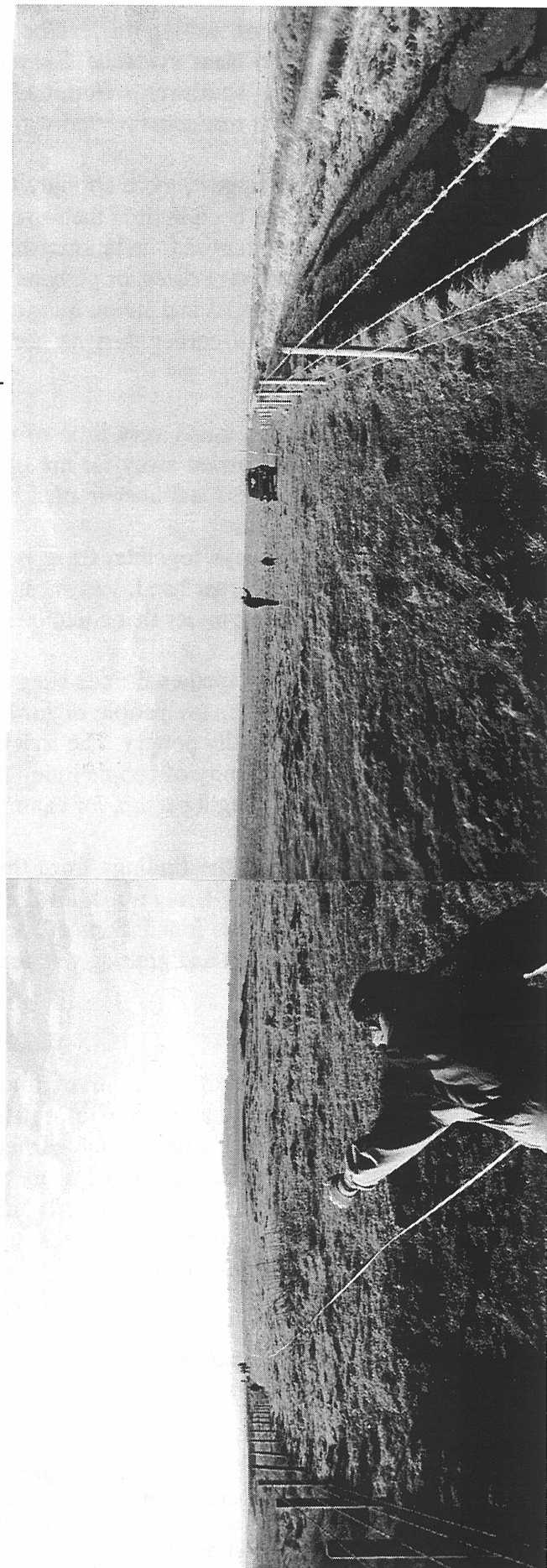
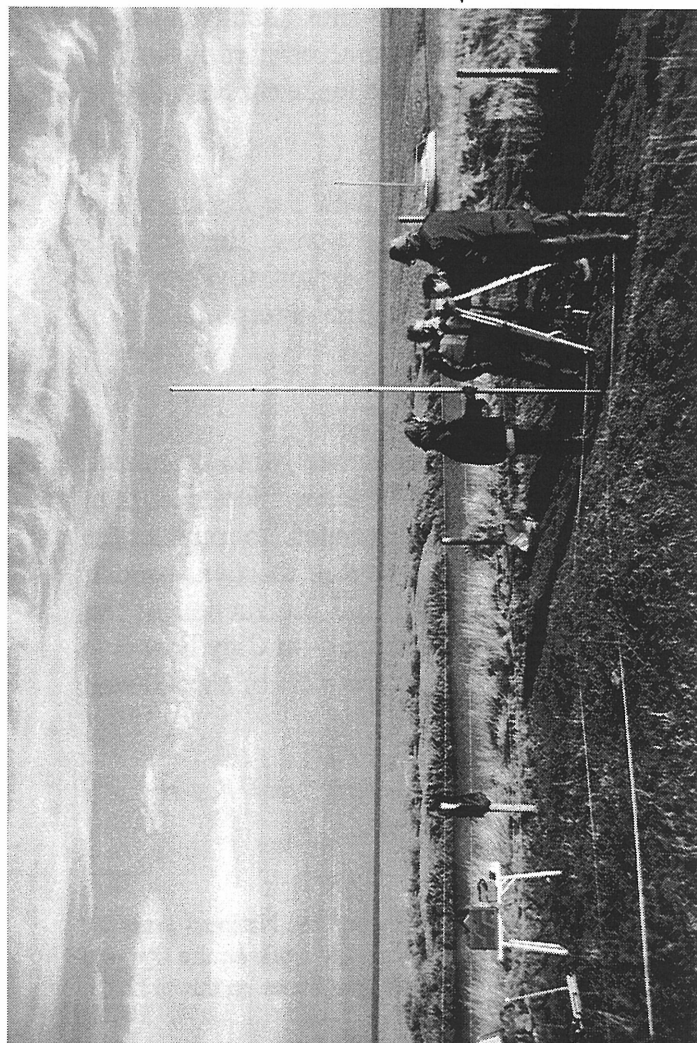
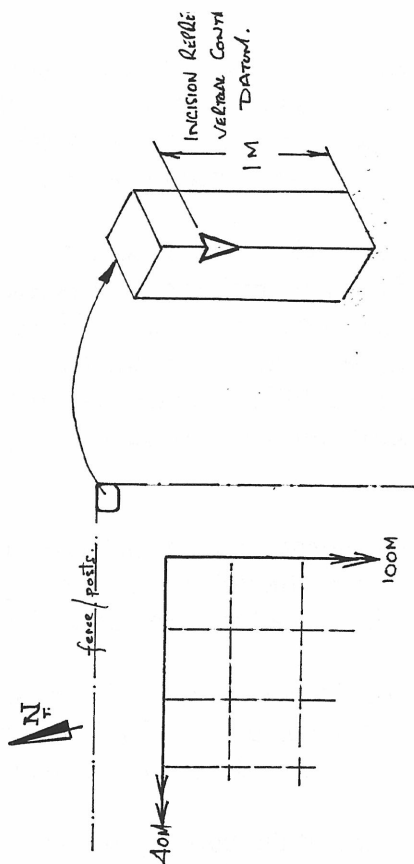
Peter Carnell founded and managed a major computer technology company, and has recently developed and applied geophysics equipment for archaeological investigations.

Acknowledgements

The author wishes to thank English Heritage for permission to survey the chapel building, the National Trust for their support of the project, and all members of the Society who have helped in the survey work on the Eye and in the subsequent recording and analysis of the finds. Those who experienced winter conditions on the site have expressed their sympathy with anyone obliged to live there in times past.

THE BLAKENEY EYE PROJECT

SITE SURVEY---ESTABLISHING GROUND GRID WITH
DATUM IN NORTH EAST CORNER OF FIELD.
(Note prominent mounds of building site and Church)

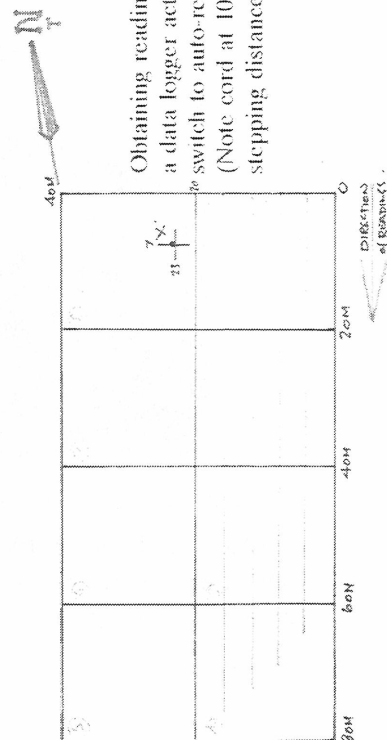


THE BLAKENEY EYE PROJECT

MAGNETOMETER SURVEY



SET-UP FOR EACH 20M x 20M GRID
(Note 8 off sectors on original ground grid)
Red moveable cord for N/S alignment and pegs
at 1M intervals to assist transfer to next traverse



Obtaining readings at 1M steps using
a data logger activated by a hand held
switch to auto-record values
(Note cord at 10M to verify correct
stepping distance at halfway point)



CALIBRATING SCALE AT CONTROL POINT 'X'

