

November 2000

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**CLAYTON HALL,  
CLAYTON-LE-WOODS  
LANCASHIRE**

**Archaeological Evaluation Report**

Clayton Hall, Clayton-le-Woods  
Lancashire

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Archaeological Evaluation Report

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## SUMMARY

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An archaeological evaluation was carried out by Lancaster University Archaeological Unit (LUAU) at Clayton Hall, Chorley Borough, Lancashire (NGR SD 5646 2205), in August 2000. The work was commissioned by the Environment Partnership on behalf of English Partnerships, and followed an earlier archaeological feasibility study, including topographical and geophysical surveys, by West Yorkshire Archaeological Services. The site contains a moat, moated platform, feeder channels, and two fishponds, all of which are components of a Scheduled Monument (SAM 13409). The work involved a palaeoenvironmental study of the northern pond and the northern section of the moat, and also a programme of evaluation trenching to examine the moat, ponds and feeder channels.

The study has revealed that the pond contained mainly organic muds and had generally poor preservation of the pollen, whereas the moat had generally good preservation of pollen and demonstrated the potential for pollen analysis. The study demonstrated an absence of pine, larch, and exotic tree species pollen from the lower moat fills, which suggests that the infill of the moat commenced before the eighteenth / nineteenth century when these trees were extensively planted.

Fourteen linear evaluation trenches were excavated, with trenches being placed across the moat and feeder channels, in one of the fish ponds, and across a geophysical anomaly adjacent to the northern feeder channel. Trenches were excavated by machine down to the top of significant archaeological deposits, with manual sample excavation thereafter; excavation was not conducted on the platform itself, with the exception of one trench in the extreme north-west corner.

The former course of the northern feeder channel was clarified, and sections were dug across the eastern and western arms of the moat. The latter confirmed that the moat had formerly been a very deep and impressive feature, but no proven medieval silting had survived in the area of the evaluation trenches. Further trenches towards the south of the site suggested that the southern part of the moat had never been as impressive as that to the north.

Given the complexity of water features revealed by the programme of evaluation, further trenching is recommended to determine the exact course of any moat, particularly to the south of the platform.

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## ACKNOWLEDGEMENTS

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The excavation was conducted by Andrew Bates, Richard Heawood, and Neil Wearing. Christine Howard-Davis studied the finds, and Emma Carter and Graham Suggett compiled the drawings. The report was written by Richard Heawood, and edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Lancaster University Archaeological Unit (LUAU) was commissioned to undertake an archaeological evaluation of Clayton Hall by the Environment Partnership, on behalf of English Partnerships, in advance of a proposed programme of landscaping of the site to improve access and ensure public safety. Clayton Hall was a seventeenth century house, demolished in contentious circumstances in 1976 after a period of neglect, standing on what is believed to be a medieval moated platform (WYAS 1998a, 2, 4). The site is listed on the Lancashire Sites and Monuments Record, and was designated a Scheduled Monument in 1978 (SM 13409).

### 1.2 SITE LOCATION, GEOLOGY, AND TOPOGRAPHY

1.2.1 The site lies 2km east of the centre of Leyland, and is centred at NGR SD 5646 2205 (Figure 1). It is ringed by housing estates to the north and west, with pasture surviving to the east and south. The land to the north is largely flat, but the ground slopes away progressively to the south-west across the site, towards Bryning Brook. Most of the platform lies at a height of 69.5m OD.

1.2.2 The solid geology of the area consists of red and green mudstones, but this is obscured by a thick covering of glacial drift (WYAS 1998a, 11-12). The drift is known to consist of boulder clay to the west of the site (*ibid*) but, in the area of the platform and moat, consists of deposits of relatively stone-free clay overlying reddish brown sand.

### 1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.3.1 The archaeological and historical background of the site has been thoroughly considered in the earlier archaeological feasibility study (WYAS 1998a), which describes and assesses the available documentary and historical sources in some detail. A summary of the background history of the site is presented below.

1.3.2 **Roman:** the site of Clayton Hall is c500m to the east of the Wigan to Preston Roman road, which seems to have continued in use through until the thirteenth century, when it was called Waingate (Hallam c1985, 49).

1.3.3 **Medieval:** the earliest mention of Clayton was in c1160, when the *mesne* including Clayton was granted to Richard Fitton by Richard de Bussel, Baron of Penwortham (Lumby 1936). Moated sites such as Clayton Hall typically date from the thirteenth or fourteenth centuries, and fourteenth century pottery has been found on site (Lewis 1978, 54-5), which would tend to suggest that the moated site was in place by that date. In the thirteenth century Clayton-le-Woods was on the western periphery of the Penwortham demesne forest, and it is probable that the moated site was one of the forest assarts (*ibid*).

1.3.4 **Post-medieval:** in the seventeenth century the house was rebuilt, and was evidently of some stature, as it was recorded in 1666 as having 14 hearths (Bolton



1985, 41), and James Anderton II's *inquisition post mortem*, dated 1658-1660, records the house, and possibly also the home farm, as having 31 chambers inclusive of out-buildings (*op cit*, 42). The land was separated from the hall in the 1960's; the hall ceased to be occupied in 1968 and was demolished in 1976 (WYAS 1998a).

#### **1.4 PREVIOUS WORK**

- 1.4.1 A small archaeological excavation, consisting of a trench across the western moat arm, and possibly also a trench at the southern terminus of the east arm, is known to have been carried out by Mr B Edwards, former Lancashire County Archaeologist, in 1973. The surviving archive consists only of photographs in colour slide format (WYAS 1998a, 33).
- 1.4.2 An archaeological feasibility study was undertaken by West Yorkshire Archaeological Services (WYAS 1998a), which involved the implementation of a desk-based study, an earthwork survey of the moat and platform and a geophysical survey of the platform and environs. The documentary study established the basic history of the site (outlined above (*Section 1.3*)), the earthwork survey recorded the character of the extant moat sections and associated ponds. It also recorded a series of lynchets and ditches to the south-west of the moated site, which were potentially part of a medieval agricultural landscape. The geophysical survey examined the areas around the moated site and identified a rectilinear anomaly to the east of the eastern arm of the moat which it was suggested may be a building or an enclosure wall.

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## 2. METHODOLOGY

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### 2.1 PROJECT DESIGN

- 2.1.1 The fieldwork was conducted in accordance with a project design (*Appendix 2*), which was in accordance with the project brief (*Appendix 1*). The project design provided for a programme of palaeobotanic assessment of the northern pond and moat section and also evaluation trenches to investigate the extent, survival and character of the moat, fish ponds and feeder channels.
- 2.1.2 The trench positions defined in the project design were subject to limited adjustment in order to minimise disturbance to trees, and to the archaeological features. The final layout of the trenches is defined in Figure 4. The mechanical excavator defined in the project design was a mini-digger, but in the event it was evident that this would have insufficient reach and would have caused more disturbance to the features than a larger machine. In agreement with the client and English Heritage, a 12 ton 360° tracked machine was used, which was able to excavate cleanly without unnecessary damage to the site. In all other respects the work was undertaken in accordance with the project design.

### 2.2 PALAEOENVIRONMENTAL EVALUATION

- 2.2.1 **Coring:** a 30mm bore Eijkelamp gouge auger was used to retrieve cores from the northern pond and the north-eastern moat section (Fig 2). Eight cores were taken in a transect across the north-eastern moat section and a further transect of four cores was undertaken through the northern pond, extending from the bank to a point 4m in the direction of the pond centre. The sediment types were recorded in the field and are described and represented graphically (Fig 3, and Tables 1-4 (*Appendix 3*)).
- 2.2.2 Possible material for radiocarbon dating was retrieved from the central area of the moat close to the transect, using a Russian-type chamber sampler (Jowsey 1966). Two small pollen samples were taken from this core at depths of 0.795-0.805m and 0.995-1.005m). Two small pollen samples were collected from pond core 4 at depths of 0.25m and 0.75m.
- 2.2.3 **Pollen preparation:** the samples were prepared chemically for pollen analysis using the standard techniques of sodium hydroxide, hydrofluoric acid and acetolysis (Faegri *et al* 1989). The samples were then mounted in silicone oil and examined with an Olympus BH-2 microscope using x400 magnification routinely and x1000 for critical grains. Pollen grains were counted and identified until at least 100 pollen grains had been recorded on two slides. This was done to reduce the possible effects of differential dispersal under the coverslips (Brooks and Thomas 1967). Pollen identification was carried out using the standard keys of Faegri *et al* (1989) and Moore *et al* (1991) and a limited reference collection held at Lancaster University Archaeological Unit. The limited nature of this collection restricted the identification of the more unusual grains. Cereal-type grains were defined using the criteria of Andersen (1979); indeterminate grains were recorded using groups based on those of Birks (1973). The data are presented in Tables 3

and 4 (*Appendix 3*) as percentage values of the pollen sum which includes all land pollen and fern spores recorded.

- 2.2.4 **Macrofossils:** additional pollen samples from the cores and an additional sample from the moat section were soaked in water, sieved and the residues scanned with a Leitz Wild stereozoom microscope for the identification of plant macrofossils.

### 2.3 EVALUATION TRENCHING

- 2.3.1 The evaluation consisted of the excavation of 14 trenches, of varied size, in locations agreed by LUAU, Lancashire County Archaeological Service (LCAS), The Environment Partnership, and the Conservation Officer of Chorley Borough Council (Fig 4). A 12 ton 360° tracked excavator was used to remove topsoil down to the surface of the natural subsoil, or to the top of significant archaeological deposits. The trenches were then cleaned by hand, and sample manual excavation was carried out where appropriate.

- 2.3.2 Manual excavation was undertaken in a stratigraphic manner, and features and deposits were recorded using *pro forma* context sheets based on those designed by the MoLAS and English Heritage's Centre for Archaeology (CFA). Sections were drawn at a scale of 1:20, and a photographic record was created in colour and black and white print formats. Planning was carried out using a total station and data logger, allowing digital plans to be produced, which were superimposed with a digital topographic plan of the site provided by the Environment Partnership (Figs 4 and 9).

### 2.4 FINDS STRATEGY

- 2.4.1 All artefacts and ecofacts were recorded using the same system as the contextual information, and were handled and stored according to standard practice, following current Institute of Field Archaeologists' guidelines. The assemblage was subject to analysis by the LUAU in-house finds specialist and the results are presented in *Section 4.16*. An environmental soil sample (bulk sample of 10 litres volume) was collected from one feature. However, the potential for the survival of significant macrobotanical evidence appeared limited, because the majority of the cut features had been infilled in the post-medieval or modern periods.

### 2.5 ARCHIVE

- 2.5.1 A full archive to professional standards, following current English Heritage guidelines (English Heritage 1991), has been compiled in accordance with the project design. The project archive represent the collation and indexing of all the data and material gathered during the course of the project, and includes *pro forma* recording sheets, the photographic archive, and accurate digital plans and sections.
- 2.5.2 Following discussion with the client, the material archive will be deposited with the Lancashire Museum Service. Arrangements will be made for the paper archive to be deposited with the Lancashire Record Office (Preston).

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## 3. PALAEOENVIRONMENTAL EVALUATION

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### 3.1 INTRODUCTION

3.1.1 **Objectives:** a programme of coring and analysis was undertaken of waterlogged deposits within the northern pond and also the northern section of the moat in order to evaluate the environmental potential of the deposits. The objectives of the programme were:

- to obtain a profile of the pond and moat;
- to provide an assessment of the type and condition of the sediments preserved in both the moat and the pond;
- to retrieve organic material from the deepest deposits for radiocarbon dating.

### 3.2 PALAEOENVIRONMENTAL ASSESSMENT

3.2.1 The type of the sediments recorded in each core is described and represented graphically (Tables 1 and 2, (*Appendix 3*)). The results of the pollen evaluation are given as percentage values in Figure 3 and Tables 3 and 4 (*Appendix 3*).

3.2.2 **Stratigraphy and profile of the moat:** eight cores were taken in a transect across the north-eastern moat section. The deposits from the central part of the moat are a coarse Gytija (organic mud) overlying sand. The profile of the moat recorded by this stratigraphic survey was initially steep-sided at the inner edge before sloping down relatively gently to a depth of 1.50m below the surface in the central part.

3.2.3 **Stratigraphy and profile of the northern pond:** a transect of four cores was undertaken through the northern pond, extending from the bank to a point 4m in the direction of its centre. The deposits from the pond were more minerogenic than those from the moat and there was less than 0.40m of minerogenic/organic mud, except in Core 1, close to the edge, where 0.60m was recorded. These minerogenic/organic muds overlay clay, which had the appearance of being a natural deposit. The pond is surrounded by a bank and the cores suggest that it was relatively shallow and flat bottomed and probably exploited the natural clay to make it watertight.

3.2.4 **Pollen evaluation of the moat:** the results of the pollen analysis of two samples from the moat (at 0.795-0.805m and 0.995-1.005m) are given in Table 3 (*Appendix 3*). The samples contained abundant pollen, with mixed to good preservation which would make full analysis feasible. The absence of pollen from pine, larch, and exotic tree species suggests that the infilling of the moat commenced before the eighteenth / nineteenth century when these trees were extensively planted. The pollen spectra from both samples indicate that the area was not well wooded but at 0.995-1.005m there is greater evidence of some alder and hazel woodland than at 0.795-0.805m. Pollen from herbaceous taxa is between 42% and 61% and suggests mainly pastoral use of the landscape, although there is some evidence of cereal, hemp/hops (*Cannabis/Humulus*-type), and flax (*Linum usitatissimum*) cultivation. It is difficult to distinguish between the

pollen of hemp and flax and therefore they are recorded as a single type (hemp/hop).

- 3.2.5 **Pollen evaluation of the northern pond:** the results from the two pond samples (at 0.25m and 0.75m) are given in Table 4 (*Appendix 3*). Both had abundant pollen, but at 0.75m the preservation was poor, with 26% unidentifiable pollen grains recorded; this, together with the high value of alder pollen, suggests that at least some of the pollen was secondary in nature. Alder pollen was easily recognisable even when the preservation was poor and grains were crumpled. The upper sample suggests that alder, with some hazel, was growing in the area, with a considerable expanse of grassland (53% herb pollen and fern spores). The low value of cereal-type pollen and the type of herb taxa, eg *Plantago lanceolata*, suggests that a pastoral landscape occurred close to the pond. The absence of pine and larch pollen again suggests the possibility of a date before the late-eighteenth century date for the samples.
- 3.2.6 **Plant macrofossils assessment of the moat samples:** the samples from the moat confirmed the field identification of a coarse Gytija (organic mud) with some silt, sand and plant fragments. Only very few seeds and some insect remains were recorded in the small samples assessed. The absence of true aquatic plants suggest that the moat was kept free of water plants.
- 3.2.7 **Plant macrofossils assessment of the pond samples:** this confirmed the field identification of clay with some silt, sand, gravel and a little unidentifiable plant debris in the lower sample (0.75m). The upper, more organic, mud (0.25m) had a number of well-preserved rush (*Juncus*), water buttercup (*Ranunculus*), and spiked rush (*Eleocharis*) seeds but clay was a significant component. The seeds recorded suggest an area of reedswamp around the pond. As with the moat samples no seeds from true aquatic plants were found, suggesting that the pond was kept free of water plants.

### 3.3 CONCLUSION

- 3.1.1 **Pollen Assessment:** the assessment of the pollen suggests that material has accumulated in the moat for some time since the feature was first cut. Although the evidence from the archaeological evaluation indicates that the moat has been recut and is heavily contaminated with post-medieval material, the pollen evidence suggests that the lower deposits predate the late eighteenth century. This allows the possibility of studying the local ecology immediately adjacent to moat; ditches and moats are known to have a limited catchment area and so theoretically may lead to a greater understanding of domestic and farming cultivation from the immediate environs. However, their closely controlled hydrological regimes, such as feeder streams and ditches, will cause problems with interpretation of the pollen data. The possible introduction of secondary pollen into the sediments, similar to that in flood plain deposits, is potentially a problem. In addition, the artificial nature of moats may result in the inwash of pollen from unstable banks, adding further problems to the interpretation of the data (Moore *et al* 1991, 21-22). Weighed against these difficulties are the advantages of studying the land use around a rural medieval and post-medieval settlement in Lancashire, given that in the North West few moated sites have been analysed palaeoenvironmentally and

then usually only for plant macrofossils and insects. The only medieval moated site in the North West where detailed environmental analysis has been undertaken to date is at Old Abbey Farm, Risle, Cheshire (Carrott *et al* 1998 and LUAU 1999). This provided information about the local ecology near the moat, but since no pollen was analysed, it provided none about the wider context. Sites from the North East have provided mainly plant macrofossil evidence, but not pollen analytical evidence as waterlogged sites are rare (Huntley and Stallibrass 1995, 64-81). Natural medieval and post-medieval deposits in general are rare in Lancashire, due to the destruction of peat bogs in the nineteenth and twentieth centuries, and lake deposits are not common. The pollen assessment of the samples from the pond suggested, as did the stratigraphy, that little organic material has been allowed to accumulate in the pond.

- 3.1.2 ***Plant macrofossil evaluation:*** the samples assessed provided little evidence of plant macrofossils except to suggest that both the pond and the moat were kept free of aquatic plants. However, the actual size of the samples was very small and therefore the results may be unrepresentative.

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## 4. EVALUATION RESULTS

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### 4.1 INTRODUCTION

4.1.1 Summary results of the evaluation trenching are presented below. The context list is presented in *Appendix 4*, and the trench locations and features are shown graphically in Figure 4.

### 4.2 TRENCH 1

4.2.1 Trench 1 was positioned in order to recover the original profile of the ditch thought to have acted as the feeder stream for the moat. The trench measured 8.0m long x 1.9m wide. It was excavated to a maximum depth of 2.87m but, as it crossed an open ditch, the sections were less than 1.3m high. The trench was aligned east / west.

4.2.2 The original channel [197] measured 7.85m wide x 2.87m deep. On both sides, the upper edges of the channel sloped downwards at a relatively gentle gradient to a break of slope, before dropping steeply to the flat base, at 69.06m OD. The cut was filled with yellowish brown silty clay [105] (Figure 5).

4.2.3 The channel had subsequently been recut on its western side, to allow for the construction of a stone-lined drain. This recut [103] was 1.36m wide, and had been dug down to the base of the original channel; it had near vertical sides, and had been backfilled with loose greyish brown gravel. The drain itself had been constructed from large stone slabs measuring up to 0.80m x 0.56m x 0.10m, but had partially collapsed in antiquity. A fill of yellowish brown silty clay had accumulated over the drain from the west above the gravel backfill.

4.2.4 A further recut was recorded on the eastern side of the channel, truncating both the gravel backfill of the drain and the silty clay fill above. This recut [133] was a maximum of 1.6m wide, and had again been dug down to the base of the original channel. It had a U-shaped profile, with steep concave sides and a rounded base. The single fill consisted of very soft waterlogged black silt and organic debris which was largely undecayed, and continued up to the bottom of the open ditch which exists today.

4.2.5 The northern edge of a further cut feature [101] was revealed in the western baulk of the evaluation trench, after the original channel and recut [103] had been excavated. The feature measured at least 3.28m x 2.00m, extending beyond the limit of excavation to the west and south. The northern side sloped downwards at a gradient of  $c45^\circ$  to a maximum depth of 2.79m, and was filled with a deposit of grey clayey silt. It was impossible to be certain whether the feature was a pit or ditch because only one side was present within the evaluation trench, and the presence of recut [103] hampered the establishment of a reliable stratigraphic relationship between the feature and original channel cut [197]. Nevertheless, the profile of the north edge of [101] suggests that it may have been a linear feature aligned east / west. It was certainly earlier than the north / south recut [103], and there are some indications that it also predated the original north / south channel [197].

### 4.3 TRENCH 2

- 4.3.1 Trench 2 was positioned to establish whether there was formerly a link between the northern arm of the moat and the putative feeder stream to the north. The trench measured 6.9m long x 1.9m wide, and was excavated to a maximum depth of 1.5m; excavation was not continued below this depth for reasons of safety, since it was agreed with the client that this trench would not be stepped, in order to minimise disturbance to the adjacent pathway. The trench was aligned north / south.
- 4.3.2 A thick deposit of mid grey clay silt with <1% small brick fragments was revealed in the base of the trench at the northern end, at a depth of 1.3m below present ground level. This continued to the northern limit of excavation, its position and character suggesting that it was a fill of the feeder channel. The fine particle size of the sediment suggested that the deposit might have been the product of natural silting, whilst the presence of brick suggested deposition in the post-medieval or modern periods. The deposit was at least 0.24m thick and was not bottomed.
- 4.3.3 Above, a deposit of firm yellowish brown clayey sand containing 2% small stones and <1% brick fragments was recorded. It was at least 0.56m thick, and was interpreted as a dumped deposit intended to infill the channel. A deposit of brown silty sand, with brick and stone rubble, lay above, and this had been surfaced successively with tarmac and, comparatively recently, with loose grey road stone.
- 4.3.4 The deposits recorded in Trench 2 strongly suggested the deliberate post-medieval or modern infilling of the channel in order to create a causeway.

### 4.4 TRENCH 3

- 4.4.1 Trench 3 was positioned to establish the moat profile, and to determine whether any early silting deposits survived. Trench 3 was aligned east / west and measured 6.2m long x 4.6m wide x 2.8m deep; it had to be stepped in because of the depth of the moat at this point. The trench length of 6.2m represented the maximum reach of the 12 ton mechanical excavator when positioned on the western edge of the extant moat.
- 4.4.2 The present moat earthwork was c10m wide and Trench 3 confirmed that the moat cut [198] was at least 6.2m wide, and that it was here 2.8m deep, the bottom being at 67.26m OD (Figure 5). The western side of the cut was initially very steep, but sloped more gently to the base after a break of slope c1m down; the base of the cut was flat and at least 2.1m wide. The basal fill [160] consisted of black silty clay 0.56m deep, probably of waterlain origin, with very occasional inclusions of post-medieval pottery. This was sealed in turn by a thin band of dark brown silty clay [159] and a thin deposit of black organic silty clay [158], the latter containing the base of a small rectangular wattle object, possibly a basket, and a sherd of post-medieval pottery. Above was a deposit of sticky dark brown silty clay, and finally a thick, mixed deposit of clay silt, undecomposed organic material, and modern debris including bricks and a television aerial. This final fill appeared to be the product of the natural deposition of leaves and twigs from overhanging trees, combined with occasional modern fly-tipping.



- 4.4.3 Because of the absence of medieval fills, it must be assumed that the moat was cleaned out, prior to being filled in the post-medieval period. This may in turn have produced a profile which was rather different from that of the moat when first cut.

## 4.5 TRENCH 4

- 4.5.1 Trench 4 was positioned to establish the location of the eastern limb of the moat; unlike Trenches 1 and 3, no trace of any ditch or channel remained here as an extant earthwork. The trench was 17.0m long and a maximum of 2.54m deep, and again had to be stepped because of the depth of the cut features encountered, being 6.65m wide above the step, and 1.9m wide below. The trench was aligned north-west / south-east.
- 4.5.2 A substantial ditch [196] was revealed at the north-western end of the trench, aligned north-north-east / south-south-west. It measured at least 3.8m wide x 1.3m deep, although a further 1.1m of overburden on top of the ditch fills suggested either that the ditch had been horizontally truncated, or that the ground level had been considerably built up after the ditch had infilled. The cut had a wide U-shaped profile, with sides angled at a relatively gentle gradient, and a flat base, at 67.21m OD. The basal fill of mid grey clay [195], possibly a waterlain deposit, contained <1% small and medium inclusions of red brick, suggesting that this earliest extant fill was of post-medieval date. Four further fills were identified and were alternatively of slumped natural sand and clay.
- 4.5.3 A second large ditch [189] was found 2.1m to the south-east of [196], on roughly the same alignment. It measured 2.6m wide x at least 0.96m deep, and was not bottomed because of safety considerations; excavation stopped at 67.83m OD. The feature was covered by some 0.85m of overburden, and was of irregular profile, but the lower sides were near vertical. The ditch was filled with a combination of grey sandy clay and slumped natural sand, and contained large fragments of tile, post-medieval pottery, and industrial residues. Ditch [189] was a later feature than [196], truncating a layer of light brownish grey sandy clay which had been deposited over the top fill of [196].
- 4.5.4 A further linear feature was recorded towards the south-eastern end of Trench 4, some 2.75m south-east of ditch [189]. This cut [182] was almost parallel to the two ditches to the north-west, but its alignment was closer to being north-east / south-west. The feature [182] was at least 2.6m wide and was 1.02m deep, being sealed by 0.7m of overburden. The south-east side of the cut truncated natural clay and was easily distinguished for the full depth of the feature, but on the north-west side, the cut was only discernible for 0.26m above the rounded base. The bottom of the cut was found at 68.47m OD, and contained a single brownish grey clay fill 0.2m thick; above, the feature was filled by a thick deposit of mid grey sandy clay [180], which appear to continue over the north-west side of the cut and extend for the full length of Trench 4. One explanation for the lack of a north-west edge to [182] is that a terrace was cut down into the natural clay, aligned with the south-east edge of [182], and this truncated the tops of the other features in the trench. Such a terrace cut may have been made either at the same time as [182] was dug, or subsequently. No finds were found within the fill of linear feature [182], but it

appears to have stood largely open at the time of the deposition of layer [180], by which time ditches [189] and [196] had become completely filled.

- 4.5.5 None of the three linear features recorded in Trench 4 were of the same massive dimensions as the moat limb investigated to the north (Trench 3), but the north-western edge of ditch [196] may correspond to the western edge of the moat to the north, whilst ditch [196] and the moat cut [198] (Trench 3) had both been cut to almost the same depth (67.25m OD).
- 4.5.6 At the south-east end of Trench 4, a cobbled surface was recorded immediately underneath the topsoil. The cobbles were of waterworn sandstone, up to 0.16m in diameter, and had been laid on a bed of clean brownish yellow sand. The north edge of the surface was recorded, lying on an east/west alignment, and continuing across the trench for some 6m; to the south, the cobbles continued beyond the limit of excavation. The surface was stratified above all three of the infilled ditches recorded in Trench 4.

## **4.6 TRENCH 5**

- 4.6.1 Trench 5 was sited to establish the location of the southern limb of the moat, as potentially indicated by the geophysical survey (WYAS 1998b). The trench was 8.0m long, and was excavated to a maximum depth of 2.22m. Because the depth exceeded the maximum depth for unshored excavation, the trench was stepped in; the width above the step was 3.6m and 1.9m below. The trench was aligned north-north-west / south-south-east.
- 4.6.2 The north-west edge of a deep cut feature [174] was recorded towards the south of the trench. The cut was at least 4.45m wide, at least 1.3m deep, and was sealed by 1.0m of overburden. The north-west side sloped down gently at a gradient of c4:1 (x:y), and the base of the feature was not encountered at the maximum depth of the trench (2.3m below ground level). To some extent the apparent gentle gradient of the north-west edge was a product of the oblique angle at which Trench 5 crossed the feature. The lowest fill within the trench was a deposit of organic greyish-brown clayey sand, and it was overlaid by fills of yellowish brown sand and brown sandy clay. Excavation stopped at 67.27m OD, and no finds were recovered.
- 4.6.3 Cut [174] may represent the north-west edge of a substantial ditch aligned north-north-east / south-south-west, but the feature extended beyond the southern limit of excavation, and was not bottomed, so its plan form is uncertain.

## **4.7 TRENCH 6**

- 4.7.1 Trench 6 was positioned to establish the location of the western limb of the moat at its southern end. The trench was aligned north-north-east/south-south-west, it was 9.9m long and was excavated to a maximum depth of 2.3m. In order to excavate below the maximum depth allowed for unshored excavations (1.25m) the trench was stepped in; the trench was 3.7m wide above the step and 1.9m wide below it.

4.7.2 A substantial ditch was revealed, aligned east-north-east / west-south-west, thus crossing the trench at an oblique angle. This ditch [168] was c4.5m wide and 1.46m deep, but was sealed by a further 0.9m of overburden, and may have been subject to some horizontal truncation. It had a wide U-shaped profile and a gently rounded base (at 66.34m OD) with sides sloping at a gradient of 2:1 (x:y). A lower fill of mid grey clay [166], possibly waterlain, had been covered by an upper fill [164], which contained alternating lenses of grey clay and sandy clay. Both deposits had been subject to leaching, and no finds were recovered, with the exception of the blade of a wooden spade (Figure 8), found close to the upper interface of [164]. The southern edge of the ditch had been truncated by the cut for a rough stone drain [163].

## 4.8 TRENCH 7

4.8.1 Trench 7 was positioned to establish the original edge of the pond at the south-west corner of the site, and to determine whether any early silts survived. The original proposed trench location, in the middle of the north edge of the pond, proved impractical; the drop into the pond from the north was too great for the machine to access the pond base. An alternative approach from the west was also impossible because of the risk of damage to exposed tree roots, and because of the presence of soft deposits on this side of the pond which would not have supported the machine. Consequently, the trench was excavated in the north-west corner of the pond and aligned north / south. It measured 6m long x 1.9m wide and was measured to a maximum depth of 1.1m.

4.8.2 Over much of the trench, a black fill of undecomposed organic debris was found to lie within a very sharply defined cut through reddish brown natural clay. This indicated that the pond had been recently dredged out, and, in places, completely removed any earlier pond cut. However, towards the north and east edges of the trench, a deposit of mid greyish brown clay silt was recorded, which probably represented the fill of an older pond. This deposit was a maximum of 1.5m thick, where it rose up following the northern edge of the earlier pond cut. The top of the earlier cut coincided with the position of the present north edge of the pond; however, the earlier north edge appeared to be slightly steeper, albeit having an irregular profile, which in places dropped to a gradient of 2:3 (x:y). The early pond appeared to be c0.3 m deeper than the present one where excavated, with a base at 65.51m OD, giving a total depth from the top of the southern edge of some 1.5m (the depth from the top of the southern side is cited because this is the lowest edge of the pond, with the exception of the out-flow in the south-eastern corner). It should be noted, however, that the pond was probably deeper in the middle than close to the western edge, where Trench 7 was excavated.

## 4.9 TRENCH 8

- 4.9.1 Trench 8 was sited to investigate the link between the pond and the western limb of the moat. It measured 6.9m long x 1.9m wide, and was excavated to a maximum depth of 1.4m. The trench was aligned east / west.
- 4.9.2 The edge of a large cut feature [149] was revealed at the eastern end of the trench, extending beyond the eastern, northern, and southern limits of excavation. Sample excavation demonstrated that the feature was at least 2.3m wide and 0.9m deep, and that the western edge sloped gently at first to a break of slope, before dropping steeply to the limit of excavation at 66.87m OD. Two fills of mid grey clay were identified, and the feature was sealed by 0.4m of dark brownish grey sandy silty clay overburden, which had formed in the base of a linear depression surviving as an earthwork. The approximate alignment between the west edge of cut [149] and that of the west edge of the moat, as revealed in Trench 9 (*Section 4.10*), suggested that this was indeed the western limb of the moat. No finds were recovered.
- 4.9.3 A large linear ditch [153] was revealed at the western edge of the trench, which was aligned north / south; it measured 4.5m wide and was at least 1.6m deep from the top of the western edge. Sample excavation stopped at 66.75m OD, without reaching the base of the feature, but the sides were convex and relatively steep. The lowest fill identified was a deposit of grey sandy silt [152], and this was overlain by fills of dark yellowish brown silty sandy clay [151], and very dark grey sandy silty clay [150], with up to 0.5m of overburden above (at the eastern end of the trench). Late post-medieval and modern pot sherds were recovered from the fills (*Section 4.16*).
- 4.9.4 A narrow linear feature was recorded, aligned east / west. It truncated the upper fill of cut [149] and appeared to run into ditch [153], not being present to the west of the latter feature. It can be suggested that this narrow linear feature was a drain, cut after [149] had infilled, but whilst ditch [153] was still open.

#### **4.10 TRENCH 9**

- 4.10.1 Trench 9 was positioned to reveal the profile of the western limb of the moat, and to determine whether any early silts survived. The trench was aligned east / west, it measured 7.1m long, and had a maximum depth of 1.9m. The trench was stepped out to enable excavation below the maximum depth for unshored excavations (1.25m); it was 3.9m wide above the step, and 1.9m wide below. As with Trench 8, it crossed an existing earthwork depression.
- 4.10.2 The western edge of a very substantial ditch [199], almost certainly the moat, was revealed; it measured 2.85m deep x at least 6m wide, with the bottom lying at 66.24m OD. The profile was irregular, the western side dropping steeply near the top with a gradient of 2:3 (x:y), and then more gently, with a gradient of 2:1 (x:y); the base was flat, and at least 1.1m wide. The thin basal fill [131] consisted of light yellowish brown silty sand. It was overlain by two deposits of grey silty clay [129] and [128], and an upper fill of yellowish brown clayey sandy silt [127]. A single sherd of pottery was found lying between the basal fill and the cut. The upper three fills all contained brick inclusions, and an assemblage of post-medieval and modern pottery was also recovered. During excavation of the moat section, a deep, very dark, grey silty clay deposit was recorded at the north side of

the moat section, similar to fill [128]; it was unclear whether this represented a late feature recut into the moat during the period of its infilling, or if it was merely the product of irregular dumping during the filling process.

#### **4.11 TRENCH 10**

- 4.11.1 Trench 10 was positioned to try to determine whether there was an early access route to the site from the west, and also to establish the possible western extent of the moat. The trench measured 6.75m long x 1.9 wide x 1.7m deep, and was aligned roughly north/south. Because of its depth, Trench 10 was recorded from the surface.
- 4.11.2 The trench revealed part of the north edge of a very large cut feature [121], which was at least 4.8m wide and had not been bottomed when excavation was discontinued at a depth of 1.7m. The north side was not fully revealed because of the presence of a modern service pipe crossing the trench on an east/west alignment at a depth of 0.6m, but, where seen, the cut was gently angled downwards at a gradient of c2:1 (x:y). Five fills were recorded, which were predominantly deposits of silty clay. No dating evidence was recovered from the two lowest fills, but the upper fill [117], at least 1.2m deep, contained up to 5% large fragments of red brick and tarmac, and had evidently been dumped comparatively recently.
- 4.11.3 The north edge of cut [121] appeared to be on the same alignment as the north edge of the moat earthwork, some 15m to the east.

#### **4.12 TRENCH 11**

- 4.12.1 Trench 11 was sited to investigate geophysical anomalies to the west of the putative northern feeder channel. The trench measured 7.2m x 1.9m x 1.1m (maximum) deep, and was aligned north / south.
- 4.12.2 A large cut feature [112] was identified at the southern end of the trench, beneath 0.68m of overburden; it was revealed to be at least 0.36m deep, with a near vertical western edge, and a grey sandy silty clay fill. The cut [112] measured at least 1.9m x 1.8m, continuing beneath the southern and eastern limits of the trench. Heavy rainfall and the need to backfill the trench before evening precluded further investigation.
- 4.12.3 A second large cut feature [110] was found at the northern end of the trench, beneath 0.66m of overburden. It was not sample-excavated but measured at least 3.7m x 1.9m; a fill of grey silty clay, mottled with yellowish brown clay, was identified at the outer edges, with an inner, presumably secondary fill of grey silty clay.
- 4.12.4 A linear feature [114], 0.6m wide and greater than 0.14m deep, was recorded extending north / south between the two large features [110 and 112]. Given the constraints of time and heavy rainfall, it was not possible to ascertain the stratigraphic relationships between linear feature [114] and the large features to the north and south. No dating evidence was recovered from any of the three features described above.

4.12.5 Cuts [112, 110 and 114] all appeared to be sealed by a buried soil horizon 0.25m thick, overlain by a clay levelling layer, which was a maximum of 0.4m thick, and finally topsoil which was 0.3m thick. The clay levelling layer was thought to be a recent deposit, possibly associated with the construction of the housing estate to the west. In addition, a narrow diameter plastic water main was found crossing the southern end of the trench.

#### **4.13 TRENCH 12**

4.13.1 Trench 12 was sited to determine whether there was any evidence for infill adjacent to the northern pond, and to investigate whether the putative northern feeder channel had once continued northwards on the same alignment. The trench measured 7.5m x 1.9m x 1.4m deep, and was aligned east / west.

4.13.2 A deep cut feature [125] was recorded at the western end of the trench. It measured at least 2.7m wide by at least 1.18m deep, continuing beyond the limit of the trench to the west, north, and south; its eastern edge was aligned north / south. The eastern side sloped downwards relatively evenly at a gradient of c1:1, excavation being discontinued at a depth of 69.74m OD. A lower fill of dark grey organic clayey silt [124], and an upper fill of brown sandy silt with red brick inclusions [123], were identified. The lower fill may have represented relatively slow infilling of the cut, but the upper fill appeared to be the product of large-scale modern dumping and levelling. Excavation of cut [125] was discontinued so as not to disturb a drain emptying into the open ditch 2m to the south, apparently flowing from the direction of Trench 12. The fact that this drain was still functioning to the south, but was not visible in Trench 12, may indicate that the lowest recorded fill of cut [125] was of relatively recent origin, and that the drain, still functioning, lay below.

4.13.3 The eastern edge of cut [125] was on the same alignment as the eastern edge of the feeder channel to the south (as observed in Trench 1), suggesting that cut [125] may have been a former continuation of that channel.

4.13.4 A second linear feature [126], 0.6m wide, and considered to be a modern drain, was revealed 2m west of [125]. It was not sample-excavated.

#### **4.14 TRENCH 13**

4.14.1 Trench 13 was positioned to allow investigation of geophysical anomalies close to the probable north-west corner of the moat. It was aligned roughly north-east / south-west, measured 9.5m x 2m, and was excavated to a maximum depth of 1.17m.

4.14.2 Three service pipes crossed the middle of the trench, aligned roughly north-west / south-east, and were associated with an area of disturbance 2m wide. The pipes were of lead and cast iron, and may be the cause of the geophysical anomalies found in this area. In addition, a cut feature [142] was recorded towards the north-east of the trench. It extended beyond the trench to the north and south and, although its plan form was not definite, it may have been a ditch aligned roughly north/south. Cut [142] was 1.36m wide and 0.72m deep, with a U-shaped profile. The fill contained modern brick rubble.

4.14.3 These features were sealed by up to 0.5m of overburden, consisting of rubble and topsoil. A cobbled surface was recorded at the north-east end of the trench, extending south-west for c4m. It sealed cut [142] as well as some of the service pipes. The rubble and cobbled surface are further possible sources for the geophysical anomalies found here.

#### 4.15 TRENCH 14

4.15.1 Trench 14 was sited to establish the position of the western limb of the moat, and to investigate a narrow open ditch which probably marked the position of the moat to the south. The trench measured 4.5m x 1.9m, and was excavated to a maximum depth of 1.6m. It was aligned east/west.

4.15.2 The eastern edge of a large cut feature was found, which was oriented north/south. It was at least 2.8m wide, 1.2m deep and was not bottomed. The lowest fill revealed consisted of a black silt, this being sealed by a deposit of redeposited yellowish brown clay up to 0.8m thick, and overlain by another deposit of black silt. The top of the eastern side of the feature had been disturbed by the cut for a rough stone-lined drain; this latter feature had not been completely backfilled, giving rise to the narrow open ditch referred to above.

4.15.3 The alignment of the large cut feature found in this trench suggests that it may have been the eastern edge of the western limb of the moat.

#### 4.16 FINDS

4.16.1 In total, 164 fragments of artefacts and ecofacts were recovered from Trenches 3, 4, 6, 8, and 9, albeit mostly from the latter. A wide range of finds was recovered, including waterlogged wood and leather, but only pottery was represented in any quantity. In general the material was well-preserved and in large fragments. The breaks in the pottery were not abraded, indicating that the ceramic had not moved far from its original place of deposition, and that the contexts were relatively undisturbed by later activity.

4.16.2 Wattle or fragmentary wicker-work from Trench 3 (fill [158]; the eastern arm [198] of the moat) was badly damaged, but the small diameter of individual rods suggested wicker-work, perhaps a large basket or hamper, rather than any form of structural wattle. A substantial part of a wooden shovel blade from ditch 168 [fill 164] was of interest (Figure 8). It has been identified as oak (*quercus*) wood (E Huckerby pers comm) and its extreme thinness suggests that it might have served for some more delicate purpose than agricultural work, perhaps as a bread or malt shovel. This object cannot be dated with confidence but is thought to be late; wooden bread shovels remain in use to the present day. The small fragment of wood from an upper fill [128] of moat [199], is of no archaeological interest. Three fragments of leather from shoes were recovered from the same fill; the shoe style suggests a late date, probably late nineteenth or early twentieth century.

4.16.3 Fragments of ironwork from ditch [189] (Trench 4) and moat [199] (Trench 9) are corroded and thus cannot be further identified. Animal bone from fills [128] and [129] of moat [199] represent domestic waste dumped into the moat at a late stage, along with the pottery (*Section 4.16.4*).

- 4.16.4 The pottery is predominantly table and kitchen wares of the very late eighteenth to nineteenth centuries, and derives mainly from the fills of moat [199] (fills [128-131], in Trench 9). It comprises a limited range of blue and white underglaze printed blue and white wares, predominantly pearlware and white earthenware tea bowls/cups and plates, with small amounts of creamware, porcelain and bone china and numerous fragments of black-glazed redwares. It is of interest that, although not closely datable, the most recent vessel appears to derive from the primary fill [131], suggesting that material in the upper layers, which was marginally earlier, was dumped from elsewhere, or represents redeposited fills of an earlier date. Cross-matches between fills [129] and [130] suggest that the moat was filled swiftly, possibly as a single action. A single fragment of mid-to late eighteenth century wine bottle from fill [130] was probably the earliest object from the excavation.
- 4.16.5 Pottery from drainage ditches [153] and [189] was of broadly similar date to that from the moat, and certainly none of the material recovered was earlier. That from ditch [155] was appreciably more recent, probably dating its construction to the later nineteenth or early twentieth century.



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## 5. DISCUSSION

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### 5.1 INTRODUCTION

- 5.1.1 The evaluation has provided detailed information about the depth, character, and date of archaeological deposits, and has clarified some aspects of the plan form of the moat, but it has also highlighted further questions about the site's layout.

### 5.2 THE NORTHERN FEEDER CHANNEL

- 5.2.1 Trench 1, excavated across the putative northern feeder channel, demonstrated that an original wide ditch had been recut twice to form narrower channels, and that the last of these recuts was probably of quite recent date. The eastern edge of the cut feature found in Trench 12 [125] was on almost the same alignment as that of the original ditch recorded in Trench 1. This suggests that the channel once flowed southwards in a straight line, rather than bending around from the outflow of the pond further west; the change in alignment was probably relatively recent. The lower fill of [125] appeared to have been deposited on top of a drain which still functions, whilst the modern dumping, filling the upper part of [125], suggests the possibility that the southern edge of the pond may be the product of the tipping of rubble in the twentieth century, rather than being indicative of an older feature. To the south, Trench 2 demonstrated that the feeder channel had once flowed into the moat, before being backfilled to create the modern causeway.

### 5.3 THE NORTHERN HALF OF THE MOAT

- 5.3.1 Trenches 3, 8, 9, 10, and 14 helped to clarify the position and dimensions of the northern, eastern, and western arms of the moat, and allowed the age and character of the surviving fills to be assessed. Trench 3 confirmed that a very substantial moat cut existed below the extant open earthwork. Close to its north-east corner, the extant earthwork is *c*10m wide, with the base 1.2m lower than the platform, and 2.7m lower than the ground surface to the east. Excavation demonstrated that the moat cut was probably of the same width as the earthwork, but that its base was 1.6m deeper, at 67.26m OD, giving a total depth of 2.8m measuring down from the top of the west side, and 4.3m from the top of the east side. The west side sloped steeply near the top, but after a break of slope, dipped more gradually to the flat base. The ceramics from the moat fills were generally of post-medieval date, particularly those identified within the Trench 9, and in particular were of late eighteenth to nineteenth century date (*Section 4.16*). The palaeobotanic evidence suggests that the earliest fills were deposited before the eighteenth century, as there is an absence of pine, larch, and exotic tree species pollen, and these trees extensively planted in the eighteenth and nineteenth centuries. This would suggest that the last clean-out of the moat occurred in the post-medieval period, possibly even before the eighteenth century, but repeated cleaning out of the moat may have altered the profile since the moat was first cut. Although the ground surface falls off steadily from north-east to south-west across the whole site, the 1.5m discrepancy between ground levels to the east and west of the

eastern moat arm suggests the possibility that spoil from the moat may have been spread out to the east. It certainly seems unlikely that spoil was used to create a raised platform, and no evidence for the presence of redeposited natural clay or sand was seen in Trenches 3 or 13, which impinged on the platform.

- 5.3.2 Trenches 14 and 9 appear to have located the eastern and western edges of the moat, respectively. Little excavation was possible within Trench 14 but, in Trench 9, the western side and the base of the moat were revealed. Here, the dimensions and profile of the feature were very similar to those obtained in Trench 3, with the exception that the ground surface on either side of the moat was at roughly the same height: the base was found at a depth of 2.85m below the western edge, at 66.24m OD. All the fills contained post-medieval pottery or brick fragments, again suggesting that any medieval silting deposits had been lost in this area.
- 5.3.3 It seems probable that the large cut feature found in Trench 10 represents the north-west corner of the moat. If this hypothesis is correct, the implication is that the north-west corner was square rather than rounded in shape, apparently mirroring the north-east corner, as represented by the surviving earthwork; the moat might even be considered to bulge outwards slightly at this corner. Several moats in Cheshire have been recognised as having a very pronounced bulge in one corner, certainly exceeding any possible bulge at Clayton Hall (Tindall 1985, 11). The presence of a deep cut feature in Trench 10 raises the question of where any north-western access to the platform lay. The cobbled surface found in Trench 13 suggests a twentieth century driveway leading in from the north-west, and this may have followed the line of an older medieval or post-medieval bridge or causeway, that was possibly sited between Trenches 14 and 10, but more probably lying between Trench 10 and the terminus of the northern arm of the moat, 15m to the east. Certainly the impressive size of the northern and western arms of the moat might suggest that this part of the feature was intended to be seen from the main medieval approach to the platform, particularly as the moat appears to have been far less impressive to the south (*Section 4.5*).

## 5.4 THE OUTFLOW CHANNEL

- 5.4.1 The ditch recorded at the western end of Trench 8 seems to be an outflow channel from the moat to the north, leading towards the deep watercourse still running downslope to the south-west, via a pond (*Section 5.6*). The large cut feature recorded at the other end of Trench 8 suggest that the moat itself continued southwards, though limitations on the length of the trench meant that it was not possible to establish whether the moat was here of the same massive dimensions as further north. An east/west drain [155] which crossed the fills of the moat and apparently discharged into the ditch to the west seems to demonstrate that this ditch was open after the moat had been largely infilled. However, there were no other indications as to the relative date of moat and outflow ditch. It may be that the outflow was an original feature contemporary with the cutting of the moat, but it is equally possible that it was dug much later as a means of draining a derelict moat.

- 5.4.2 As has already been noted (WYAS 1998a, 38), the level of the banks of the pond is very low relative to the western arm of the moat. If the outflow and pond were contemporary with the moat, there must have been a substantial sluice to retain water within the moat.

## 5.5 THE SOUTHERN HALF OF THE MOAT

- 5.5.1 Trenches 4, 5, and 6 have provided much information about the likely form of the southern part of the moat, but raise further questions about its exact course. Trench 4 was positioned in the middle of an avenue of trees aligned east/west, possibly lining the south-east access road leading between the hall, sited on the platform, and post-medieval farm buildings, lying to the east, close to the stable block which has survived to the present day. The avenue of trees had suggested either a break in the original moat, part way along the eastern arm, or the presence of a wide post-medieval causeway. The excavation of Trench 4 indicated that the moat had never continued south at its full width. Instead, three linear features were found, that had all been filled in the post-medieval or modern periods. Because of the limited nature of the evaluation trenching, it was not possible to establish how the three ditches related to the moat to the north. One possibility is that ditch [169], the earliest and most north-westerly of the three linear features, represents a much narrower continuation south of the moat, and that it may have been bridged close to Trench 4. One interpretation of a dotted line shown on the Ordnance Survey (1848) first edition 1:10,560 map is that a footbridge may have led eastwards to the farm. The middle ditch of the trio may represent a later attempt to drain the southern terminus of the wide moat to the north, whilst the most south-easterly feature may be a later still, or an unrelated drain. Certainly the stratigraphy of the ditches makes it clear that they cannot have been contemporaneous features.
- 5.5.2 The associations of the cut feature revealed in Trench 5 remain uncertain. While it may represent the south-east corner of the moat, this has not been established beyond doubt, and the feature could yet prove to be an unrelated drainage ditch aligned north-north-east / south-south-west.
- 5.5.3 Trench 6 clearly demonstrated that the large moat cut revealed in Trench 9 did not continue south on the same alignment as far as Trench 6. Instead, a narrower ditch was found, aligned east / west. The base lay at 66.34m OD, almost as low as the base of the moat where excavated in Trench 9. It is as yet uncertain whether this ditch represents a southern arm of the moat, dug to only half the width of the northern part of the moat because ground level to the south was lower, or whether this was an unrelated drainage feature or boundary. It should be noted that the 1961 OS Field Inspector stated that the line of the southern arm of the moat could be traced as a shallow depression 10m wide and 0.2m deep (WYAS 1998a, 20). This depression is considered to lie in the pasture beyond the fence to the south of Trench 5.

## **5.6 THE SOUTH-WESTERN POND**

- 5.6.1 The evidence recovered from Trench 7 suggested that, before it was recut, the northern edge of the pond lay roughly in the same position as now, though the north side was rather steeper. Silts, probably relating to the earlier pond, survived at the bottom of the north edge. The pond may have been fed by the outlet channel from the moat (*Section 5.4*), and in turn has an outlet at its south-east corner, into the ditch, which runs away from the site downslope to the south-west. Some indication that this ditch may have been dug, or at least cleaned out, in recent years came from local people, who remembered that the area to the west of the pond, now very dry, was formerly prone to flooding.

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## 6. RECOMMENDATIONS

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### 6.1 FURTHER TRENCHING WORK

- 6.1.1 The present programme has been able to establish the line of the moat particularly around the northern side of the moat, and has answered considerable questions relating to the interaction of the northern pond with the moat, but there are still a number of questions relating to the water system that need to be addressed. In particular what was the original form and line of the moat defences around the southern side of the site. The excavation of a number of carefully targeted evaluation trenches would enhance the value of the fieldwork conducted to date, and provide answers to some of these questions.
- 6.1.2 Trenching between Trench 4 and the southern terminus of the eastern moat arm would be extremely helpful, and should elucidate the relationship between the moat, and the ditches revealed in Trench 4. It should be noted that the earthwork southern terminal of the moat is confusing, in part because of the presence of what may be an old excavation trench, possibly excavated in 1973 (WYAS 1998a, 33).
- 6.1.3 Excavation of a trench to the south-west of Trench 5 should determine whether cut [174], identified in Trench 5, represents the south-east corner of the moat. Such a trench would ideally cross the fence line into the paddock south of the site, if access to this area could be arranged.
- 6.1.4 Trenching to the north and east of Trench 6 should determine whether cut [168], identified in Trench 6, formed part of a narrow southern arm of the moat.
- 6.1.5 Trenching to the south-east of Trench 8 would elucidate how the western arm of the moat narrowed or terminated at its southern end. It is also necessary to confirm that the cut at the eastern end of Trench 8 is in fact the moat.
- 6.1.6 Trenching to the south and east of Trench 10 would determine whether evidence exists for a causeway, bridge, or break in the moat providing access to the platform from the north-west.
- 6.1.7 The large features identified in Trench 11 are not well understood. Further excavation east of Trench 11 should enable the characterisation and dating of these features, and would seek to establish whether there was a relationship with the cut, aligned east / west, that was identified in the western baulk of Trench 1.

### 6.2 PALAEOENVIRONMENTAL ANALYSIS

- 6.2.1 **Pollen analysis:** it is recommended that if the deposits from the moat are to be removed, thus destroying them a core or monolith, below the level of palaeoenvironmental contamination (bricks and other debris), should be subjected to limited palaeoenvironmental analysis of pollen, plant and animal remains. In any event a core or monolith from these deposits should be kept in cold storage for future reference.

6.2.2 **Radiocarbon dating:** it is recommended that the sediments should not be dated because of their contamination by post-medieval debris, which would result in considerable uncertainty about the validity of any dates.

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### APPENDIX 3 PALAEOENVIRONMENTAL STRATIGRAPHIC AND POLLEN TABLES

A *gyttja* is an organic mud produced in an aquatic environment.

**TABLE 1: STRATIGRAPHY OF NORTH-EAST SECTION OF MOAT**

DEPTH M	DESCRIPTION
<b>Moat Core 1</b>	
0-0.10	Detritus (organic debris)
0.10-0.40	Red clay
<b>Moat Core 2</b>	
0-0.10	Detritus (organic debris)
0.10-0.50	Coarse <i>Gyttja</i> + sand
0.50+	sand
<b>Moat Core 3</b>	
0-0.10	Detritus (organic debris)
0.10-1.10	Coarse <i>Gyttja</i> and silt and plant fragments
1.10+	Sand
<b>Moat Core 4</b>	
0-0.28	Coarse <i>Gyttja</i> and plant fragments
0.28-1.44	Coarse <i>Gyttja</i> and silt and plant fragments
1.44-1.45	Sand
<b>Moat Core 5</b>	
0-0.15	Unsampled
0.15-0.40	Coarse <i>Gyttja</i>
0.40-0.50	Unsampled
0.50-1.25	Coarse <i>Gyttja</i> and silt and plant fragments
1.25	Coarse <i>Gyttja</i> and silt and plant fragments and sand
1.25-1.52	Coarse <i>Gyttja</i> and silt and plant fragments
1.52+	Sand
<b>Moat Core 6</b>	
0-0.10	<i>Detritus</i> (leaf litter)

0.10-0.65	Coarse <i>Gyttja</i> and sand (0.50-0.65m)
0.65-1.05	Coarse <i>Gyttja</i> and silt and sand
1.05+	Sand
<b>Moat Core 7</b>	
0-0.25	<i>Detritus</i> (organic debris)
0.25-0.50	As above but more consolidated
0.50-1.08	Coarse <i>Gyttja</i> and sand and pebbles
<b>Moat Core 8</b>	
0-0.50	Coarse <i>Gyttja</i> and wood fragments
0.50-0.65	Coarse <i>Gyttja</i> and silt and wood fragments
0.65-0.80	Unsampled
0.80-1.21	Coarse <i>Gyttja</i> and silt and pebbles
1.21	Sand

**TABLE 2: STRATIGRAPHY OF NORTHERN POND**

DEPTH M	DESCRIPTION
<b>Pond Core 1</b>	
0-0.25	<i>Detritus</i> (organic debris)
0.25-0.60	Minerogenic/organic mud (clay 0.60m)
0.60-0.93	Minerogenic/organic mud and plant fragments
0.93-1.05	Clay
<b>Pond Core 2</b>	
0-0.30	Minerogenic/organic mud
0.30-0.50	Clay
0.50-1.15	Clay (mixed red and grey) with sand
1.15-1.30	Sand and clay and minerogenic/organic mud
1.30-1.40	Sand and clay and plant fragments
1.40-1.55	Silty clay
1.55-1.90	Pink clay and pebbles (natural?)
<b>Pond Core 3</b>	
0-0.22	Minerogenic/organic mud and plant fragments
0.22-0.80	Stiff clay pink and grey

0.80-1.00	As above with degraded brick, or sandstone
1.00-1.23	Stiff clay pink and grey
<b>Pond Core 4</b>	
0-0.37	Coarse Minerogenic/organic mud (pollen sample 0.25m)
0.37-0.75	Clay (pollen sample 0.75m)
0.75-0.80	Clay with degraded brick or sandstone
0.80-1.45	Clay and pebbles

**TABLE 3: PERCENTAGE OF POLLEN TAXA FROM MOAT (NORTH-EAST SECTION)**

Taxa	Taxa English names	0.795-0.805m %	0.995-1.005m %
Trees and shrubs		38.7	57.7
Herbs + ferns		60.7	42.3
<i>Alnus</i>	Alder	18	34.9
<i>Corylus avellana</i> -type	Hazel-type	12.7	17.4
<i>Quercus</i>	Oak	0.7	3.4
<i>Ulmus</i>	Elm	0.7	0.7
<i>Fraxinus</i>	Ash	3.3	1.3
<i>Fagus</i>	Beech	2	0
<i>Pinus</i>	Pine	0.7	0
<i>Hedera</i>	Ivy	0.7	0
<i>Calluna</i>	Ling heather	0.7	0
Gramineae undiff	Grasses	27.3	16.1
Cerealina	Cereals	1.3	0.7
<i>Plantago lanceolata</i>	Ribwort plantain	1.3	1.3
<i>Filipendula</i>	Meadowsweet	1.3	3.4
<i>Rumex acetosa</i> -type	Common sorrel-type	0.7	1.3
<i>Rumex acetosella</i> -type	Sheep's sorrel-type	1.3	0
Umbelliferae	Cow Parsley family	2.7	2
Caryophyllaceae	Stitchwort family	0	0.7
<i>Ranunculus</i> sp	Buttercup	0.7	2
Chenopodiaceae	Goosefoot family	1.3	0
Liguliflorae	Dandelion-type	0	1.3
Tubuliflorae	Daisy-type	0.7	0
<i>Urtica</i>	Nettles	0	0.7

Rosaceae	Rose family	0	0.7
<i>Melampyrum</i>	Cow-wheat	0.7	0.7
<i>Rhinanthus</i> -type	Yellow-rattle	4.7	6.7
<i>Lotus</i> -type	Trefoil-type	1.3	0.7
<i>Linum usitatissimum</i>	Flax	2	0
<i>Humulus/Cannabis</i> -type	Hemp or hops	2	0
<i>Campanula</i>	Harebell-type	0.7	0
<i>Pteridium aquilinum</i>	Bracken	1.3	0
<i>Polypodium vulgare</i>		4.7	2
<i>Dryopteris</i>	Buckler-ferns	2	0
<i>Dryopteris filix-mas</i>	Male-fern	0	0.7
Ferns undiff		2	0.7
Corroded grains		2.7	0.7
Crumpled grains		12.7	21.5
Concealed grains		1.2	6
Broken grains		0	0
<b>Pollen sum</b>		<b>150</b>	<b>149</b>

**TABLE 4: PERCENTAGE OF POLLEN TAXA FROM NORTHERN POND**

Taxa	Taxa English names	0.25m %	0.75m %
Trees and shrubs		46.9	80.6
Herbs + ferns		52.8	19.4
<i>Alnus</i>	Alder	34.1	52.4
<i>Corylus avellana</i> -type	Hazel-type	9.8	23.4
<i>Quercus</i>	Oak	0	0.8
<i>Betula</i>	Birch	0.6	3.2
<i>Fraxinus</i>	Ash	1.2	0
<i>Taxus</i>	Yew	0.6	0
<i>Salix</i>	Willow	0	0.8
<i>Calluna</i>	Ling heather	0	1.6
Gramineae undiff	Grasses	39.0	9.7
Cerealialia	Cereals	0.6	0
<i>Plantago lanceolata</i>	Ribwort plantain	1.8	0
<i>Filipendula</i>	Meadowsweet	0.6	0
<i>Rumex acetosa</i> -type	Common sorrel-type	0	0.8
<i>Rumex acetosella</i> -type	Sheep's sorrel-type	0.6	0

Umbelliferae	Cow Parsley family	0.6	0
Caryophyllaceae	Stitchwort family	0	0.8
<i>Ranunculus</i> sp.	Buttercup	1.8	0
Chenopodiaceae	Goosefoot family	0.6	0
Liguliflorae	Dandelion-type	3	0
Tubuliflorae	Daisy-type	1.2	0
<i>Centaurea nigra</i>	Knapweed	0.6	0
<i>Rhinanthus</i> -type	Yellow-rattle	0.6	0
<i>Lotus</i> -type	Trefoil-type	0.6	0
Cruciferae	Cabbage family	0	0.8
<i>Hypericum</i>	St John's Wort	0	0.8
<i>Pteridium aquilinum</i>	Bracken	0.6	0.8
<i>Polypodium vulgare</i>		0	1.6
Ferns undiff		0	2.4
Corroded grains		1.8	10.5
Crumpled grains		7.9	14.5
Concealed grains		2.4	0.8
Broken grains		0.6	0.8
<b>Pollen sum</b>		<b>164</b>	<b>124</b>

## APPENDIX 4 CONTEXT LIST

<b>Number</b>	<b>Trench</b>	<b>Description</b>
100	1	Silty grey fill of linear feature [101]
101	1	Cut for linear feature [100]
102	1	Gravel fill of [103]
103	1	Drain (?) cut for [102]
104	1	Overburden in Trench 1
105	1	Orange clay similar to [106]
106	1	Topsoil (trench wide)
107	1	Levelling deposit of clay
108	1	Buried soil horizon
109	11	Fill of [110]
110	11	Possible pit
111	11	Fill of [112]
112	11	Possible linear (ditch?)
113	11	Fill of [114]
114	11	Linear feature
115	11	Fill of [110]
116	11	Natural – mottled orange silty clay (trench wide)
117	10	Fill of [121]
118	10	Fill of [121]
119	10	Fill of [121]
120	10	Fill of [121]
121	10	Moat?
122	10	(Levelling) fill of [121]
123	12	Top fill of [125]
124	12	Fill of [125]
125	12	Cut
126	12	Fill of linear feature, unexcavated
127	9	Fill of [199]
128	9	Fill of [199]
129	9	Fill of [199]

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130	9	Fill of [199]
131	9	Fill for feeder [133] (black silt)
132	1	Fill of [133]
133	1	Cut for feeder [132]
134	1	Buried soil (?) in Trench 1
135	13	Fill of lead water pipe [136]
136	13	Cut for lead water pipe [135]
137	13	Fill of service trench [138]
138	13	Cut for service trench [137]
139	13	Fill of service trench [140]
140	13	Cut for service trench [139]
141	13	Fill of ditch [142]
142	13	Cut for ditch [141]
143	14	Fill of moat (?)
144	14	Cut for moat (?)
145	14	Fill of stone-lined drain [146]
146	14	Cut for stone-lined drain [145]
147	8	Fill of [149]
148	8	Fill of [149]
149	8	Moat
150	8	Fill of [153]
151	8	Fill of [153]
152	8	Fill of [153]
153	8	Ditch
154	8	Fill of [155]
155	8	Drainage ditch
156	3	Trench 3 overburden
157	3	Dark sticky clay deposit
158	3	Organic layer
159	3	Dark clay band
160	3	Black clay layer (basal fill)
161	6	Layer – subsoil
162	6	Fill of [163]
163	6	Stone-lined drain

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164	6	Fill of [168]
165	6	Fill of [168]
166	6	Fill of [168]
167	6	Fill of [168]
168	6	Ditch
169	-	not used
170	5	Fill of [174] – clay/sand
171	5	Fill of [174] – sand
172	5	Fill of [174] – organic and sand (basal layer)
173	5	Natural (?) clay
174	5	Moat/ditch cut
175	5	Fill of [176]
176	5	Cut for modern intrusion in Trench 5
177	4	Cobble layer
178	4	Mixed sand bedding layer
179	4	Layer
180	4	Layer
181	4	Fill of [182]
182	4	Ditch
183	4	Fill of [189]
184	4	Fill of [189]
185	4	Fill of [189]
186	4	Fill of [189]
187	4	Fill of [189]
188	4	Fill of [189]
189	4	Ditch
190	4	Layer
191	4	Fill of [196]
192	4	Fill of [196]
193	4	Fill of [196]
194	4	Fill of [196]
195	4	Fill of [196]
196	4	Ditch/moat
197	1	Original cut of north/south channel?



198	3	Moat cut
199	9	Moat cut

## APPENDIX 5 SUMMARY FINDS LIST

Trench	Context	Type	Material	Category	No.	Period
3	156	Vessel	Ceramic		1	mid nineteenth century onwards
3	158	Wattle	Wood		1	
3	160	Brick	Ceramic		2	Post-medieval
3	160	Flag	Stone	Sandstone	1	
3	160	Vessel	Ceramic		3	nineteenth / twentieth centuries
4	184	Vessel?	Iron		4	Post-medieval
4	184	Vessel	Ceramic		3	late eighteenth / early nineteenth centuries
6	164	Shovel?	Wood		1	
8	151	Vessel	Ceramic		1	late eighteenth century
8	154	Vessel	Ceramic		4	nineteenth / twentieth centuries
9	128	Animal	Bone		1	
9	128		Wood		1	
9	128	Vessel	Ceramic		9	late eighteenth / nineteenth centuries
9	128	Shoe	Leather		3	
9	128	Vessel	Ceramic		30	late eighteenth / early nineteenth centuries
9	129	Animal	Bone		1	
9	129	Vessel	Ceramic		60	late eighteenth / early nineteenth centuries
9	129	Vessel	Ceramic		8	late eighteenth / nineteenth centuries
9	130	Coal			1	
9	130	Vessel	Glass	Wine bottle	1	mid to late eighteenth century
9	130	Bar	Iron		1	
9	130	Vessel	Ceramic		27	late eighteenth / early nineteenth centuries
9	131	Vessel	Ceramic		1	nineteenth century onwards

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## ILLUSTRATIONS

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- Fig 1 Clayton Hall Location Map
- Fig 2 Location of Palaeoenvironmental Cores
- Fig 3 Stratigraphic profiles through the Northern Pond and the Northern Moat Section
- Fig 4 Trench Location Map
- Fig 5 Ditch / Moat Sections of Trenches 1 and 3
- Fig 6 Moat Sections of Trenches 6 and 8
- Fig 7 Section and Profile through Trenches 7 and 9
- Fig 8 Wooden shovel recovered from the Moat [164], Trench 6
- Fig 9 Interpreted Course of the Moat
- Fig 10 North facing section of Trench 4
- Fig 11 Sections of Trenches 5 and 10
- Fig 12 South facing section of Trench 12



Fig 1: Clayton Hall Location Map

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PROJECT:

CLAYTON HALL

DRAWING No:

2

DATE:

September 2000

KEY:



Position of Core



Contour and level



Pond

Tree

SCALE:

0 5 10 15 20

Metres

TITLE: Location of  
Palaeoenvironmental  
Cores

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Partnership

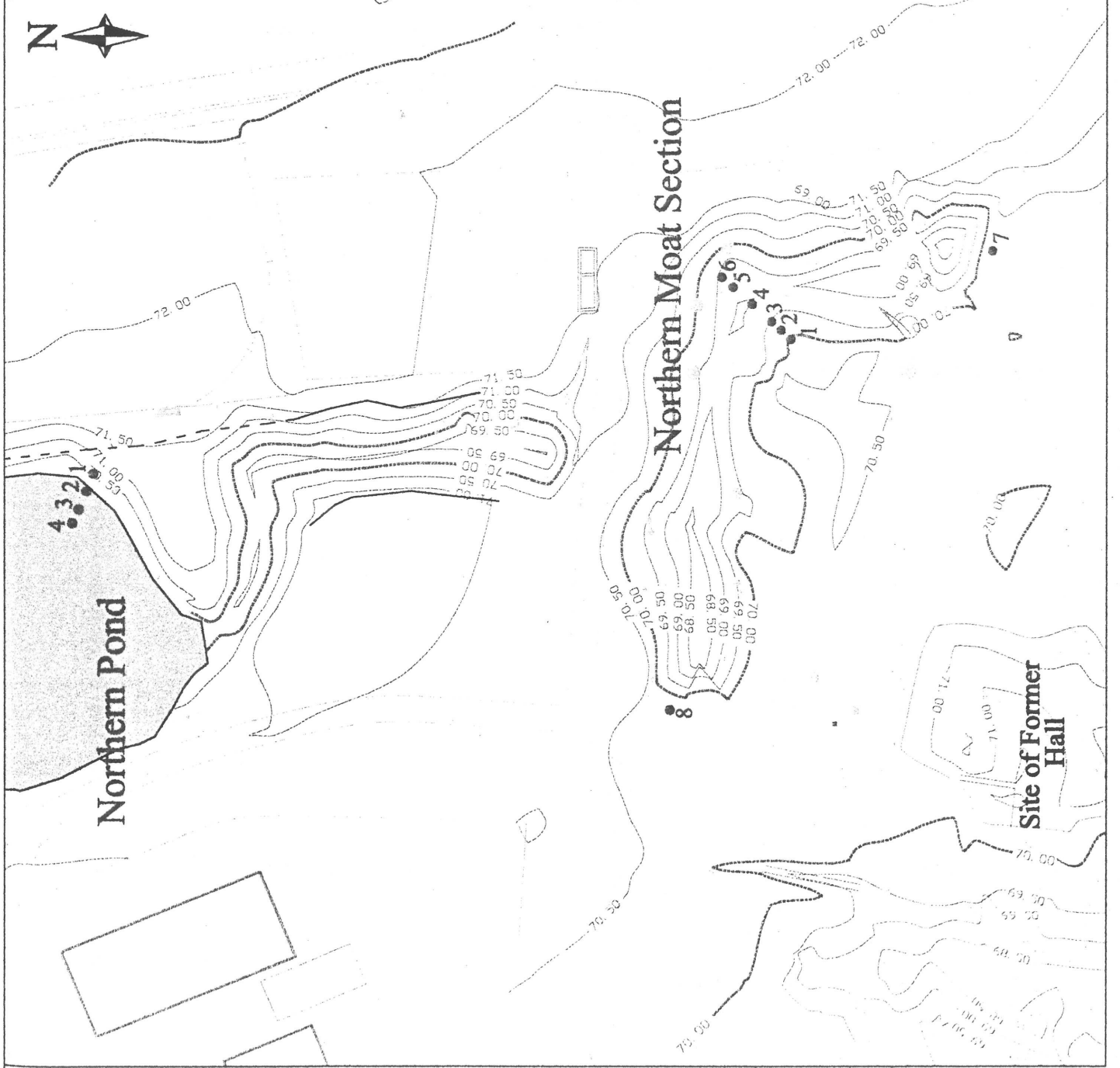
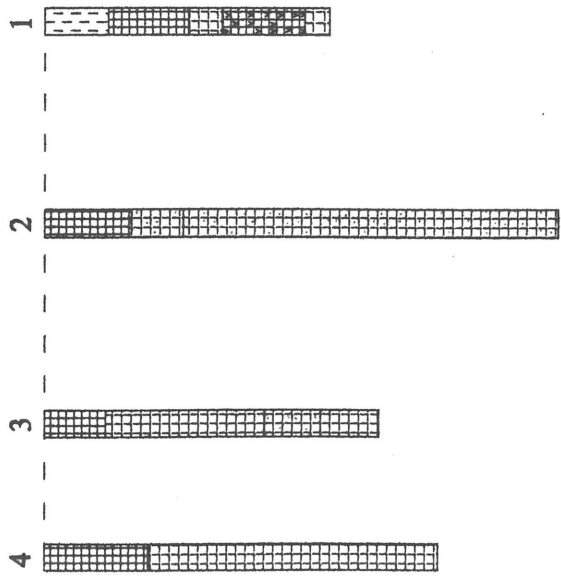
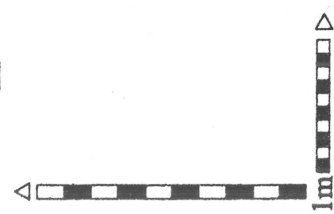
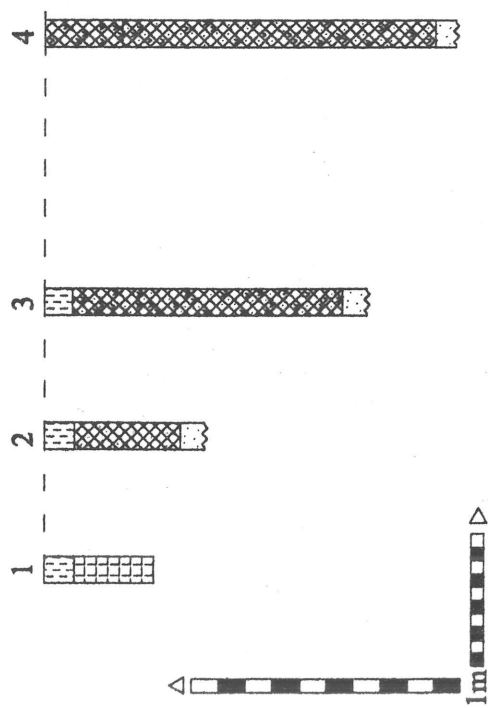


Fig 2 Location of Palaeoenvironmental Cores

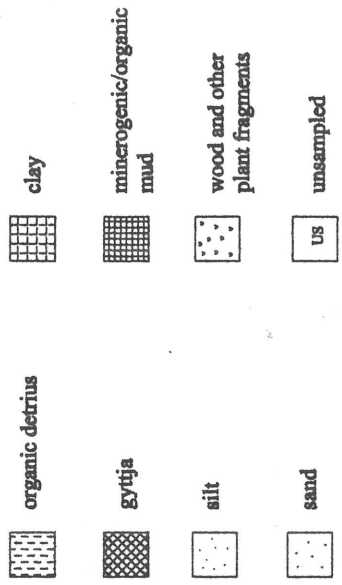
**Stratigraphic transect (partial) of Northern pond**



**Stratigraphic transect of moat: West - East**



**Key**



core 7  
Southern end  
of existing  
moat



core 8  
Western end  
of existing  
moat



Fig 3: Stratigraphic Profiles Through the Northern Pond and Northern Moat Section.

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PROJECT:

CLAYTON HALL





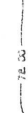


DRAWING No:

4

DATE:

September 2000

KEY:

-  Site of trench
-  Excavated section through moat / channel
-  Other excavated features
-  Edge of moat / channel
-  Contour and level
-  Pond
-  Tree

SCALE:



TITLE:

Trench Locations

COMMISSIONED BY:

Base Survey Provided by  
The Environment  
Partnership

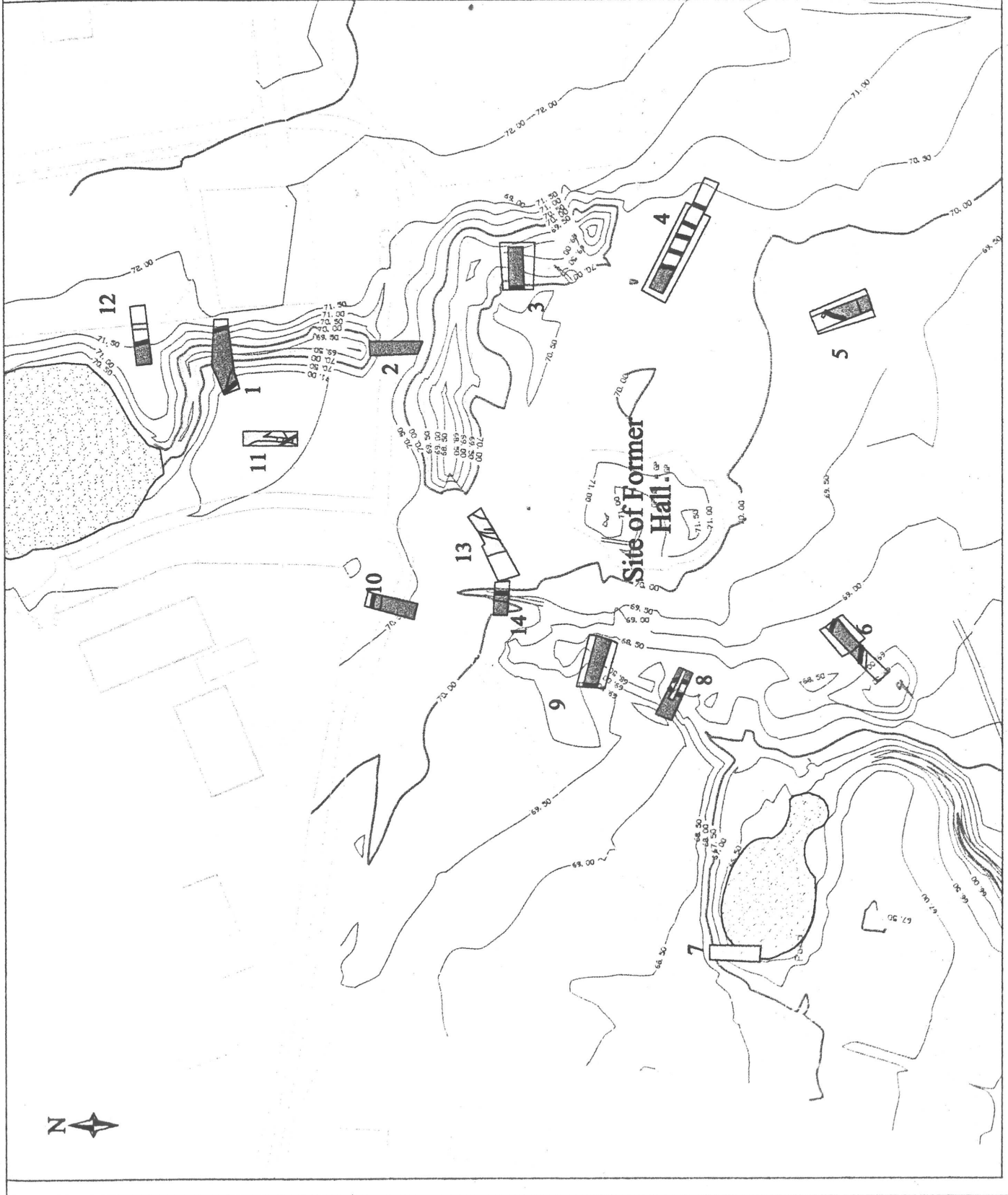


Fig 4 Trench Location Map

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PROJECT:

**CLAYTON HALL**

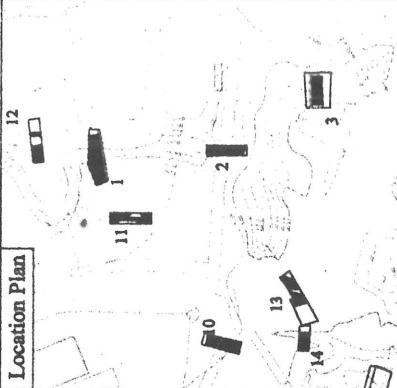
DRAWING No:

**5**

DATE:

**September 2000**

Location Plan



SCALE:

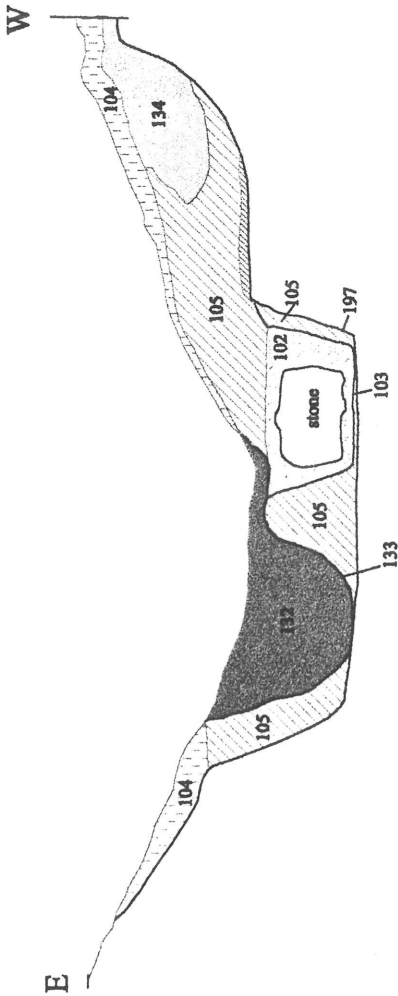


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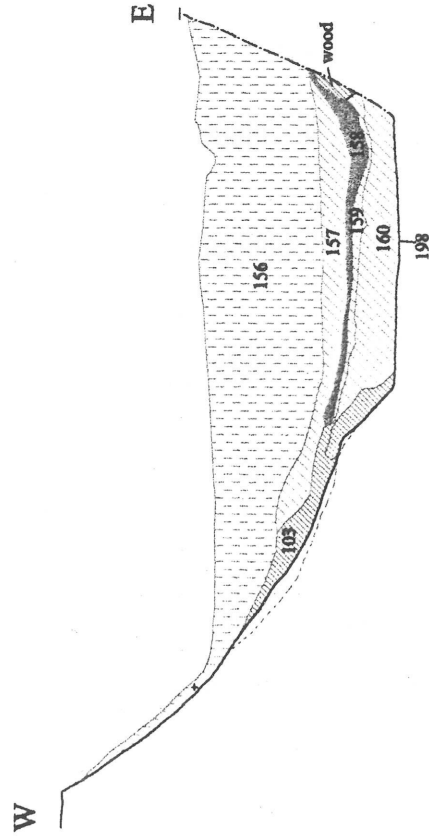
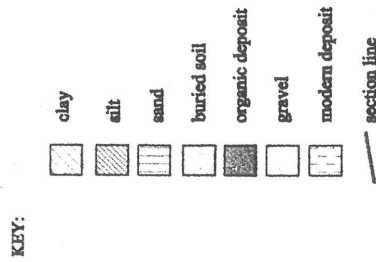
**Ditch / Moat Sections of  
Trenches 1 and 3**

COMMISSIONED BY:

**The Environment  
Partnership**



**Trench 1, Southern  
Section**



**Trench 3, Northern  
Section**

**Fig 5: Ditch / Moat Sections of Trenches 1 and 3**



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PROJECT:

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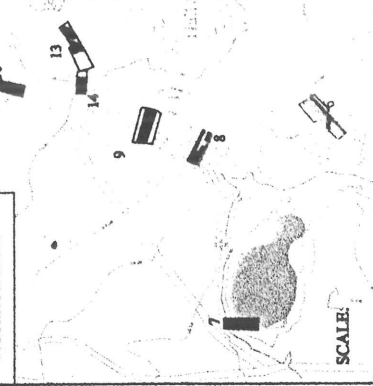
DRAWING No:

6

DATE:

September 2000

Location Plan



SCALE:

0 2m

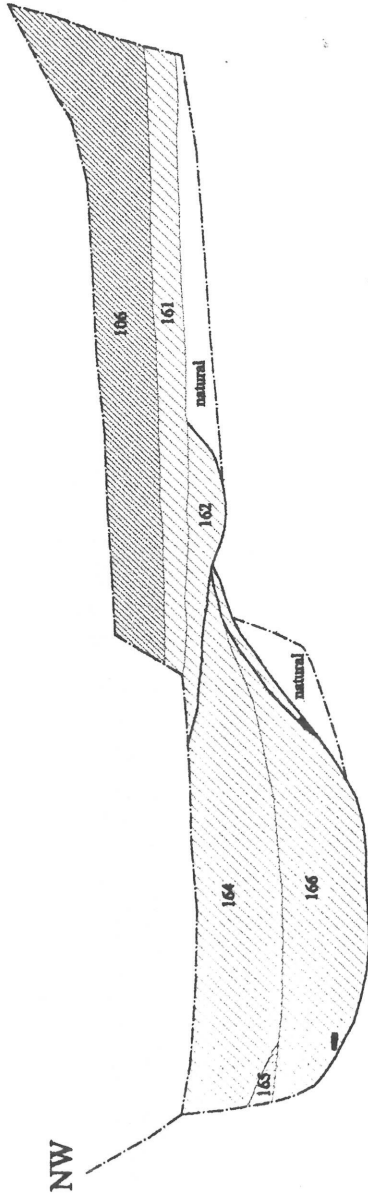
TITLE:

Moat Sections of Trenches  
6 and 8

COMMISSIONED BY:

The Environment  
Partnership

SE

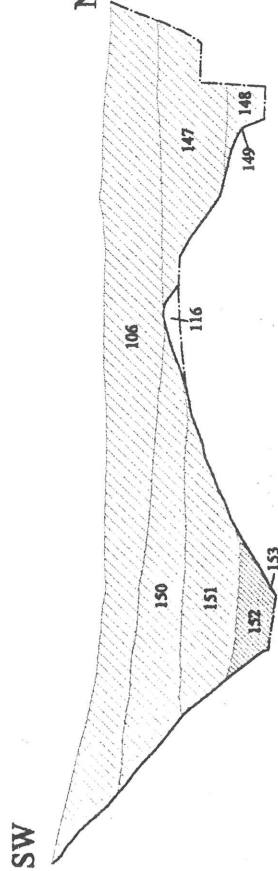


Trench 6, South  
Section

KEY:

- clay
- silt
- sand
- buried soil
- organic deposit
- gravel
- modern deposit
- section line

NE



Trench 8, South-East  
Section

Fig 6: Moat Sections of Trenches 6 and 8

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CLAYTON HALL

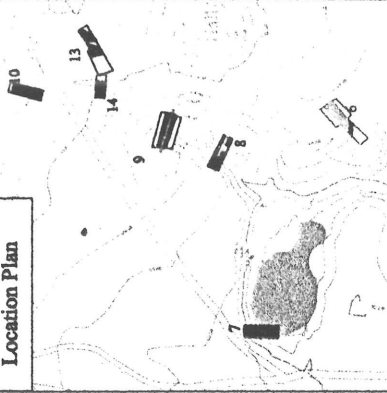
DRAWING No:

7

DATE:

September 2000

Location Plan



SCALE:

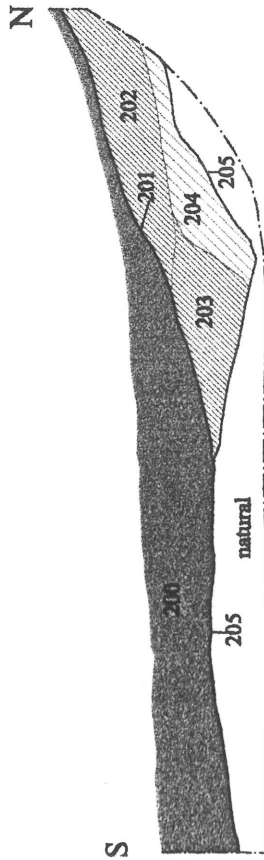


TITLE:

Section / Profile through  
Sections 7 and 9

COMMISSIONED BY:

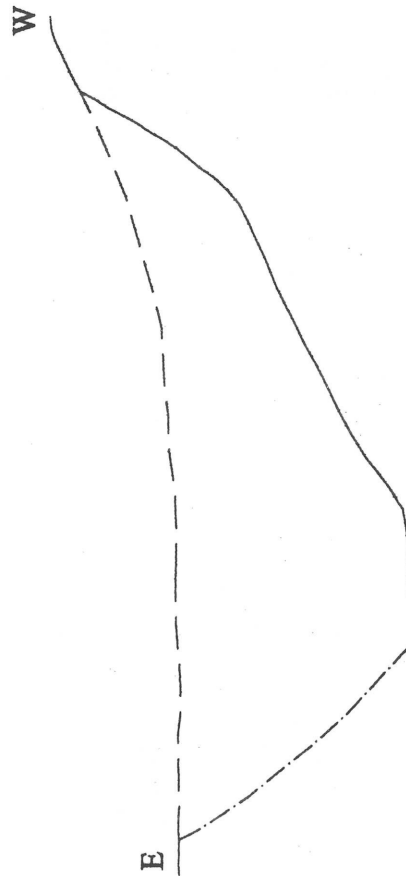
The Environment  
Partnership



Trench 7, West  
Section

KEY:

- clay
- silt
- sand
- buried soil
- organic deposit
- gravel
- modern deposit
- section line



Trench 9, Profile

Fig 7: Section / Profile through Sections 7 and 9

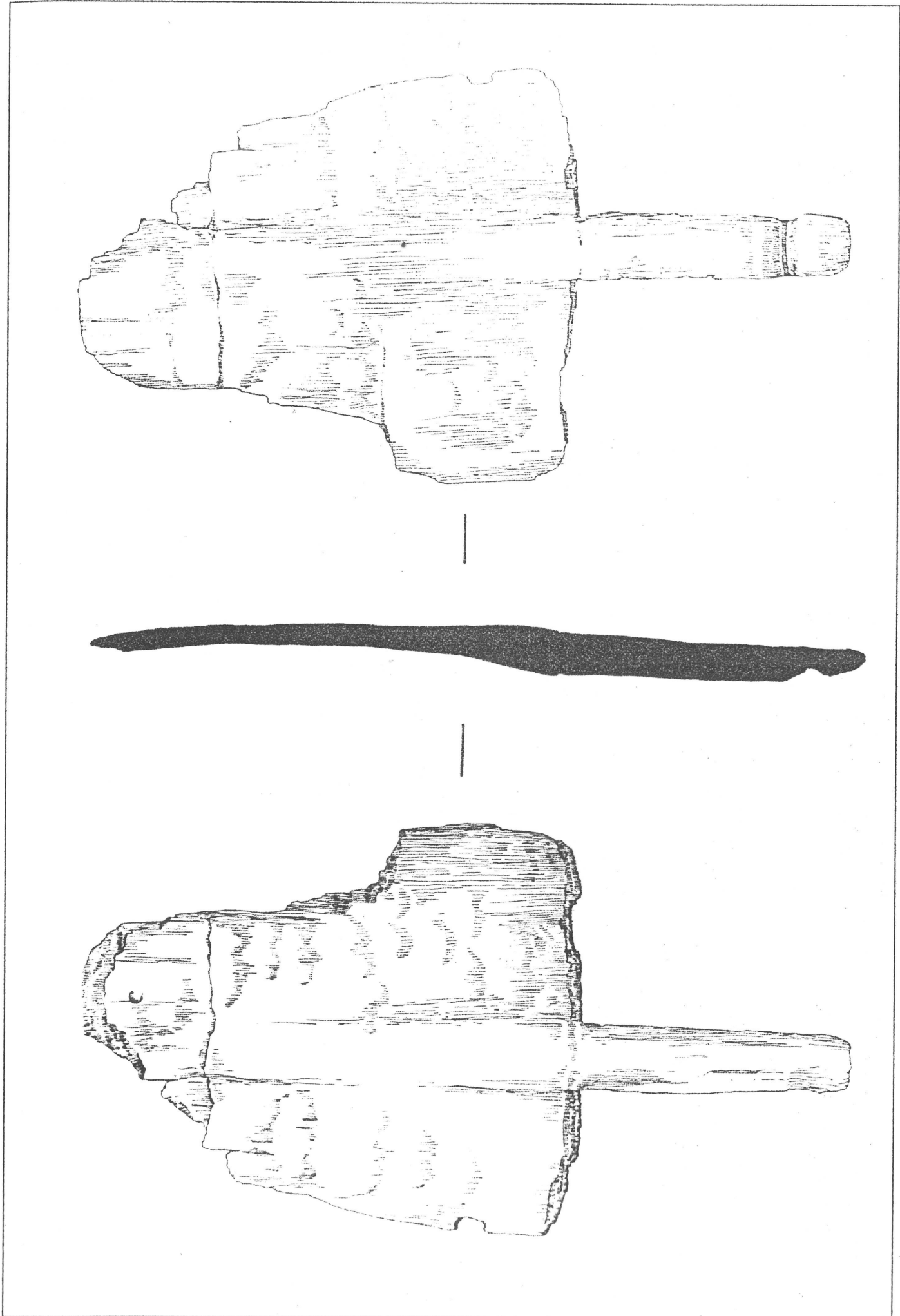


Fig 8 Wooden shovel blade recovered from moat fill [164]. Trench 6

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PROJECT:

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DRAWING No: 9

DATE:

September 2000

KEY:



Moat / channel still open



Suggested route of moat / channel

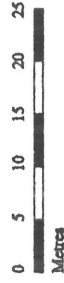
Position of Core

Contour and level

Pond

Tree

SCALE:



TITLE:

Interpreted Course of the Moat

COMMISSIONED BY:

Base Survey Provided by  
The Environment  
Partnership

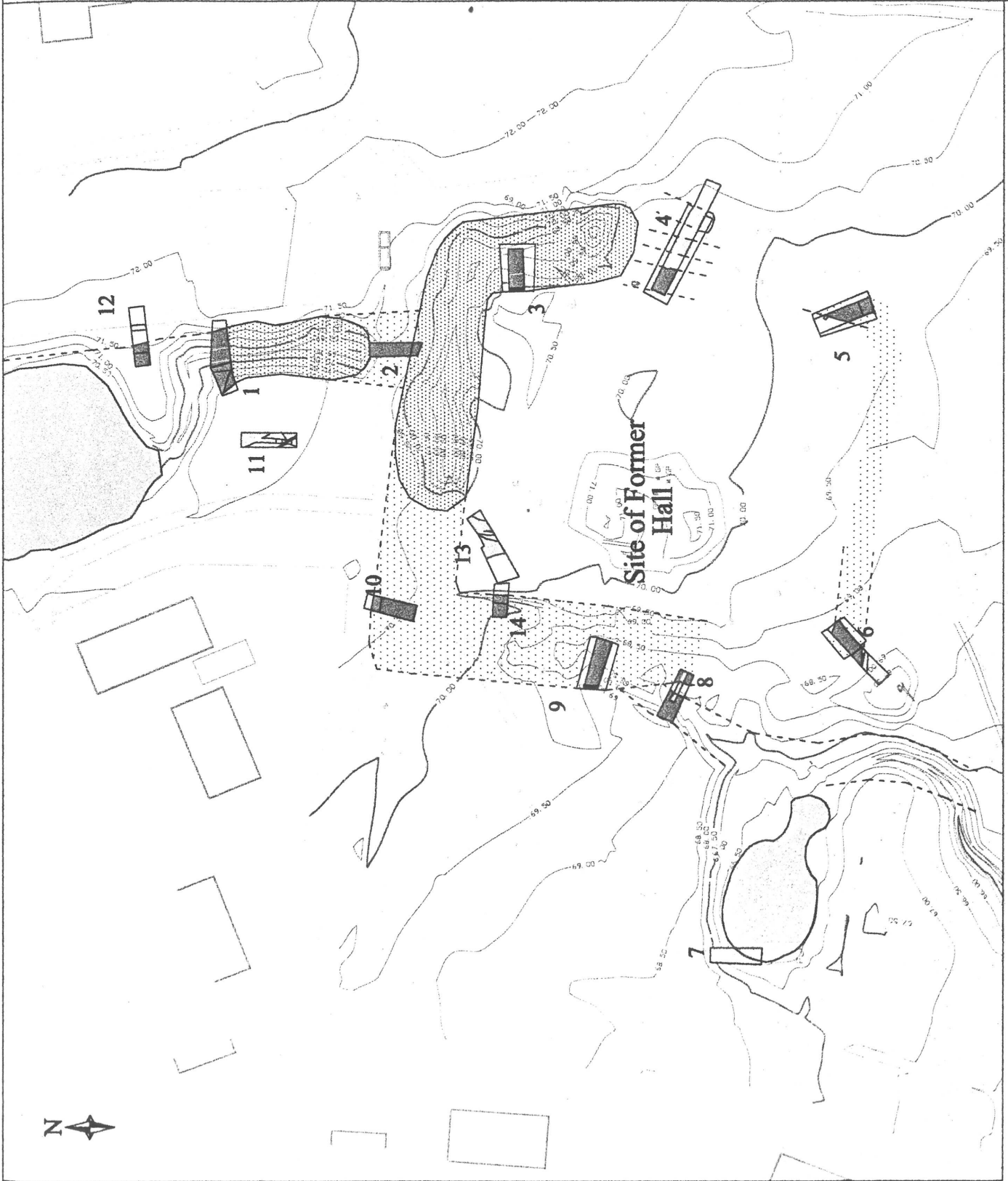
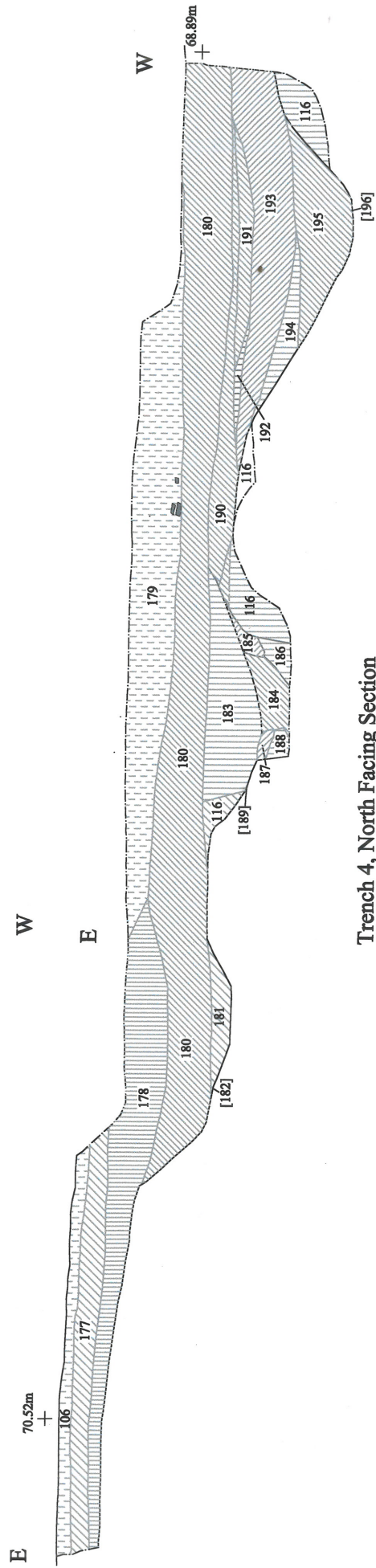
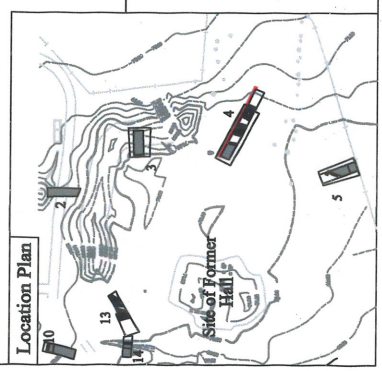


Fig 9: Interpreted Course of the Moat



Trench 4, North Facing Section




**KEY:**

	clay		gravel
	silt		modern deposit
	sand		section line
	buried soil		0
	organic deposit		2m

SCALE:

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**PROJECT:**  
CLAYTON HALL

**COMMISSIONED BY:**  
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**TITLE:**  
North Facing Section of  
Trench 4

**DRAWING No:**  
10

**DATE:**  
November 2000

Fig 10: North Facing Section of Trench 4

PROJECT:

CLAYTON HALL

DRAWING No:

11

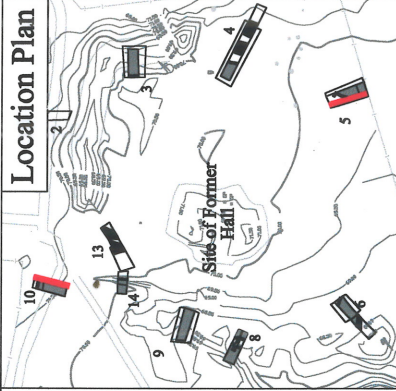
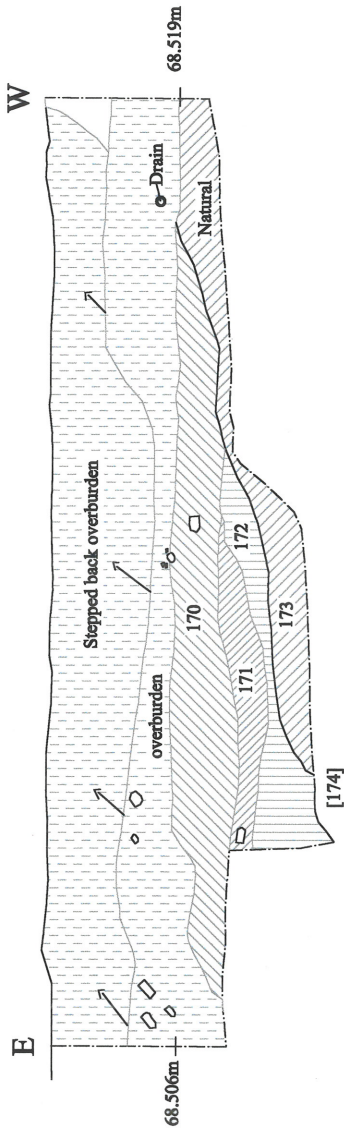
DATE:

November 2000

KEY:

- clay
- silt
- sand
- buried soil
- organic deposit
- gravel
- modern deposit
- section line

Trench 5, East Facing Section



SCALE:

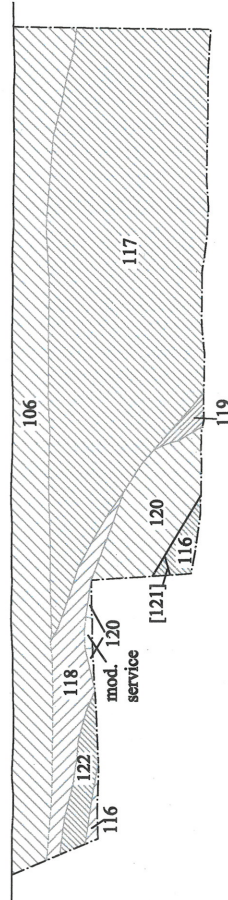


TITLE:  
Sections of Trenches 5  
and 10

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Trench 10, West Facing Section



Trench 10, West Facing Section

Fig 11: Sections of Trenches 5 and 10

KEY:

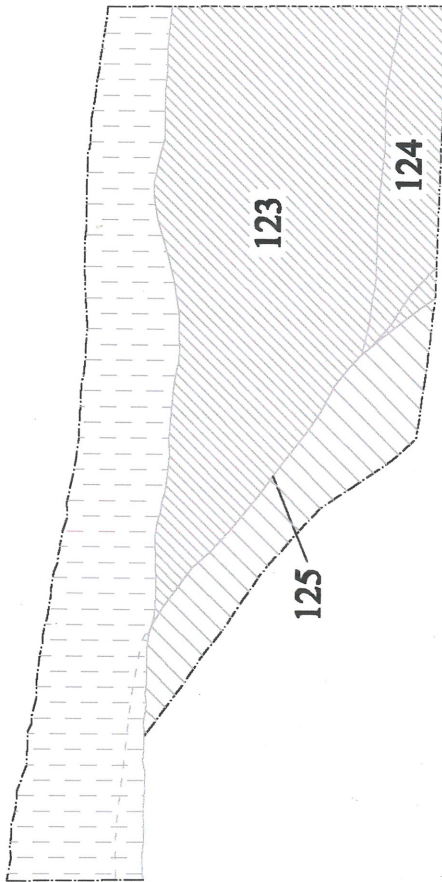
-  clay
-  silt
-  sand
-  buried soil
-  organic deposit
-  gravel
-  modern deposit
-  section line

E

W

71.08+

+71.02



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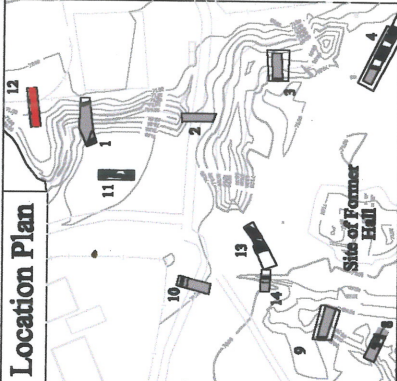
DRAWING No:

12

DATE:

November 2000

Location Plan



SCALE:

0

1m

TITLE:

South facing section of  
Trench 12

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Fig 12: South facing section of Trenches 12

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## PLATES

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- Plate 1 View north-west across the northern moat arm
- Plate 2 Trench 3: Section across the moat – looking north
- Plate 3 Trench 3: View along the eastern moat arm – looking north-west
- Plate 4 Trench 4: Section across ditch [196]
- Plate 5 Trench 5: Ditch [174] runs obliquely across the trench - looking south  
-east
- Plate 6 Trench 6: Section across ditch [168] – looking north-east





Plate 1 View north-west across the northern moat arm



Plate 2 Trench 3: Section across the moat – looking north



Plate 3 Trench 3: View along the eastern moat arm – looking north-west



Plate 4 Trench 4: Section across ditch [196]



Plate 5 Trench 5: Ditch [174] runs obliquely across the trench – looking south-east



Plate 6 Trench 6: Section across ditch [168] – looking north-east