97/13

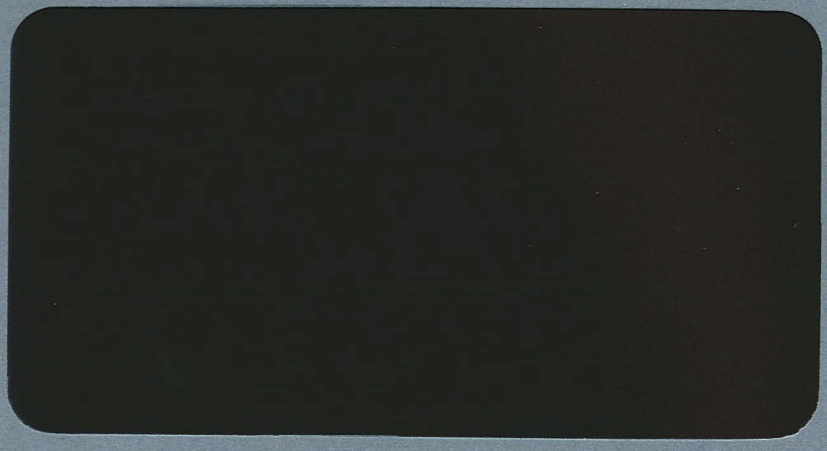
ARCHAEOLOGICAL WATCHING BRIEF REPORT

Lincoln Golf Club, Torksey, Lincolnshire

Site Code:	LGC 97
LCNCC Acc No.	103.96
NGR:	SK 8415 7920
Planning Ref.	96/P/0074

Lincolnshire County Council
Archaeology Section

12 Friars Lane
LINCOLN LN2 5AL
Tel: 01522 575292 Fax: 01522 530724



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Report prepared for The Lincoln Golf Club by SC Johnson and CPH Palmer-Brown
November 1997

Pre-Construct Archaeology (Lincoln)
61 High Street
Newton on Trent
Lincoln
LN1 2JP

Tel. & Fax. 01777 228155

Contents

Illustrations

Summary

* *An archaeological watching brief took place during the excavation of an irrigation lagoon and wildlife sanctuary at the Lincoln Golf Club, Torksey, Lincolnshire. (Fig. 1)*

* *The Lagoon cut through a series of deposits relating to an extinct channel of the (now) River Trent and a well preserved buried soil or palaeosol*

* *A sampling strategy initiated by an environmental archaeologist resulted in the retrieval of column and bulk samples from the soil profiles exposed, as well as large oak timbers*

* *Unquantified assessments of the data during the course of the field project suggested the possibility that the deposits exposed may have dated to the early post-glacial period (ie Mesolithic). However, two recent radiocarbon determinations suggest that these formations commenced at the end of the Bronze Age and continued to accumulate into the Romano-British period.*

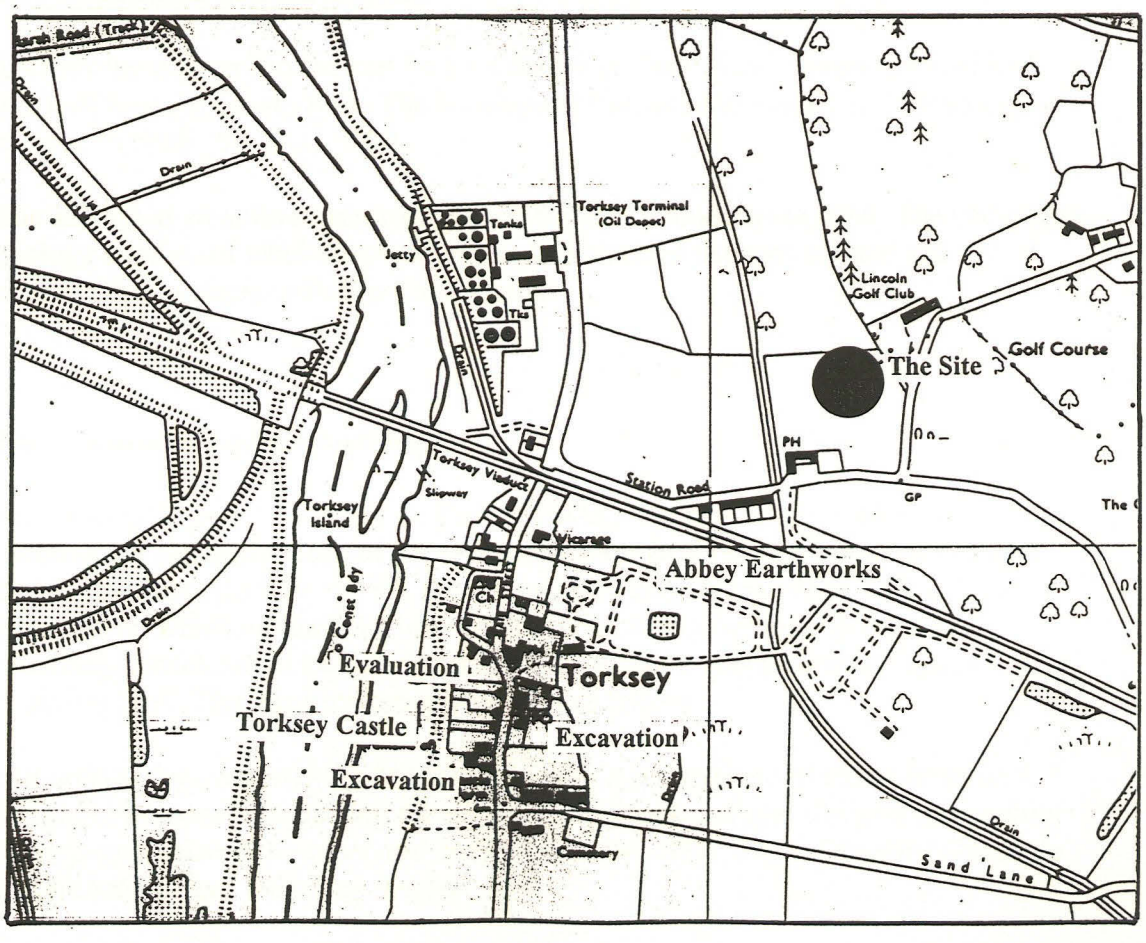

Fig. 1: Site location incorporating principal entries from the County Sites & Monuments Record (1:10,000)
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1.0 Introduction

Planning permission for the construction of an irrigation lagoon and wildlife sanctuary at the Lincoln Golf Club was approved subject to conditions; one of which required the undertaking of an archaeological watching brief on all groundworks (George 1996, 2-3). The Lincoln Golf Club commissioned Pre-Construct Archaeology (Lincoln) (PCA) to undertake the watching brief to fulfil the planning requirement.

This report details the work undertaken by PCA, copies of which will be deposited at the County Sites and Monuments Record; the District Planning Authority and the City and County Museum, Lincoln. A summary on the findings will be submitted to the editor of the county journal *Lincolnshire History and Archaeology* for inclusion in a future edition. An ordered site archive of both paper and physical elements is in preparation and will be deposited at the City and County Museum, Lincoln, within six months of project completion.

The watching brief was undertaken by SC Johnson.

2.0 Location and description

Torksey lies adjacent to the east bank of the River Trent, immediately north of its junction with the Fosse Dyke. The development site is to the north of the village and centres on NGR SK 8415 7920.

The site lies at an altitude approximately 6.0m above modern sea level. The underlying geology consists of wind-blown cover sands with basal deposits of sand and gravel; intermingled in places with Mercia Mudstone.

3.0 Purpose and methodology

The County Sites and Monuments Record (SMR) contains entries which indicate the potential for the disturbance of important archaeological remains within the chosen development site. In view of this, the Assistant County Archaeology Officer issued a project brief which outlined the basic archaeological requirement. The level of recording considered to be appropriate on this occasion was an archaeological watching brief. This has been broadly defined as follows:

'An archaeological watching brief is defined as a programme of observation and investigation conducted during the destruction of archaeological deposits, resulting in the preparation of a report and ordered archive' (IFA, 1994 *Standard Guidance for Archaeological Watching Briefs*)

The site was inspected on July 26th, when excavations had already commenced. The excavations at this time were moderately advanced and were being carried out by a vertical cut method: topsoil stripping had been abandoned due to the fact that

tractors had been sinking into a horizon of peat which had been exposed beneath the topsoil.

Initial observations revealed an extensive, well-preserved, peat deposit which was rich in organic matter and incorporated large timbers. The Golf Club was informed that (in the opinion of the Field Officer) a moderately intensive archaeological programme should be maintained and that the site should be inspected by an environmental archaeologist (Mr J Rackham), to assist with the interpretation of deposits. On inspection, the environmental archaeologist suggested that the (peat) deposits were, potentially, very significant to the interpretation of the vegetation history of the site and its immediate environment during the early post-glacial period, and advised a sampling strategy.

The Assistant County Archaeological Officer was informed of developments taking place at the site, and it was suggested that all necessary samples should be taken with a view, possibly, to carrying out specialist analyses as part of a post-excavation programme. The environmental archaeologist also re-inspected the site and took further samples, assisted by the Field Officer. These included large timbers that would be suitable for dendrochronology (tree-ring dating).

A presence was maintained during the remaining excavations; to a point at which the peat deposits thinned, rendering it unlikely that further timbers large enough for dendrochronological determination would be recovered. Following the completion of excavation and battering of the lagoon sides, the Field Officer returned to the site to survey the excavation at an appropriate scale.

Basic archaeological recording was undertaken using standard context record sheets (incorporating physical descriptions, interpretations, and stratigraphic relationships). Sections were drawn to scale (1:20), and a comprehensive photographic archive was maintained (some prints are reproduced in this report). Artefacts (pottery, animal bone etc.) were not recovered from stratified contexts.

Section drawing locations were plotted on a final 1:100 post-excavation plan (Fig. 2). All of the site drawings will be incorporated as part of the overall project archive.

4.0 Archaeological and Historic Background

Prehistoric artefacts have been recovered from around the present village, including a hand axe and a polished flint axe which was dredged from the River Trent on the west side of Torksey Island. A Neolithic flint adze has also been recovered from a garden, and residual worked flints were recovered during recent excavations at Castle Farm.

In the historical era, Torksey became significant in the Roman period. Pottery kilns of 3rd century date have been excavated on the south side of the Fosse Dyke at Little London Farm (Whitwell 1992, 58). The potters specialised in the production of grey ware/utilitarian vessels and, like similar production sites at Lea and Knaith, were ideally placed for water transportation to important centres such as Lincoln (*Lindum*).

Due to the difficulties associated with sourcing ceramic fabrics, it has not been possible to relate the wares from sites in Lincoln with production centres such as those at Torksey (Field and Palmer-Brown 1991, 56).

No evidence of Romano-British occupation has been found north of the Fosse Dyke (Barley 1964, 172), though a single sherd of pottery (from a residual context) was recovered during an archaeological evaluation south of the church (Palmer-Brown 1996, 4).

Despite being of minor economic interest today, Torksey was one of the principal towns in Lincolnshire during the middle ages. The earliest historical reference occurs in AD873 when the Danish army, under their king *Halfdene*, wintered at a place called *Turcesige* after plundering Northumbria (Hill 1965, 306). At the time of the Domesday Survey (1086) Torksey was the third largest borough, after Lincoln and Stamford; it possessed a mint in the late 10th/early 11th centuries and probably a court (*burwarmot*) (Barley 1964, 167).

The prosperity of the borough during the later 12th and early 13th century was reflected by the extent ecclesiastical foundations. The parish retained three medieval churches; dedicated to All Saints, St Peter and St Mary. These eventually came into the possession of the Augustinian priory of St Leonard, founded during the reign of Henry II. A small nunnery of the Cistercian Order, later known as *St Nicholas de Fosse*, was established south of the town (*ibid.*).

Torksey's privileged position, at the junction of the Trent and Fosse Dyke, no doubt contributed to its rapid growth and initial prosperity. By the late 13th century, however, the Fosse Dyke was beginning to fail. By the mid-14th century wool from Lincoln, for example, was being transported by road to Hull via Barton-upon-Humber instead of Torksey (*ibid*, 311).

Torksey Castle, which lies on the west side of the village against the River Trent, was given its name only in the 19th century. It is in fact an Elizabethan manor whose fabric included reused materials robbed from the ruins of St Leonard's Priory. It was sacked by Royalists during the English Civil War in 1645 and was never rebuilt.

Site specific information is not included within the county SMR, but the project brief notes: 'Air photo interpretation by the RCHME has indicated the presence of earlier field boundaries in this area' (George 1996, *s* 4.4).

5.0 Results

5.1 Stratigraphy

As noted in section 3.0 , the lagoon was excavated by a vertical cut method. This enabled rapid initial assessment of the stratigraphy.

There follows a descriptive account of the deposit sequence recorded at the site; which should be read in conjunction with Figure 2.

The site was sealed by a modern ploughsoil which measured between 0.3 and 0.4 m. in depth, (100). It comprised grey humic silty sand with inclusions of sub-rounded pebbles and angular flints. The ploughsoil sealed deposits of wind-blown sand, (101) and (104)b), and part-sealed a peat horizon, (102).

Context (101) was a fine-medium coarse yellow sand, striated with laminate bands of grey silt or alluvium. In the south-west corner of the development it partially sealed the peat. Despite careful examination of the interface between the ploughsoil, wind-blown sand and the peat, it was not possible to established whether or not (101) was strictly confined to the south-west corner or whether it had originally sealed the peat completely (its northern extent having become part of the actual ploughsoil through repeated reworking).

The peat consisted of an extensive lens-shaped deposit which extended over most of the development. At its deepest point, three distinct stratigraphic units were defined: the upper 0.4 m. comprised a firm humified horizon of compacted fibres within a pure organic black matrix. The central unit, which was 0.25 m. in thickness, possessed a light red-brown hue and contained the fibres of ?rushes, ?alder, ?birch, as well as seed and insect remains. The lower 0.35 m. was a black organic matrix mixed with some sediment and sand at the base. It was rich in preserved wood, including oak trunks (one of which exceeded 10m in length).

The peat, and cover sand (101), sealed a deep buried soil or *palaeosol* (103). This sand-based layer was characterised by an upper white (leached) horizon 0.08 m. deep, overlying a dark brown horizon containing black striations *c.* 0.27 m. deep. It formed a gradual interface with the underlying cover sand (104)b from which it derived, and it terminated abruptly in the north-west corner of the development.

Cover sand (104)b was of variable depth (up to 3 m.). Primarily yellow-orange with occasional grey alluvial bands, it formed white dunes in the south-west and south-east corners of the development. It was the most extensive deposit exposed during the brief, reaching the south, east and west limits of the development. At the east end it sealed a grey sticky sediment, (105), which was 0.18 m. deep and contained black striations and iron salts. This in turn sealed a basal deposit of red river-derived sand/gravel (106).

A grey sand deposit (104)a of variable depth was sealed below peat (102) from the north-west corner (where the buried soil ceased) to the north-east corner, and extended south beyond the excavation limit.

Soil sampling involved the removal a column through the palaeosol, (103), bulk sampling of the peat, (102), and sediment, (105). Sections were cut through preserved oak timbers; of a size suitable for dendrochronology (ie tree-ring dating) and it is understood that these are currently being stored at the Dendrochronology Laboratory attached to the Dept. of Archaeology and Prehistory, University of Sheffield.

A report, detailing the initial results of the fieldwork, was submitted in January 1997. However, at the request of the client and the County Archaeological Officer, this was subsequently modified to incorporate the results of two radiocarbon determinations: from the upper and lower peat horizons. These dates were obtained to determine the antiquity of the deposits - at the time of the excavations, it was anticipated that the buried soil horizon/palaeosol could date to the immediate post-glacial period (ie the Mesolithic or Middle Stone Age). Buried soils of this date are extremely rare (unheard of in Lincolnshire) and, had the working hypothesis been correct (see below), the peat deposits would have contained extremely useful information relating to the vegetation history of the immediate environment and, of course, a context for human communities living within it (the latter should not detract from the fact that the samples retain great potential significance; though their implications are for later phases of prehistory and the proto-historical era).

5.2 Interpretation

The original report/interpretation was based only on observations made in the field. To the greater extent, therefore, that interpretation was little more than a working hypothesis - that the buried soil/palaeosol was an early post-glacial formation. However, two subsequent radiocarbon determinations (below) now indicate, beyond reasonable doubt, that the palaeosol was in fact later, as it was sealed beneath a sediment sequence which commenced in later prehistory.

The basal red sand deposit (106) is a natural river deposit, probably an upper margin of terrace gravel. At the east side of the site, a hollow preserved an *in situ* lacustrine deposit from a glacial lake, (105). This was sealed by an extensive wind-blown sand (104)b. Dating from the late glacial period, this was a gradual shifting accumulation which formed an undulating landscape with dunes in the south-east and south west corners of the development. Early in the current (Flandrian) period, a soil horizon (103) began to develop. This marked a stabilisation of the shifting dune environment by vegetation growth. Wind-blown movement of sand deposits continued, however, as the soil horizon was partially sealed by further cover sand (101).

The palaeosol and underlying wind-blown sand was 'cut' or eroded by an extinct meandering water course (possibly an off-shoot of the River Trent) which redeposited it as a grey water-washed deposit (104)a. At some point, flow within the channel ceased: either as a result of the creation of an oxbow lake, or an abrupt change in the river course following (for example) a flood. This resulted in a standing water environment which gradually became infilled with organic detritus, leading to the creation of peat deposits, (102), which partially sealed (and preserved) the palaeosol.

Following an agreement between the County Archaeologist and the Lincoln Golf Club, two samples of the peat were submitted for radiocarbon dating. The purpose of this submission was basically to determine the antiquity of the peat (and hence the potential of palaeoenvironmental remains preserved within it) and provide a context for the palaeosol (which, as noted, was potentially an early post-glacial formation). The results

of the radiocarbon determination were recently relayed to the writer by Mr J Rackham for inclusion within this text.

The two samples were removed from the lowest and the highest peat deposits in the sequence, with a view to dating the start and termination of peat accumulation within the hollow exposed as a result of lake development. These samples were then sent to Beta Analytic Inc., Miami, Florida. The results are presented as follows:-

Sample 1: bottom of sequence (Lab. ref. Torksey 0 to -5cm; Beta 110200)

The sample, which was recovered from the base of the channel sequence, has resulted as follows: 2540 ± 60BP - calibrated at 2 sigma (95% probability). BC 815 - 415 (intercept is at **BC780** and the 1 sigma range is BC 795 - 755 and BC 685 - 540).

Sample 2: top of peat sequence (Lab. ref. Torksey 40 to -50cm; Beta 110201)

The result for the top sequence is as follows: 1920 ± 70BP - calibrated at 2 sigma (95% probability). BC45 to AD245 (intercept is at **AD90** and the 1 sigma range is AD25 - 160).

6.0 Discussion and Conclusions

The current (Flandrian) period began *c.* 10,000 years ago with the ending of the Devensian glaciation: the last in the series of the great 'ice ages' of the Pleistocene. The end of the Devensian resulted in mass extinction of cold climate fauna and flora and a rise of *c.* 106 m. in mean sea level.

Within the archaeological record, the first artefactual evidence for post-glacial activity comprises Mesolithic flint work, produced by hunter-gatherer communities. Based upon industries first developed during the Upper Palaeolithic, these assemblages consist largely of small blade technologies, becoming increasingly geometric with time.

Mesolithic settlement sites are rare due to the numerous taphonomic processes which have taken place since deposit formation: plough damage and natural soil profile developments, for example, all destroy occupation stratigraphy, leaving only scatters of worked flint as settlement indicators.

Mesolithic flint scatters were identified at Newton Cliffs by Mr R Minnit. Over a period of 18 years, Mr Minnit collected more than 33,000 artefacts (Phillips 1989, 87). The fields which were walked were subject to excavations which showed that prehistoric features did survive within the cover-sands, including a post hole structure associated with mesolithic flint work (Garton 1982, 100).

In view of the above, the positive identification of a Mesolithic ground surface and, perhaps more importantly, an overlying peat deposit containing a multitude of organic remains, would have introduced an important palaeoenvironmental context for artefacts of this date recovered from Torksey itself, and the surrounding area. However, the results of the radiocarbon determination indicate that the peat deposits

appear to have accumulated between the later Bronze Age and the Romano-British period: by implication, the buried land surface must date to a later phase of prehistory.

Despite the above, the importance of the deposit sequence cannot be over-stated. The peats and sediments exposed/sampled contain data pertinent to a comprehensive reconstruction of the local environment between the later Bronze Age and the Roman period in this part of the Trent Valley. Superficial inspection of the peats indicated the presence of seeds, wood fragments and other macrofossils. Pollen also is likely to be preserved within such deposits which can provide invaluable information relating to vegetation history (including the effects of human populations such as deforestation and agricultural practice). Also, timbers recovered from the lower peat could, at some future date, be submitted for dendrochronological determination (and used as a benchmark from which to assess the reliability of the radiocarbon dates, which always incorporate a broader margin of error).

It is understood that some further work will be carried out on samples recovered from the site and that these will be submitted as part of the general project archive (and perhaps researched at some future date). This work falls beyond the scope of the writers and is a matter for the attention of the County Archaeologist and the Golf Club.

7.0 Acknowledgements

Pre-Construct Archaeology (Lincoln) express their sincere thanks to The Lincoln Golf Club for this commission. Thanks are also expressed to James Rackham (environmental archaeologist) and Steve Catney (County Archaeologist) for their supportive and/or curatorial roles in the project.

8.0 Appendices:

8.1 Site archive

The site archive consists of :
Paper Element:

x 1	Project Specification
x 2	General account sheets
x 4	Context record sheets
x 3	Site drawings
x 1	Colour print film

Object Element:

x1	Column sample
misc.	Bulk samples of Peat (102), Alluvium (105) and oak Timbers

Primary records are currently with PCA (Lincoln). An ordered archive of both paper and object elements is in preparation and will be deposited at the City and County Museum, Lincoln, within six months following project completion.

Environmental samples are currently with J Rackham, though it is understood that these will eventually be deposited as part of the general site archive.

8.2 References

Barley, MW 1964 'The Medieval Borough of Torksey: Excavations 1960 - 62' *Antiq. J.* **44**, 164 - 87

Field, FN and
Palmer-Brown, CPH 1991 'New evidence for a Romano-British greyware pottery industry in the Trent valley' *LHA* **26**, 40 - 56

Garton, D 1982 'Newton Cliffs, Lincolnshire/Nottinghamshire' *LHA* **18**

Garton, D; Phillips, P and Henson, D 1989 'Newton Cliffs: A flint working and settlement Site in the Trent Valley' *BAR (British Series)* **208 (ii)**

George, I 1996 'Lincoln Golf Club, Torksey' *Brief for an Archaeological Watching Brief*

Hill, JFW 1965 *Medieval Lincoln*

Palmer-Brown, CPH 1995 'Castle Farm, Torksey' *Archaeological Excavation Report* (unpublished)

1996 "Verity' Church Lane , Torksey' *Archaeological Field Evaluation Report* (unpublished)

Whitwell JB 1992 *Roman Lincolnshire*

8.3 List of Contexts

Context	Depth	Description
100	30-40 cm.	Recent plough soil horizon; very humic and comprised of 60% sand and 40% alluvium. Occasional small angular flints and rounded pebbles. Seals site
101	*c.* 400 cm.	Layer comprised of well sorted yellow-orange medium sand in the south west corner of the site. Occasional bands of light grey alluvium. Diffuse interface with [104]b; Partially seals [102] and [103]. Wind blown cover sand.
102	variable to 1.0 m.	Rapidly formed peat deposit comprised of three distinct horizons:
103	*c.* 0.35 m.	Preserved soil horizon, upper 0.08 m. leached by a pumice effect caused by overlying peat. Bulk of deposit a dark brown medium coarse sand with black striations. Forms a gradual interface with (104).
104a	variable	Re-worked coversand within extinct river channel. Light grey and well sorted.
104b	Variable to 3.0 m.	Yellow-orange / white late glacial/early post glacial wind-blown cover sand. Forms dunes in S-W and S-E corners.
105	*c.* 0.18 m.	Alluvial band of bluish-grey clay with black striations and some iron panning. glacial pond ? environment
106	>1.8 m.	River lain red sand deposit, upper gravel terrace ? as lower margins include a greater proportion of gravel inclusions.

8.4 Colour Plates


Plate 1


Plate 2

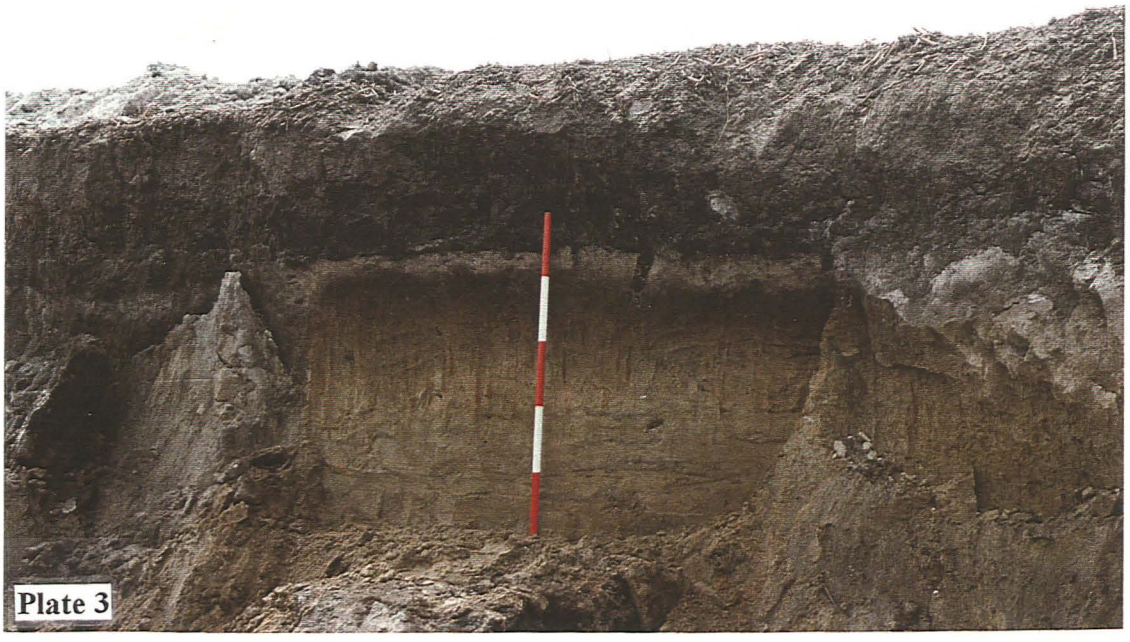
Plate 3

Plate 1: ***in situ*** **buried soil (103) sealed by humified peat (102)**

Plate 2: Peat deposit (102) showing three distinct bands over redeposited cover sand (104)a.

Plate 3: General shot of buried soil, peat and cover sand.

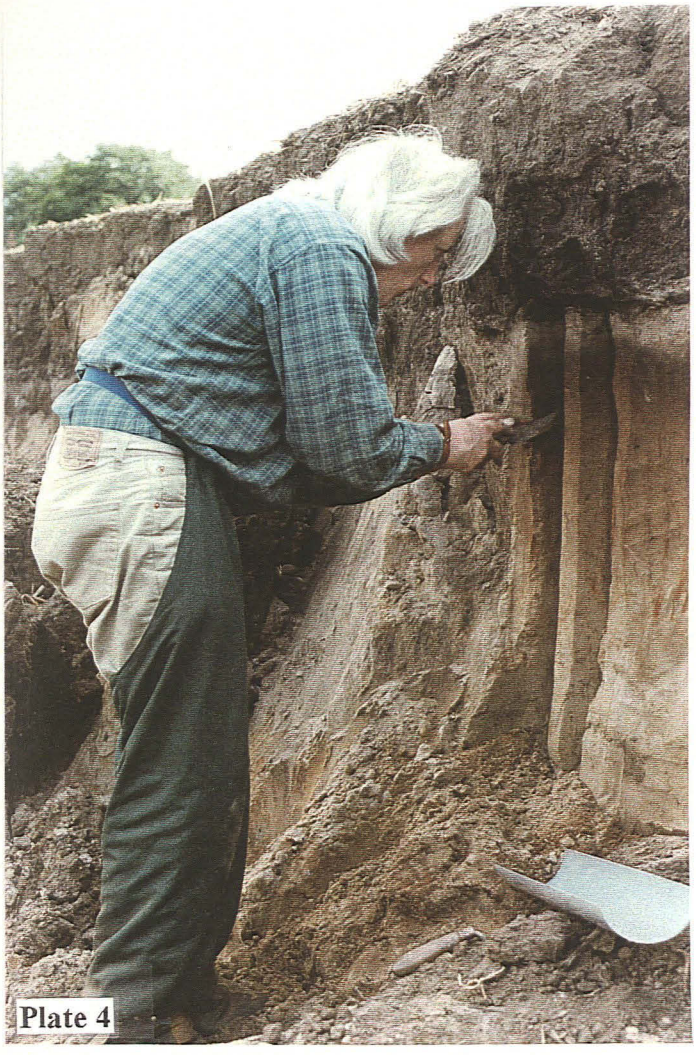

Plate 4

Plate 5

Plate 6

Plate 4: Mr DJ Rackham undertaking column sample through buried soil (103)

Plate 5: Dendrochronological samples being taken through preserved oak timbers by Mr DJ Rackham.

Plate 6: An example of one of the timbers sectioned during the brief

≙ 3.774 m. OD

≙ 4.070 m. OD

Reworked cover sand (104)a

Cover sand (104)b

≙ 4.165 m. OD

Alluvium (105)

Red sand (106)

≙ 4.195 m. OD

Water Level

≙ 3,280 m. OD

Dune

≙ 3.430 m. OD

≙ 4.025 m. OD

≙ 3.785 m. OD

S

N

[100]

[102]

[103]

≙ 4.850 m. OD

[104]b

Section 1

S

N

[100]

[101]

[102]

≙ 2.355 m. OD

[104]a

[104]b

Section 2

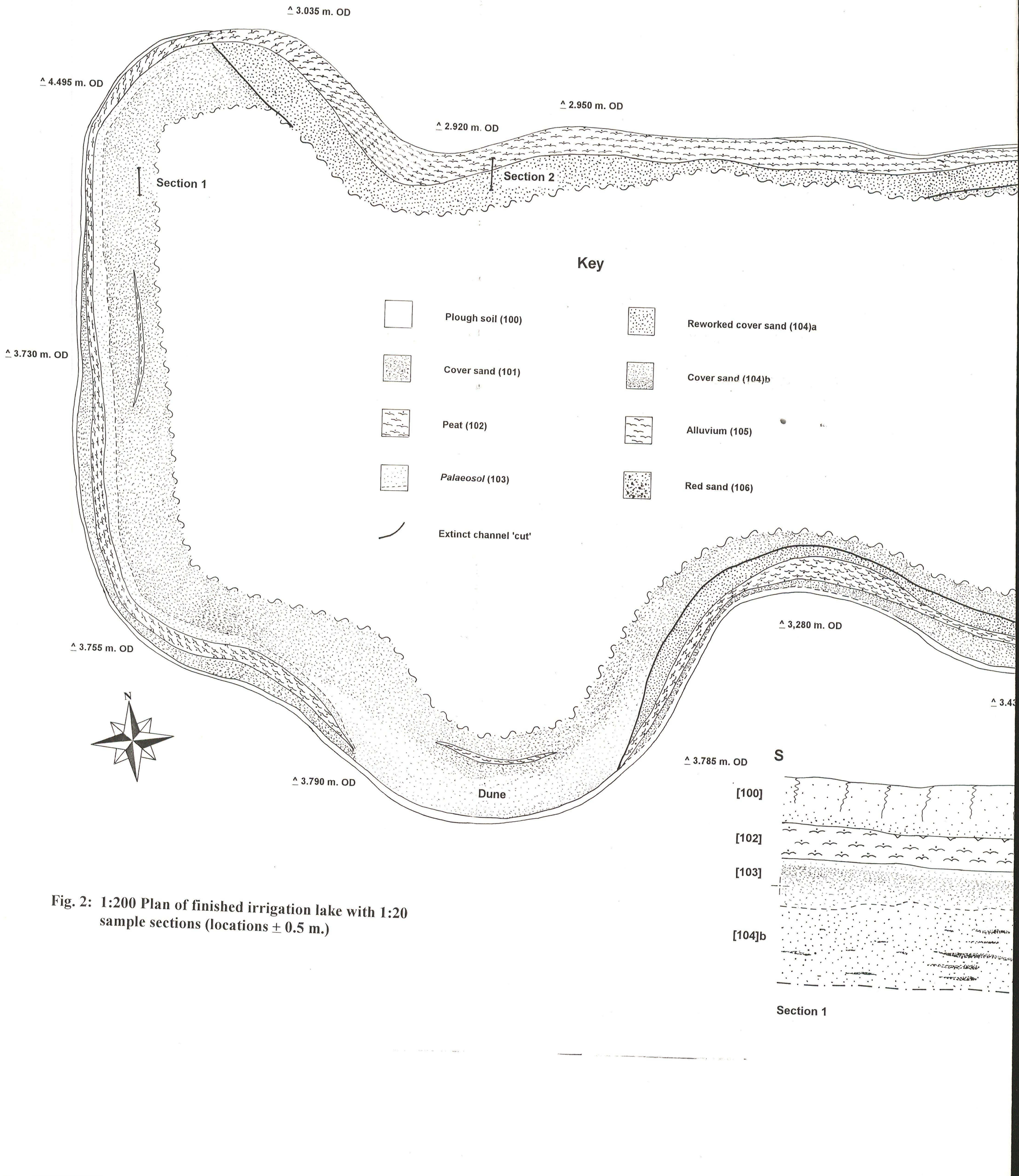

Fig. 2: 1:200 Plan of finished irrigation lake with 1:20 sample sections (locations ± 0.5 m.)