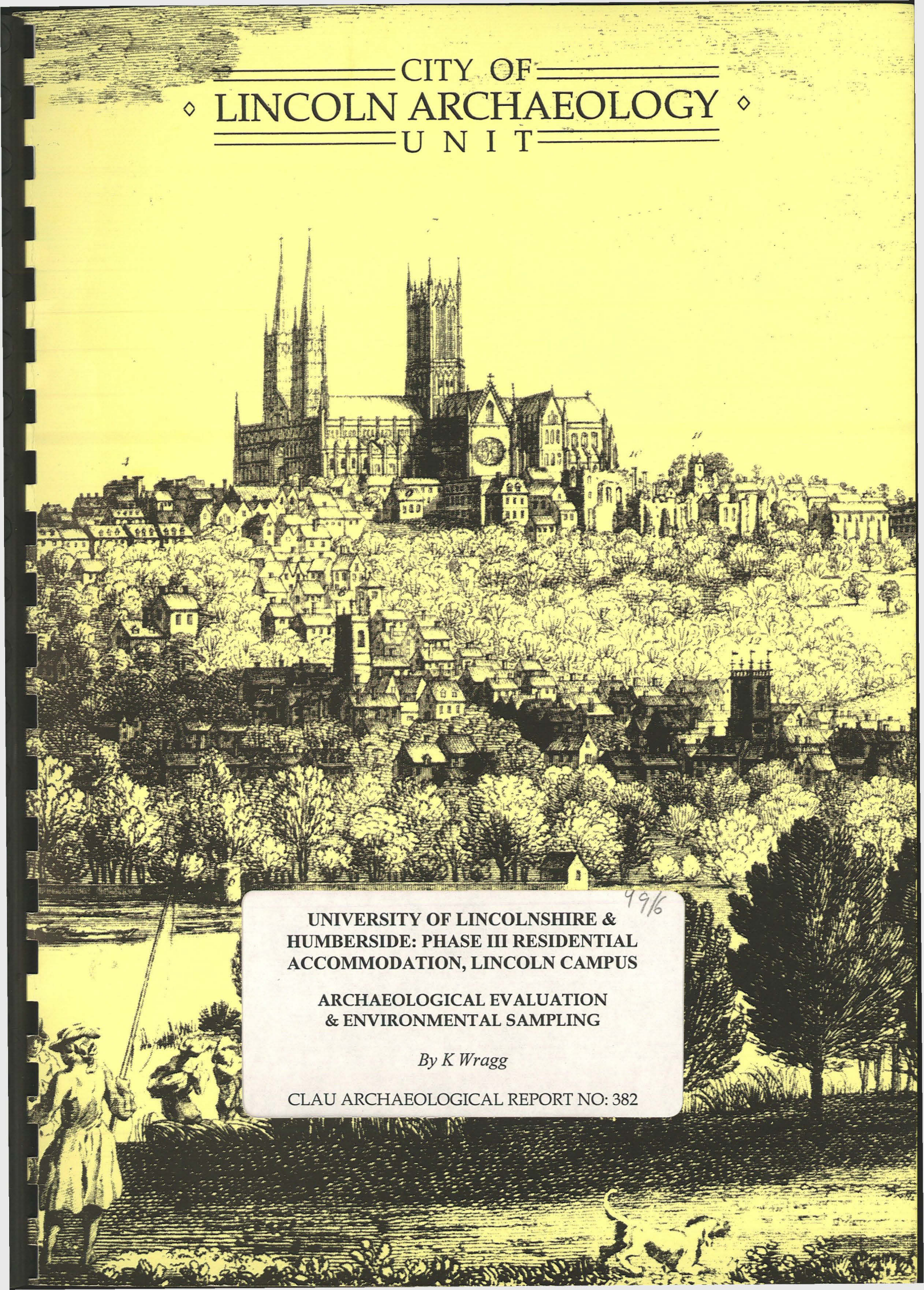
CITY OF
LINCOLN ARCHAEOLOGY
UNIT



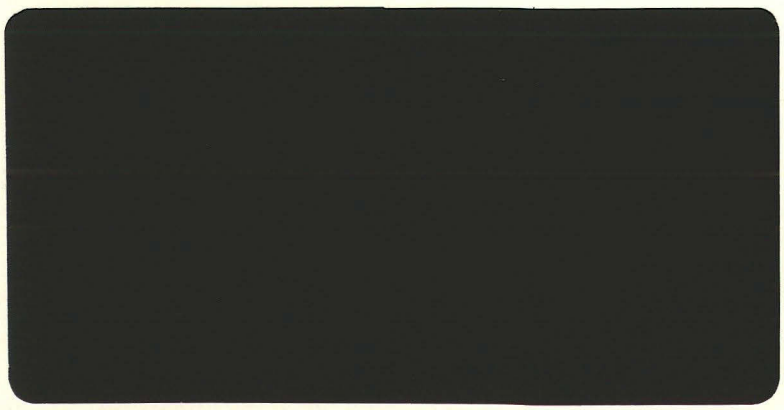
99/6

UNIVERSITY OF LINCOLNSHIRE & HUMBERSIDE: PHASE III RESIDENTIAL ACCOMMODATION, LINCOLN CAMPUS

ARCHAEOLOGICAL EVALUATION & ENVIRONMENTAL SAMPLING

By K Wragg

CLAU ARCHAEOLOGICAL REPORT NO: 382



A
Report to
Linpave Building Limited
on behalf of
The University of Lincolnshire
& Humberside Company

April 1999

Prepared by

The City of Lincoln Archaeology Unit
Charlotte House
The Lawn
Union Road
Lincoln
LN1 3BL

Tel: Lincoln (01522) 545326
Fax: Lincoln (01522) 548089

Site Code: UCLE98
LCCM Accession No.: 177.98
NGR: SK 9685/7125

UNIVERSITY OF LINCOLNSHIRE & HUMBERSIDE: PHASE III RESIDENTIAL ACCOMMODATION, LINCOLN CAMPUS

ARCHAEOLOGICAL EVALUATION & ENVIRONMENTAL SAMPLING

By K Wragg

CLAU ARCHAEOLOGICAL REPORT NO: 382

UNIVERSITY OF LINCOLNSHIRE & HUMBERSIDE: Phase III Residential Accommodation, Lincoln Campus

Archaeological Evaluation & Environmental Sampling

Contents *Page*

UNIVERSITY OF LINCOLNSHIRE & HUMBERSIDE: Phase III Residential Accommodation, Lincoln Campus

Archaeological Evaluation & Environmental Sampling

Contents (continued) *Page*

List of General Report Illustrations

UNIVERSITY OF LINCOLNSHIRE & HUMBERSIDE: Phase III Residential Accommodation, Lincoln Campus

ARCHAEOLOGICAL EVALUATION & ENVIRONMENTAL SAMPLING

NON-TECHNICAL SUMMARY

This project was prompted by plans to construct five multi-storey student residences at the University of Lincolnshire & Humberside, Lincoln. The proposed site for the development was a parcel of land lying immediately to the west of the Ropewalk-Carholme Link Road, and bounded by the main university access road.

This development formed the third phase of residential accommodation on the university site, and marked the last major construction in the northern part of the University site (i.e., north of the railway line). The construction was expected to follow the same methodology as previous development, being founded on reinforced concrete piles with limited ground disturbance.

Previous archaeological watching briefs undertaken on this type of construction (including on other parts of the university site) have generally been found to be unproductive, with little opportunity for detailed observation or controlled environmental sampling. As the site is recognised as one of the most important areas of the city in terms of its palaeoenvironmental potential, an alternative approach was proposed by the City of Lincoln Archaeology Unit (C.L.A.U.), in consultation with the planning department of Lincoln City Council. This would concentrate on pre-construction sampling rather than an archaeological watching brief in conjunction with the construction groundworks. A series of eight trial trenches was proposed across the development area to be excavated to depths of c.1.2m. This depth would be sufficient to remove any modern dumping/levelling deposits, revealing the undisturbed deposits below. Hand-augering would then be carried out from this level under the direction of a palaeoenvironmental specialist, in order to secure environmental samples for detailed analysis. The results of this analysis would then be combined with the results from previous projects to assess the whole site.

These proposals were duly approved by the Lincoln City Archaeology Officer, Mr I.George, and adopted by the Department of Planning.

The City of Lincoln Archaeology Unit was commissioned in July 1998 by Linpave Building Limited, on behalf of the University of Lincolnshire & Humberside, to carry out the required archaeological works on the site. Investigation was carried out between the 4th and the 6th of August 1998, and while the excavation of the trial trenches themselves did not produce any new archaeological finds or features, the deposit sampling has produced important information relating to the early landscape and environmental conditions of the area.

This part of the project has served to identify an ancient channel running into the western end of the Brayford Pool, together with an area of sand lying above the 3m OD contour. The channel almost certainly represents the original course of the River Till prior to the construction of the Fossdyke canal: the date of the earliest stagnant deposits could date the canal. The elevated sand 'island' identified to its south offers a possible location for prehistoric settlement.

The deposits on the site have again been shown to hold great palaeoenvironmental potential. Further investigation would offer the possibility of discovering the prevailing environmental conditions since prehistoric times, as well as evidence for prehistoric (and later) archaeological occupation (especially to the south of the railway), and possibly the construction date of the Fossdyke Canal.

UNIVERSITY OF LINCOLNSHIRE & HUMBERSIDE: Phase III Residential Accommodation, Lincoln Campus

ARCHAEOLOGICAL EVALUATION & ENVIRONMENTAL SAMPLING

1.0 INTRODUCTION

This project was prompted by plans to construct five multi-storey student residences at the University of Lincolnshire & Humberside, Lincoln. The proposed site for the development was a parcel of land lying immediately to the west of the Ropewalk-Carholme Link Road, and bounded by the main university access road (see Fig.4). The majority of the area was in use as a temporary car-park, although part of the site to the east was formerly the site of a contractors compound.

This development formed the third phase of residential accommodation on the university site, and marked the last major construction in the northern part of the University site (i.e., north of the railway line). The construction was expected to follow the same methodology as previous development, being founded on reinforced concrete piles with limited ground disturbance.

Previous archaeological watching briefs undertaken on this type of construction (including on other parts of the university site) have generally been found to be unproductive, with little opportunity for detailed observation or controlled environmental sampling. As the site is recognised as one of the most important areas of the city in terms of its palaeoenvironmental potential, an alternative approach was proposed by the City of Lincoln Archaeology Unit (C.L.A.U.), in consultation with the planning department of Lincoln City Council. This alternative would concentrate on pre-construction sampling rather than an archaeological watching brief in conjunction with the construction groundworks (an approach recommended for the previous Phase II student residences and the LRC building, but unfortunately not carried out).

A series of eight trial trenches was proposed across the development area (see Figs.4 & 5), to be excavated to depths of c.1.2m. This depth would be sufficient to remove any modern dumping/levelling deposits, revealing the undisturbed deposits below. Hand-augering would then be carried out from this level under the direction of a palaeoenvironmental specialist, in order to secure environmental samples for detailed analysis. The results of this analysis would then be combined with the results from previous projects to assess the whole site.

These proposals were duly approved by the Lincoln City Archaeology Officer, Mr I.George, and adopted by the Department of Planning.

The City of Lincoln Archaeology Unit was commissioned in July 1998, by Linpave Building Limited, on behalf of the University of Lincolnshire & Humberside, to carry out the required archaeological works on the site. Investigation was carried out between the 4th and the 6th of August 1998.

The information in this document is presented with the proviso that further data may yet emerge. The Unit, its members and employees cannot, therefore, be held responsible for any loss, delay or damage, material or otherwise, arising out of this report. The document has been prepared in accordance wit the terms of the Unit's Articles of Association, the Code of Conduct of the Institute of Field Archaeologists, and *The Management of Archaeological Projects 2* (English Heritage, 1991).

2.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Historical Evidence

Lincoln is situated at the point where the Jurassic limestone ridge known as the Lincoln Edge is cut by a glacial gap, through which the River Witham now flows. At its junction with the River Till, canalised as the Fossdyke, flowing from the west, is a presumed natural lake, the Brayford Pool. Its extent was much greater in antiquity than at present, and it is known to have existed at the time of the Roman Conquest. The first syllable of the colloquial Roman name for the City of Lincoln, *LINDUM*, was derived from the Celtic word for "lake", "pool" or "marshy/water place" (Rivet & Smith, 1979).

The earliest evidence recorded for settlement around the Brayford Pool dates to the 1st century BC, but there is a possibility of earlier Prehistoric occupation in this area. Evidence for any such occupation may be provided by study of environmental remains.

Occupation along the fringes of the Brayford Pool continued during the Roman period and, by the end of the 2nd Century AD, the colonia wall had been extended almost down to the river front. Excavations have indicated that the south wall was probably close to the then river-line, c.50m north of the present Brayford Pool.

It is generally assumed that the Fossdyke canal connecting the Brayford Pool with the river Trent at Torksey was formed during the period of Roman occupation. The cutting of a channel for the first four miles from Lincoln was probably achieved by straightening the course of the river Till.

In addition extensive reclamation has taken place along the banks of both the Witham and Brayford Pool since the Roman period.

Many Lincoln place names are of Scandinavian origin. Of particular interest is "Carholme" (derived from Old Norse, Kiarr - "marshground", and Holms - "islands in the land" near the river, which flooded in winter), and Brayford whose early form "Braytheford" and the associated "Braedmere" has origins in the Old English "Brad" or the Scandinavian "Breit" or "Breior" meaning broad (the broad ford or broad mere), the pool being much larger in the Middle Ages than now (Cameron, 1985).

During the Medieval period a new suburb of Newland (="newly reclaimed" or "newly settled" land) occupied land to the north of Brayford Pool and the Fossdyke beyond. There were probably several periods of reclamation as the waterfront was advanced, and these operations may have commenced before the Norman Conquest.

By the end of the 13th century the west wall of the city incorporating the Newland Gate had been extended southward beyond the earlier south wall to Brayford Pool, terminating at a round stone tower on the Brayford bank which became known as the "Lucy Tower".

The later recorded history of the area is most closely linked with the efforts to reopen the Fossdyke and the further development of Brayford Pool from Newland along Carholme Road.

Following the reopening of the Dyke in 1744, the Brayford Pool was rapidly turned into an inland port, and by 1817 substantial wharves, warehouses and coalyards had been established on both north and east banks where gardens had earlier stood.

The 19th century saw further development of the wider area resultant from the raising of the south bank of the Fossdyke, related drainage works, the coming in mid-century of two railway companies, and further expansion of industry.

South of Brayford Pool, a low-lying area of land called the Holmes Common was probably waterlogged and marshy until the early 19th century drainage works, and the raising of the south bank of the Fossdyke, which, together with associated drainage works, formed the Delph.

Following mid-19th century acquisition of the area south of the Brayford Pool by the Great Northern Railway, the Fossdyke ceased to be Lincoln's commercial highway, as waterborne trade gradually gave way to the age of steam. The acceleration of industrial development in the late 19th century led to rapid expansion of the railways with sidings and goods yards being constructed on land progressively

reclaimed across Holmes Common south of the Brayford Pool.

The south bank of the Brayford was pushed further north by reclamation with new railway wharves and a boat-building yard being developed along the southwest bank early in the 20th century.

Subsequent changes in the use of this area of land up to the present day have been largely superficial, being principally allied to industrial/commercial development and the changing fortunes of local railway services in the East Midlands.

2.2 Archaeological Evidence

All of the archaeological projects to have taken place recently across the development area were prompted by the construction of the new University campus, and the Ropewalk-Carholme Road link. The results are summarised as follows:

1) Geotechnical trial pits excavated during February 1992 for the Highways and Planning Department of the Lincolnshire County Council (during the planning phase of the Ropewalk-Carholme Link road).

Nine trial pits were excavated, revealing a general stratigraphic sequence comprising sands, overlain by an organic horizon, which was in turn sealed by reclamation landfill and modern occupation layers (Hockley, 1992).

Environmental samples recovered from several trial pits suggested a partially forested wetland/swamp. Some very slight evidence for cereals (possibly indicative of farming/human activity on or close to the site) including cereal pollen and Hemp (cannabis) was also recorded.

2) Further geotechnical trial pits excavated in 1994, as part of the Lincoln City Council site investigations to assess the extent of contamination across the site.

During this evaluation the earliest deposits recorded appeared to be associated with the neighbouring Brayford Pool and the areas of marshland to the west, including layers of peat, and other organic horizons, overlying natural sands and clays. The remainder of the deposits seemed to be a result of industrial and railway activity dating from the mid 19th century, together with more modern land-fill dumping seen in the south-western quadrant of the development area. In the areas previously occupied by the railway engine shed, and its associated installations, considerable amounts of ash and clinker (a by-product of steam engine operation) were present together with areas of contamination caused by oils and fuels.

From an environmental point of view, the initial results showed very promising biological conditions on the site relating to the fauna and flora surrounding the Brayford Pool and its attendant marsh/woodland environment. No evidence for prehistoric human occupation was however, discovered.

Peat found in some samples, mainly concentrated in the more northerly areas of the site, appeared to have been laid down in reed marsh and wet alder woodland, and radiocarbon dating of two deposits revealed close to the southern edge of the Brayford Pool indicate that these deposits may have accumulated during the period covering 2850 B.C. to 1150 B.C., i.e. late Neolithic to Bronze Ages (Wragg 1994, Hockley & Wragg 1994).

3) The watching brief carried out during the University phase I construction groundworks, and the works associated with the Ropewalk-Carholme Road link.

The earliest deposits recorded again appeared to be largely associated with the areas of marshland to the west, including layers of peat, and other organic horizons, overlying the natural sands.

Close to the Brayford Pool, the organic deposits were again revealed, but in this instance at a much greater depth, probably indicating the wider extent of the original lake, although this could not be positively confirmed.

Above this level, multiple bands of sand were present, either representing naturally occurring alluvial deposits, or later reclamation deposits associated with 18th and 19th century land-use.

The remaining deposits revealed during the groundworks all appear to relate to industrial

and railway land-use (dating from the mid 19th century).

No evidence for ancient human occupation was recorded (Wragg 1998).

4) Phase II of the University development included the construction of a new *Learning Resource Centre* (LRC) building (see CLAU report no.330), and five student residence blocks (CLAU report no.331), on land to the west of the existing main university building.

Unfortunately, the groundworks encompassed by the watching brief were all contained within an area largely made up of landfill material imported on to the site during the decontamination works in 1995. As a result the revealed deposits were all of modern origin, and no new archaeological information was forthcoming from this project.

3.0 ARCHAEOLOGICAL RESULTS

The main objective of this project was to provide an opportunity for a programme of controlled environmental sampling. Any important archaeological discoveries were expected to come from the subsequent analysis of the recovered material (see ***4.0***, below).

Therefore, the likelihood of encountering important archaeological remains during the trial trench excavation was expected to be minimal (especially in view of the shallow depth proposed), and as expected, no archaeological evidence for ancient occupation was revealed in these upper deposits.

The basic stratigraphic sequence revealed in each trench was as follows (see also Figs.4 & 5):

3.1 Trial Trench 1

This trench was situated at the south-west corner of the proposed development area, and was excavated to a maximum depth of 1.6m (i.e., c.3.29m O.D.). The trench itself measured 2.5m (E-W) x 1m (N-S).

The earliest deposit was [808], a 700mm thick layer of mixed/banded mid grey/orange-brown sand, containing occasional lenses of black organic material (a further 300mm thickness of this deposit was subsequently proven by auger).

[808] was overlain by [801], an 800mm thick mid brown sandy silt deposit. This contained brick and other modern debris, and included a *Terram* fibre membrane ([802]) at a depth of 700mm below the existing ground level (G.L.).

This layer was then sealed by a 100mm thick of stone hardcore, [800], which formed the surface of the temporary car-park.

3.2 Trial Trench 2

Trial Trench 2 lay close to the mid-point of the northern site boundary, and was of similar size to T.T.1.

Unfortunately, this trench had to be aborted almost immediately owing to flooding caused by ground water that had collected in a disused drain-pipe which crossed the trench.

3.3 Trial Trench 3

This trench was situated close to the southern boundary of the development area, and measured 2m (N-S) x 1m (E-W).

It was excavated to a depth of 1m (3.72m O.D.), and the stratigraphy revealed was identical to that seen in T.T.1.

3.4 Trial Trench 4

T.T.4 was again adjacent to the southern site boundary, and lay approximately 25m to the east of T.T.3 in the part of the site formerly occupied by a contractors' compound.

The trench was approximately the same size as before, and was excavated to a depth of 1.1m (i.e., c.3.3m O.D.). Owing to flooding (for similar reasons to T.T.2), no auger sampling could be carried out in this trench.

The stratigraphic sequence revealed was again similar to that revealed in Trenches 1 and 3, although the remains of a cast iron water pipe, [809], and a modern brick drain, [810] were present towards the lower boundary of layer [801].

3.5 Trial Trench 5

This was actually the first of the trial trenches to be excavated, and was located close to the centre of the site.

The trench measured 2m (N-S) x 1m (E-W), and was excavated to a maximum depth of 1.2m (3.5m O.D.). A further depth of almost 3m was investigated using the gouge auger.

The earliest deposit revealed by the trenching was [807], a dump of irregularly shaped limestone pieces revealed close to the limit of excavation (L.O.E.) at the southern end of the trench.

This was sealed by [806], a c.100mm thick layer of mid-dark grey sand which appeared to dip away sharply to the north.

[806] was overlain by [804], a 300mm thick layer of mid grey alluvial clay, the upper boundary of which lay at 3.8m O.D.

This clay deposit was then sealed by [803], a 300mm thick layer of modern limestone hardcore, which was in turn overlain by the levelling/dumping deposits [800] - [802] as described earlier.

3.6 Trial Trench 6

Trial Trench 6 was situated close to the south-eastern corner of the site, and was of a similar size to the preceding trenches.

It was excavated to a depth of approximately 1.1m (3.25m O.D.), and revealed a stratigraphic sequence very similar to that seen in T.T.5. Excavation and sampling were also aborted in this trench owing to flooding.

3.7 Trial Trench 7

This trench again measured 2m (NW-SE) x 1m (NE-SW), with a depth of approximately 1m.

The stratigraphy was similar to that in Trenches 5 and 6, comprising stone dumps overlain by alluvial clay.

3.8 Trial Trench 8

Trial Trench 8 was located at the north-eastern corner of the development area, and was excavated to a depth of c.1m.

The stratigraphic sequence was basically identical to that seen in Trench 5 etc., and subsequent augering (to a depth of 3.65m below the existing G.L.), revealed deposits of alluvium overlying layers of organic silts and peats.

In spite of the absence of definite, dated features, the programme of environmental sampling described in section ***4.0*** (below) has helped to elucidate the general stratigraphic sequence and its potential for understanding the early landscape.

4.0 PALAEOENVIRONMENTAL RESULTS & ASSESSMENT

By D.J.Rackham, Bsc, Msc, FSA
Environmental Archaeology Consultancy,
25 Main Street,
South Rauceby,
Lincolnshire,
NG34 8QG.

4.1 Introduction

As part of the ongoing archaeological assessment and watching brief on the Lincoln University site a programme of test pitting and subsequent augering of deposits beneath was instituted for the University Phase III Accommodation development. This was designed to consider the palaeoenvironmental potential of the site and illuminate the sedimentary sequence. The data from this exercise has been considered against the existing borehole data for the whole University site which has been plotted onto a base contour plan of the upper surface of the natural sands which overlie the sandy gravels or fissured Lower Lias clays across the whole of the site.

4.2 Augering on the University Phase III Accommodation site

A series of eight test pits was sunk by machine to approximately 1.2m depth across the development area (see Figs. 2, 4 & 5). Investigation of the deposits beneath was then conducted by augering with a 2.5cm gouge auger for approximately a further 2.8m. TT2 hit a drain and immediately flooded preventing the augering of the deposits in the floor of the trench. Trenches 6 and 7 were obstructed by stones within a few centimetres of the base of the trench which also prevented the augering of the deposits below.

All the trenches exhibited between 0.7 and 1.0m of recent fill and it must be assumed that there may have been some truncation of the upper levels of the recent sediment accumulations below. Therefore where the upper levels are discussed in this report they are based upon the surviving deposits and perforce take no account of any truncation that may have taken place as a result of industrial and other developments across the site during its recent history.

In trenches TT1, TT3 and TT4 along the southern side of the development the initial removal of the fill by machine exposed mixed grey and orange sands between 0.7 and 0.9m below the present ground surface. In trenches TT1 and TT3 these were augered to a depth of between 1.75 and 1.9m below present ground surface and the sands were found to continue (Figure 1). It was assumed that they represented the natural sands at these locations and the boreholes were taken no deeper. These results indicate that the prehistoric and later ground surface along the southern margins of the Phase III Accommodation site lay between a minimum of 3.7 and 4.0m OD and may not have been covered by the marsh and alluvial sediments present across much of the remainder of the site (see below).

Trenches TT7 and TT6 lay to the east and a little north of the above trenches (Figure 2). Augering of the trenches was not possible owing to obstructions, the latter identified as pieces of limestone in TT6. These appear to be a layer of 'dumped' stone across this part of the site. However the deposits underlying the fill at between 0.9 and 1.0m below ground surface were grey alluvial clays, and not sands, and these covered the obstructing layer of stone. This clearly indicates a period of regular flooding and build up of fine grained sediments to a height of 3.45m OD (in TT6) at this eastern end of the site, after the deposition of the stone layer, and was presumably of fairly recent origin.

Trenches TT2, TT5 and TT8 were excavated in the northern half of the site (Figure 2). TT2 was aborted due to flooding and TT5 was dug as a substitute. Both TT5 and TT8 produced a considerable depth, between 1.4 and 2.1 m, of grey blue alluvial clays beneath the fill, overlying dark fibrous brown peat with lenses of silty peat with mollusc shells. Augering in both trenches was terminated at a depth below ground level of 4.0 and 3.75m respectively. The upper surface of the alluvium lay at 3.55 and 3.76m OD respectively, while the upper surface of the underlying peats was at 3.3 and 2.46m OD. These figures show a general drop in the upper surface of these deposits towards the north eastern corner of the site and suggest that the basin within which the sediments lie is deepening in this direction towards the Brayford Pool.

The general results indicate that a bank of sand rises on the south west side of the site from

low lying marshy and flooded lands to the north, with a general fall to the east. The augered deposits comprise a sequence of peats formed in a marshy environment, with occasional silty peats and organic silts with freshwater molluscs that indicate a period of complete inundation forming in a basin on the north and east side of the site. The last phase of peat is covered with a fine-grained alluvial sediment suggesting repeated flood events but no marsh formation. This probably represents a period of intermittent flooding and drying such that a marshy environment was never able to establish and a coarse wet grassland seasonally under water might be an appropriate interpretation.

4.3 Reconstruction of the landscape on the University Site

In order to put the results of this work into a clear picture the wealth of test pit and borehole data for the university site was studied (Harrison and Company Report 5095; Delta Simons 93-168, 1994; Delta-Simons 93-168.02, 1994; Engineering Consultancy Services B1003/A57, 1994). The primary purpose of this was to conduct a rapid deposit modelling exercise and reconstruct the prehistoric land surface and subsequent depositional sequence across the whole site. The data from all test pits and boreholes with a recorded OD height for the modern ground surface (Table 1) were used to produce a contour plot of the upper surface of the natural sands that underlie the whole site (Figure 2). The contours were estimated on the basis of the distance between adjacent test pits and the difference in OD height of the upper surface of the sands where these were exposed, the assumption being that the gradient was constant over the distance between adjacent readings. For the distribution of sediments across the site and their depth an additional series of test pits, for which no record of the OD height of the modern ground surface was taken although their location is plotted, could be used to construct the sediment distribution plots (Delta-Simons 93-168.02, 1994). The plots presented in Figures 2 and 3 have therefore utilised the data from a total of 59 probe and boreholes and 135 test pits.

The borehole and test pit logs do not generally describe the deposits in the same detail as an archaeologist or sedimentary specialist might. It is therefore apparent from comparison of the test pit logs with those made by the archaeologists during watching of these excavations (Wragg 1994) that where log descriptions note clays, these may have been silts, and where log descriptions note peat, these may have been organic silts. This creates complications when reconstructing the distribution of the sediments, but for the purposes of this exercise for all records where organic silts and peats have been recognised these are treated together (i.e., as 'peat') in the plot bringing the information level down to the lowest common denominator. The resulting plots should not be treated as 'accurate', but a best approximation of both the sand contour and deposit distribution and depth across the site.

The results of the contour survey and the distribution and thickness of peat (peat and organic silt) across the site are presented in Figure 2. The analysis illustrates two major points. There is an area of land in the southern half of the University Site where the sands lie above approximately 3.5m OD and appear to have been free of flooding, or at least significant alluvial deposition or peat formation, with a second area indicated by the results of the test pits on the Phase III Accommodation site. Both these areas are encompassed by the 3m OD contour. The second major topographic element is a channel, at least 3.5m deep, across the north western part of the site which enters the Brayford Pool just to the south of the Fossdyke. A third, more localised, feature appears to be an area of high ground, up to 5m OD on the southern edge of the sand plateau in the south. This anomaly appears to be localised, occurring in only one test pit, and might indicate relatively recent upthrow of sand creating a small hillock, perhaps as the result of one of the various developments on the site in the last 200 years, but a feature such as a prehistoric barrow would create a similar anomaly.

These two major features describe the character of the area. The deep channel in the north, dropping to at least -1.4m OD in borehole 8 (Harrison and Company Report 5095), a bore located where the channel opens into the Brayford, clearly represents an ancient river channel and can presumably be equated with the original course of the River Till prior to the cutting of the Fossdyke. It is clear from Figure 2 that the two augers in TT5 and TT8 on the Phase III Accommodation site lie

towards the middle of this channel and probably contain sediments at least one and possibly two metres below those recovered during the augering. There is little indication from the contour plot that the Brayford Pool extended much further west than it does at present and the manner in which the sands rise along the northern edge of the site illustrates quite clearly that the Fossdyke at this point has been cut through sands that rose above 3m OD. Historically it would appear that the former channel remained visible until recent times, and can probably be equated with the Delph illustrated on Padley's map of 1842. On this map the land between the Delph and the Navigation is described as a bank so it is possible that the land along the northern edge of the site has been artificially elevated. Recent boreholes at Brayford Wharf East, on the eastern side of the Brayford Pool shows that the sands in this area lie below -2.5m OD (Rackham 1998) and indicate that the basin must drop even lower beyond the north eastern margins of the site.

The test pits and boreholes reveal a sequence of sediments infilling the southern margins of the Brayford, the ancient River Till and the western edges of the course of the River Witham. Some idea of the timescale over which these sediments have formed has been gained from two radiocarbon dates obtained from peat samples from test pit 33 (Delta Simons 93-168, 1994) near the eastern end of the site immediately south of the present Brayford Pool. At this location 2.2m of peat and organic sediments were revealed, and these deposits were not bottomed. A sample from the base of the sequence, approximately 2.14-1.74m OD produced a date of 4100~50 BP (2850 bc) (Wragg 1994) while a sample from the layer above, between 2.14 and 4.14m OD, yielded a date of 3100~60 BP (1150 bc). Since the underlying sands were not revealed in this test pit we must assume that organic sediments continue below those dated, a not unreasonable assumption given that such deposits have been recorded in a number of other bores and test pits down to -1.4m OD on the site. The conclusion is that sedimentation in the basin of the Brayford Pool must have commenced at least as early as the neolithic and potentially as far back as the mesolithic. The fact that these earliest deposits are peat (even in the deepest bores, such as that in borehole 6 adjacent to TT5 on the Phase III Accommodation site - Harrison and Company Report 5095 - the underlying sands are overlain directly by peat) indicates that they formed at the margins of a basin in which the water levels were rising and during this early period the sands above lm OD are likely to have been dry land. Various changes in the river system below the Lincoln gap and associated sea level changes may have been responsible for a continual rise in the water table over the next few millennia such that the marsh and peat deposits progressively moved up the sides of the sand plateau between the two rivers covering and making uninhabitable larger and larger areas of the site. Any archaeological occupation or activities that may have been taking place along the banks of these water courses will have been forced up the banks until they were restricted to the plateau above the 3m OD contour. Even this area was partly overtaken by marsh and peat formation such that less than half of the plateau was not covered by peats (Figure 2). The age of these upper peat deposits has not been established although it would appear that since the Delph was visible and apparently carried water in the l9th century, if this does mirror the course of the earlier river channel then at least in this area sediments may have been building up right up until the last century. If this is true then the sequence of over 3m of organic sediments in places on the site may contain a palaeo-environmental history covering over 5 millennia. Even with hiatus' in the sequence this would make these organic deposits an unparalleled source of environmental and vegetational history for the Lincoln area through late prehistory and much of the history of the modern (Roman and later) City.

In Figure 3 the extent of the alluvial and 'colluvial' sediments overlying the peats have been plotted. Truncation may have limited the surviving extent of these but given the historically wet condition of the area an assumption that in most cases the land was built up rather than reduced can be made, although peat cutting and sand extraction may have taken place on the site. Three identifiably different deposits overlie the peats and organic silts. In the channel of the River Till the peats are covered by grey and olive green alluvial clays. This has been most clearly seen during the fieldwork on the Phase III Accommodation site where TT5 and TT8 produced 1.5m or more of grey blue alluvial clays, the sequence in the latter being 2.25m thick with its lowest point at 1.5m OD and its highest level at 3.76m OD. These very fine grained deposits

suggest lacustrine sediments or overbank flooding and it may be that the bulk of these deposits have built up since the channel ceased to function as a river (i.e. after the construction of the Fossdyke). At the point where the Witham enters the Brayford further grey and grey brown clays and silty clays were deposited to a depth of between 0.5 and 1.0m, their lower surface at 3.36 and their upper surface at 3.86m OD in Test pit 56 (Delta Simons 93-168, 1994). The alluvial clays in the area immediately south and west of these are clearly of a different origin. All the logs describe these as red clays and the consistency of this description clearly indicates a different deposit in this area. These sediments reach a depth of 1.4m and lie between 3.03 and 4.33m OD. While it is possible that the colour difference may reflect levels of oxidation in the sediments it appears likely that these alluvial deposits reflect the material being brought downstream by the River Witham, the origin of the alluvial particles being different from those in the River Till channel.

The third major class of sediment directly overlying the peats are sands. A number of boreholes along the southern margins of the Brayford Pool have sand to a maximum depth of 2.7m, this unfortunately in a test pit without a surface OD height, but borehole 13 (Harrison and Company Report 5095) near the mouth of the ancient channel has the peat sand interface at 1.6m OD with the upper surface of the sands at 3.5m OD. Similarly four boreholes on the southern margins of the sand plateau exhibit sand overlying the peats, which in this area are otherwise topped by 'fill'. The origin of these sands is problematic. They may have formed as beach deposits on the southern margins of the pool as a result of inwash and erosion of the sands to the south but this would necessitate a discontinuity with the peats in this part of the site which lie above the 2m contour. They could alternatively result from a current flow across the southern part of the Brayford with coarser sediments being deposited there than elsewhere across the site. Without clear stratigraphic information the origin and formation of these sands remains speculative.

4.4 Archaeological significance of the results

A number of factors of significance arise from this study.

1. The probable course of the River Till has been identified opening into a basin that extends a little further to the west than the present Brayford Pool.

2. It may be possible to establish the date of construction of the Fossdyke through the analysis of the sediments infilling this channel and appropriate radiometric dating. Once the Fossdyke was operational the old channel of the River Till would no longer have been carrying flowing water, a change in sedimentation type and rate can be expected, accompanied by a change in the ecology of the channel. These changes should be observable in the biological and sedimentary record and could be dated by radiocarbon analysis of the appropriate sediments.

3. Most of the landscape of the site, except that of the palaeochannel itself, was above the 2m contour and therefore was probably dry and above the contemporary water level during prehistoric times. Roman activity is attested at 2.0m OD on the east side of the Brayford at Brayford Wharf East 1982 (Steane pers comm) suggesting that some of the sand plateau on the south side of the site was still above the influence of flood and marsh in the Roman period.

4. Water levels continued to rise such that most of the area above 3m OD became marshy, while fine-grained sediments were laid down further into the mire and pool. It is clear from the biological remains obtained from some of the samples studied in 1994 (in Wragg 1994) that there were episodes of dryness when the peats were humified and palaeosols developed and it is quite possible that the alluvial sediments covering the peats were laid down seasonally in damp or wet grasslands, a pattern clearly present in the 19th century when the area was a common (Holmes Common).

5. The sediments infilling the palaeochannel and basin offer an exceptionally important palaeoenvironmental sequence for studying the sedimentary history of, and chronology of the water levels in, the basin, and the vegetational history of the local region through the last 2-3 millennia of prehistory and probably also much of the Roman and medieval periods.

6. The location of the sand plateau between the junction of the two rivers makes this area a potentially important topographic location in prehistory, and although the soils are likely to have been poor for agriculture the location may have had some geographical significance, for instance as an easily defended area, and settlement or ritual use may have been made of it.

4.5 Preliminary Recommendations

Most of those areas so far developed on the site have lain above the deposits infilling the ancient river channel and the southern margins of the Brayford Pool. They have therefore afforded little good opportunity for the discovery of archaeological sites, although it should be noted that Test Pit 117 (Delta-Simons 93-168.02, 1994) records 'several planks of wood' at depths of 3.7 and 4.3m in grey brown silty clay, which must correspond to somewhere in the region of 2.1m and 1.6m OD (by analogy with the nearby borehole 20 whose ground surface lay at 5.9m OD- Table 1) and may therefore indicate a prehistoric structure of some sort or a boat of perhaps more recent date. If this part of the site remains undeveloped it would be appropriate for this test pit to be re-opened and extended to identify whether these 'planks' are archaeologically important.

That part of the site which lies south of the railway has however considerable potential for prehistoric and possibly more recent occupation or activity and procedures should be set up to evaluate the archaeological potential of the area. One evaluation trench should target the area of particularly high ground in test pit 42 (Delta Simons 93-168, 1994) to establish its character, i.e. whether it be artificial or natural.

The importance of the palaeoenvironmental potential of the site has been highlighted and it is recommended that a continuous sequence of samples is taken from a borehole or test pit through the fills of the palaeochannel in the north western corner of the site, possibly adjacent to TT5 or TT8 on the Phase III Accommodation site or further west in the area of test pits 111 or 142 (Delta-Simons 93-168.02, 1994), a second through the sediments on the southern margin of the Brayford Pool near test pit 33 (Delta Simons 93-168, 1994), and a third much shorter sequence through the upper peats above the 2m OD contour in the southern part of the site. These samples can be expected to encompass the bulk of the sedimentary history on the site and a series of radiocarbon dates should be obtained from selected organic horizons in the sampled sections to establish a chronology for the sediments before any further work is proposed. It is unlikely that such an extended palaeo-environmental sequence will be found elsewhere within the city. Furthermore study of the sequence through the palaeochannel is likely to allow the dating of the construction of the Fossdyke.

4.6 Conclusions

The study has identified an ancient channel running into the western end of the Brayford Pool which can only be correlated with the course of the River Till prior to the construction of the Fossdyke. An area of sand lying above the 3m OD contour is suggested as a possible location for prehistoric activity and the palaeoenvironmental potential of the deposits on the site is highlighted along with the possibility that the construction date of the Fossdyke could be determined. Attention is drawn to the possibility that a boat or prehistoric structure survives in test pit 117 in the north eastern corner of the site.

4.7 Acknowledgements

I should like to thank the CLAU for supplying me with the relevant borehole information, Kevin Wragg for the Phase III Accommodation site plan, trench OD heights and assistance on site, and Jane Cowgill for Fig. 1 and reading a draft of this report.

4.8 Bibliography

Carrot, J. Hall, A. Issitt, M. Lancaster, S., Kenward, H. and Milles, A. 1994 Evaluation of biological remains from deposits at the University for Lincolnshire site, Brayford, Lincoln (Site code UCL94), EAU report 94/21. In Wragg 1994

Delta Simons 93-168, 1994 Environmental Site Assessment RMJM, University of Lincolnshire, Brayford Pool, Lincoln. February 1994

Delta-Simons 93-168.02, 1994 Phase IIB Environmental Site Investigation, University of Lincolnshire, Brayford Pool, Lincoln, Vol.II. September 1994

Engineering Consultancy Services B 1003/A57, 1994 Ropewalk to Carholme Road Link, Borehole Survey conducted by LINCS LAB for Highways and Planning.

Harrison and Company Report 5095, 1994 Brayford Pool, Lincoln. Borehole Survey for Delta Simons Environmental Consultants Ltd.

Rackham, D.J. 1998 Brayford Wharf East, Borehole Investigation. The Environmental Archaeology Consultancy. Unpublished report for the CLAU

Wragg, K. 1994 Site of Proposed University College of Lincolnshire, Brayford South, Lincoln; Archaeological recording. CLAU Archaeological Report No. 106

Table l: Lincoln University: Test pit and borehole records used to construct the contour plot

Test Pit/BH	Surface OD	Depth to natural sands	Reduced OD	Top of -	Other data
1	5.68				No sand/gravel deposits
2	5.09	2	a. 3.09	Sand	Top of sand, peat above overlain by grey clay with top at 4.09 OD
3	4.5	1.9	2.6	sand	Overlain by 0.4m peaty clay, then 0.9m grey clay
4	4.88	2	2.88	sand	Overlain by 0.5m peat, then 1.2m dark sand
5	4.95	2	2.95	sand	Overlain by peat, then sand, then black clay with top at 4.65
6	4.59	1.1	3.49	grey sand	Overlain by 0.8m peat
8	4.27	0.3	3.97	sand/gravel	Poss fill?, overlain by fill
9	4.57	2.9	1.67	sand	Overlain by 1.1m peat, then 1.5m grey clay
10	4.88				0.3m peat at base, then 1.95m grey clay, 0.25m sand, & 0.6m grey clay
11	3.8	0.5	3.3	grey sand	Overlain by 0.2m peat, then 0.3m waterlogged gravel
14	4.81				Depth 3.5m, 0.3m peat, overlain by 1m grey clay, then fill
15	5.79	1.9	3.89	sand	Overlain by 1.1m peat, then 0.4m sand
15a	4.43	l.5	2.93	sand	Overlain by 0.5m peat, then black fill
16	3.91	0.5	3.41	sand	Overlain by dark soil
17	4.61	1.1	3.51	sand	Overlain by 0.6m banded peat, then soil
20	4.95	1.4	3.55	sand	Overlain by 0.8m peat, then 0.2m sand/clay
20a	4.51	1.7	2.81	brown sand	Overlain by 0.55m peat, then 0.15m grey sand, then fill
21	4.58	1.6	2.98	sand	Overlain by 0.4m peat, then metal ore
23	4.42	1	3.42	grey/yel sand	Overlain by fill
24	4.77	1.8	2.97	sand	Overlain by 0.6m peat, then red ash
25	5.04				Depth 2.8m, peat at base, then 1.1m grey sand, 0.8m yel/grey sand with clay nodules, then chunks limestone
26	5.01				Top of peat at 2m, then 1m sand, then fill
27	4.66	1.6	3.06	sand	Overlain by 0.6m peat, then fill
28	4.16	1.2	2.96	grey/br sand	Overlain by 0.4m dark brown peat, then fill
30	3.7?	1	2.77	sand	Overlain by 1 m wet peat
31	4.79	1.4	3.39	grey sand	Overlain by fill
32	4.78				All fill
33	5.52				Depth 3.7m, 2.2m peat in base, overlain by 1 m brown sand, then fill
34	4.31	1.75	2.56	grey br sand	Overlain by 0.85m peat, then black fill
35	4.1	1	3.1	grey sand	Overlain by 0.4m peat, then sandstone
37	4.61	1.5	3.11	sand	Overlain by 0.5m peat, then ash/cinder
38	4.48	2	2.48	sand	Overlain by 0.7m peat, then 1m red clay, then ash
39	4.75				No data - hard base
39a	4.95	2.8	2.15	sand	Overlain by 1.4m peat, then ash & clinker
39b	4.93				All fill and ash
40	5.49				Peat in base, top at 2.79 OD, then 2.3m banded orange/yellow sand
41	4.57	1.7	2.87	br/grey sand	Overlain by lm peat, then chips
42	5.61	0.5	5.11	sand	Overlain by sand/gravel with topsoil
43	4.91	1.7	3.21	grey sand	Overlain by 0.4m peat, then inert fill
44	4.47	1.2	3.27	grey sand	Overlain by 0.5m peat, then 0.6m red clay, then ash
45	4.37	2.2	2.07	grey sand	Overlain by 1.2m peat then lm red clay
46	4.93	3	a 2.0	grey/yel sand	Overlain by 1.1m peat, then 1.3m red clay , then fill
47	5.47				Ash and clinker
48	3.59	2	1.59	grey sand	Overlain by 0.8m peat, then 1.4m sand, then topsoil
48a	5.18				Ash/clinker
49	5.38	2.9	a 2.48	?	0.4m peat above 2.48 OD, then 1.9m dark sand, then fill
50	4.94	1.5	3.44	grey sand	Overlain by 1m red clay
51	4.84	2.4	2.44	sand	Overlain by 1.1 m peat, then 0.8m red clay, then ash
52	4.98	2.7	2.28	grey sand	Overlain by lm peat, then 0.9m red clay, then fill
53	5.13				Depth 2m, lm red clay in base pit, then ash fill with peat soil
54	4.96				Depth 3m, 1m peat in base, then 1m red clay, then black fill
55	4.92				Depth 3m, 0.8m brown peat with wood in base, then 0.4m brown/grey sand with clay nodules, then fill
56	5.26				Depth 2.8m, 0.9m peat in base, then 0.5m grey clay, then fill
56a	5.22				Depth 2.5m, top of peat at 2.5m depth, then clinker
56b	5.7	2.8	2.9	sand	Overlain by 1.1m peat, then ash and clinker
57	4.79	2.4	2.39	grey sand	Overlain by 0.6m of peat, then 1.2m sand, then sand & gravel topsoil
58	4.67	1.5	3.17	sand	Overlain by 0.5m peat, then fill
58a	4.77	1.2	3.57	sand	Overlain by fill, sand to depth of 2.8m
59	4.96	2.2	2.76	sand	Overlain by 0.6m of peat, then 0.8m clay, then gravel fill
60	4.97				Depth 1m, 0.5m red clay at base pit, then fill
63	5.45				Fill

Table l: Lincoln University: Test pit and borehole records continued

Test Pit/BH	Surface OD	Depth to nat. sands	Reduced OD	Top of -	Other data
bhl	5.6	5.6	0	sl.silty/ gravelly sand	Overlain by 1.6m peat, 1.3m sandy gravelly silty clay, then 0.8m of gravelly sand, then fill
bh2	5.1	1.9	3.2	silty/gravelly sand	Overlain by 0.5m peat, then fill
bh3	5.5	3.3	2.2	silty sand	Overlain by 0.8m peat, then fill (gravel at -3.6m OD)
bh4	3.7	3.6	0.1	silty sand	Overlain by 3.5m brown peat with sand bands, then fill
bh6	4.6	4.7	-0.1	silty sand & gravel	Overlain by 3m peat, then fill
bh7	4.7	4.9	-0.2	gravelly sand	Overlain by 2m peat, then 1.1m grey silty gravelly clay, then fill
bh8	5.1		-1.4		Depth 6.5m, gravelly sand at base, overlain by 2.5m coarse silt with wood, then 1.8m silty clayey sand, then 0.3m sand
bh9	4.5				Sand with pockets of peat at base, overlain by 0.3m brown fibrous peat
bhl0	4.4				Sand with pockets of peat at base, overlain by 0.2m brown fibrous peat
bh11	3.7	1.2	2.5	sl. silty sand	Overlain by fill
bhl2	4.8	1.9	2.9	silty sand	Overlain by 0.2m peat, then sand and gravel (made ground?)
bhl3	5.1	5.3	-0.2	sl. clayey sand	Overlain by 1.8m peat, then 1.9m greyish brown silty sand, then fill
bhl4	4.3	1.8	2.5	gravelly/silty sand	Overlain by 1.1m dark brown grey sl. clayey silty sand with lenses organic clay, then fill
bhl5	4.3	1.8	2.5	sl. silty/ gravelly sand	Overlain by 0.5m peat, then black silty sand (made ground) (gravel at -1.5m OD)
bhl6	5.6	4	1.6	brown silty sand	Overlain by 2.7m dark grey silty gravelly sand with pockets of fibrous organic material, then fill
bhl7	4.5	1.8	3.7	brown silty sand	Overlain by fill
bhl8	4.9	2.8	2.1	br clay/silt/sand	Overlain by 1.1m dark brown fibrous peat with sand lenses, then fill
bhl9b	5.4	3.4	2	grey clayey/ sl. gravelly sand	Overlain by 1.6m dark brown fibrous peat, then 0.9m pale and dark grey organic silty sandy gravelly clay, then fill
bh20	5.9	5.5	0.4	sand & gravel	Overlain by 0.6m grey sandy gravelly clay, then 0.4m dark brown amorphous peat, then 3.1m soft pale grey silty sl. gravelly clay, fill
bh21	5.4	2.5	2.9	silty sand with occ. peat lenses	Overlain by 0.7m soft grey mottled brown organic silty clay, then fill (gravel at -0.4m OD)
bh22	4.9	2.8	2.1	silty/sl. gravelly sand	overlain by 1.2m dark grey mottled pale grey organic silty clay with pockets of fibrous peat, then 0.3m red gravelly silty clay (fill?)
bh23	5.1	4.5	0.6	sl. silty sand & gravel	overlain by 0.6m grey mottled brown organic silty clay, then 1.3m dark brown clayey fibrous silty peat, then 0.3m red gravelly clay, fill
bh24	5.2	4.7	0.7	silty/gravelly sand	overlain by 0.4m grey mottled dark grey organic silty clay, then 1 m dark brown fibrous peat, then 0.5m dark grey silty/clayey sand, fill
bh25	5.4	3.6	1.8	silty sand	overlain by fill
bhA	5.9	2.2	3.71	Sand	overlain by 0.4m dark brown/black silty clayey peat, 0.2m sand, then fill
bhB	?	4.8		silty sand	overlain by 1.7m dark brown clayey peat with wood, then 1.8m olive brown grey silty clay
bbC	5.43	4	1.43	clayey sand	overlain by 1.6m brown sl. clayey peat, then 1.2m light blue-grey and olive brown silty clay
bhD	4.79	4.9	-0.11	silty sand	overlain by 1.5m dark brown amorphous peat, then 0.5m grey silty clay with organic debris, then 1.4m sandy silty clay
bhE	4.67	4.1	0.57	silty sand	overlain by 0.65m brown sl. clayey peat, then 0.85m of dark brown silty peaty amorphous clay with shell fragments, then 0.2m grey silty clay
bhF	4.7	4	0.67	brown silty sand	overlain by 2m brown-grey sandy silty clay onto silty clayey peat, fill
bhG	4.9	5	-0.1	brown sand	overlain by 0.5m black grey clayey peat with shells and wood, then 1.3m black grey clayey peat with shells, then fill
bhH	4.79	3.5	1.29	brown silty sand	overlain by 1.5m grey-br sandy peat, 1m brown clay/peat/sand, then fill
tpB	4.625	2.2	2.43	brown sand	overlain by 0.5m black silty fine sand and clayey friable peat, fill
TpC	3.7	1.3	2.41	grey silty sand	overlain by 0.25m brown friable peat, then fill
TpD	4.646	1.5	3.15	brown silty sand	overlain by 0.2m black and brown clayey peat, then fill
Bh B2a	6.35	3.5	2.85	silty sand	only fill above
Bh B3	6.41	2.5	3.91	silty sand	only fill above
Bh B2	6.42	2.6	3.82	silty sand	only fill above
Bh Bl	6.51	3	3.51	silty sand	only fill above
TTl	4.89	0.9	3.99	Sand	fill
TT2	4.63				aborted
TT3	4.72	0.8	3.92	Sand	fill
TT4	4.4	0.7	3.7	Sand	fill
TT5	4.7	4.0			1.45m peat at base, overlain by 1.4m grey blue alluvial clay, then fill
TT6	4.35	1.0			0.15m alluvial clay in base, then fill
TT7	4.22	1.4			0.4m alluvial clay with sand band at base, then fill
TT8	4.71	3.75			0.55m peat in base overlain by 2.25m blue grey alluvial clay fill

Figure 1. Lincoln University Site

University Phase III Accommodation - Borehole Stratigraphy

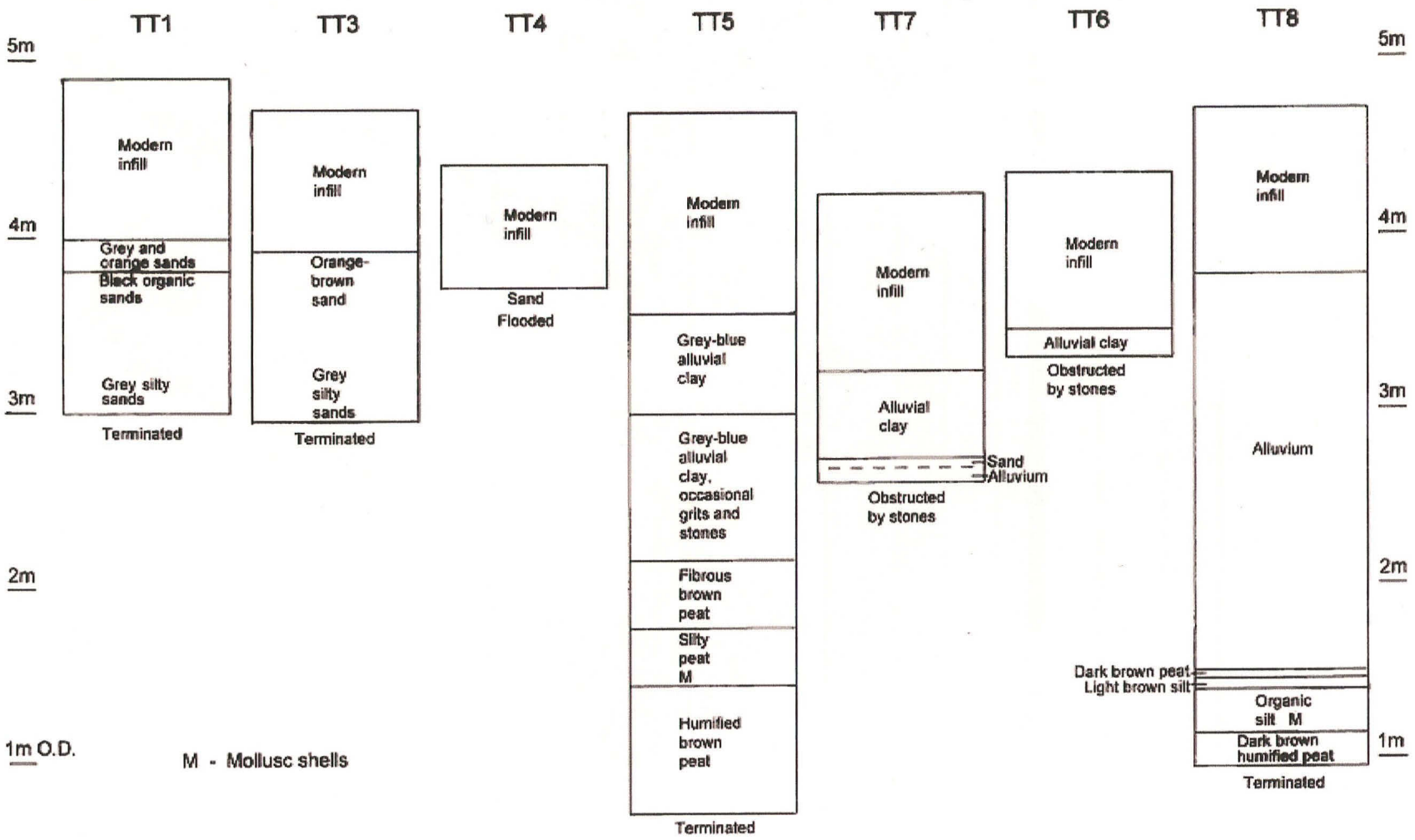
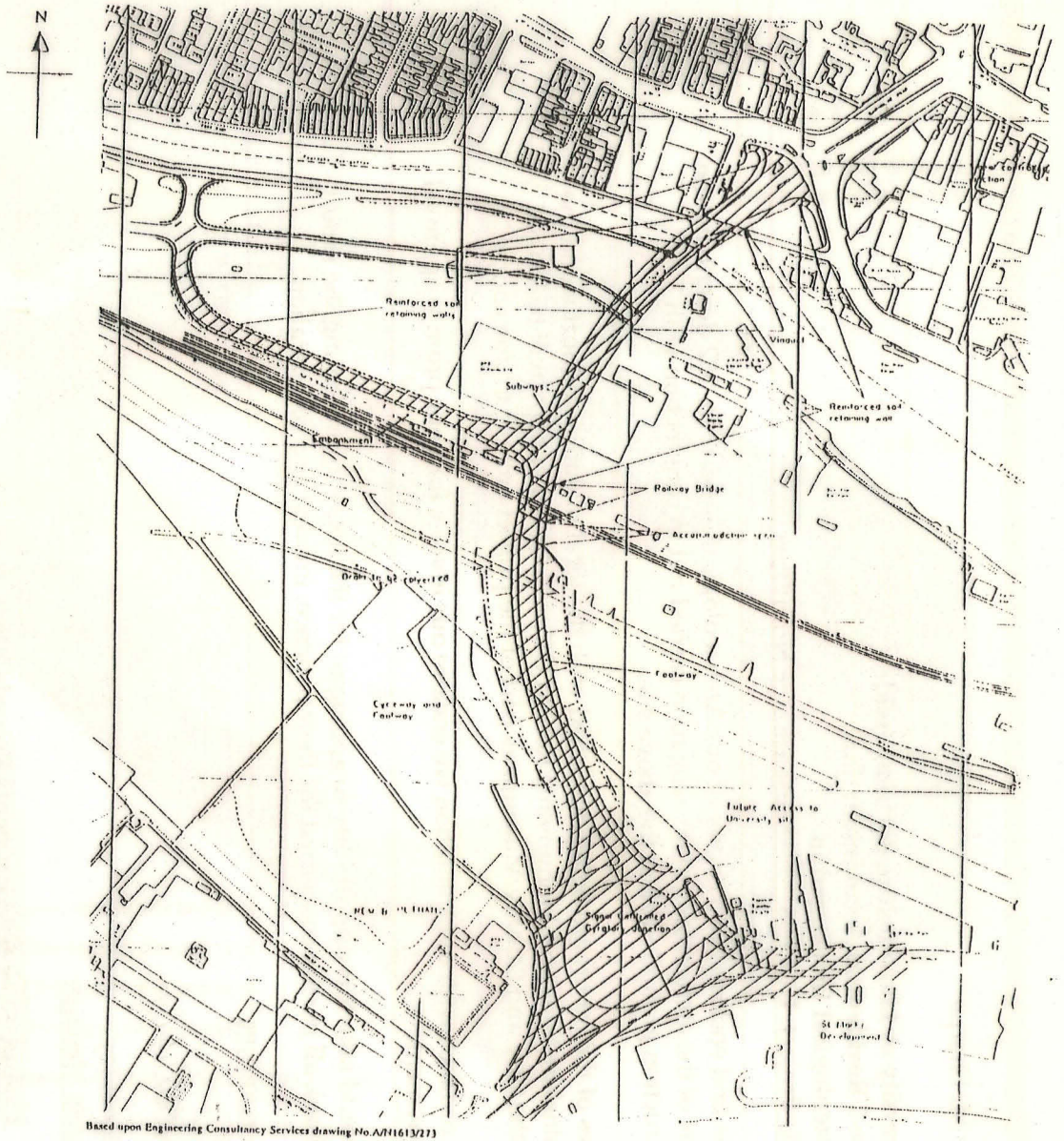


Figure 2.2 Lincoln University Site

Contour plot of the upper surface of the natural sands with the extent and depth of organic sediments indicated



Based upon Engineering Consultancy Services drawing No.A/H1613/273

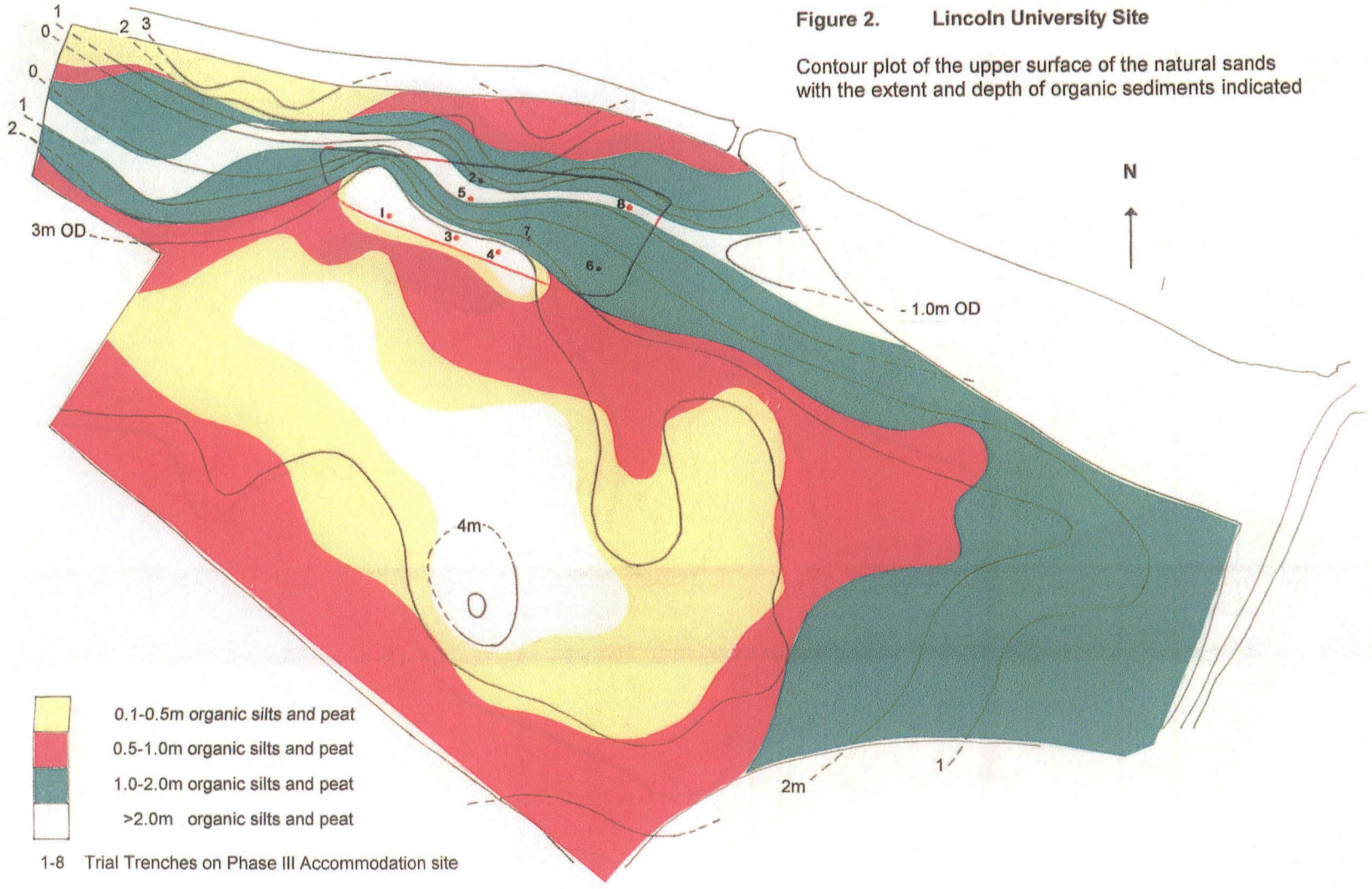
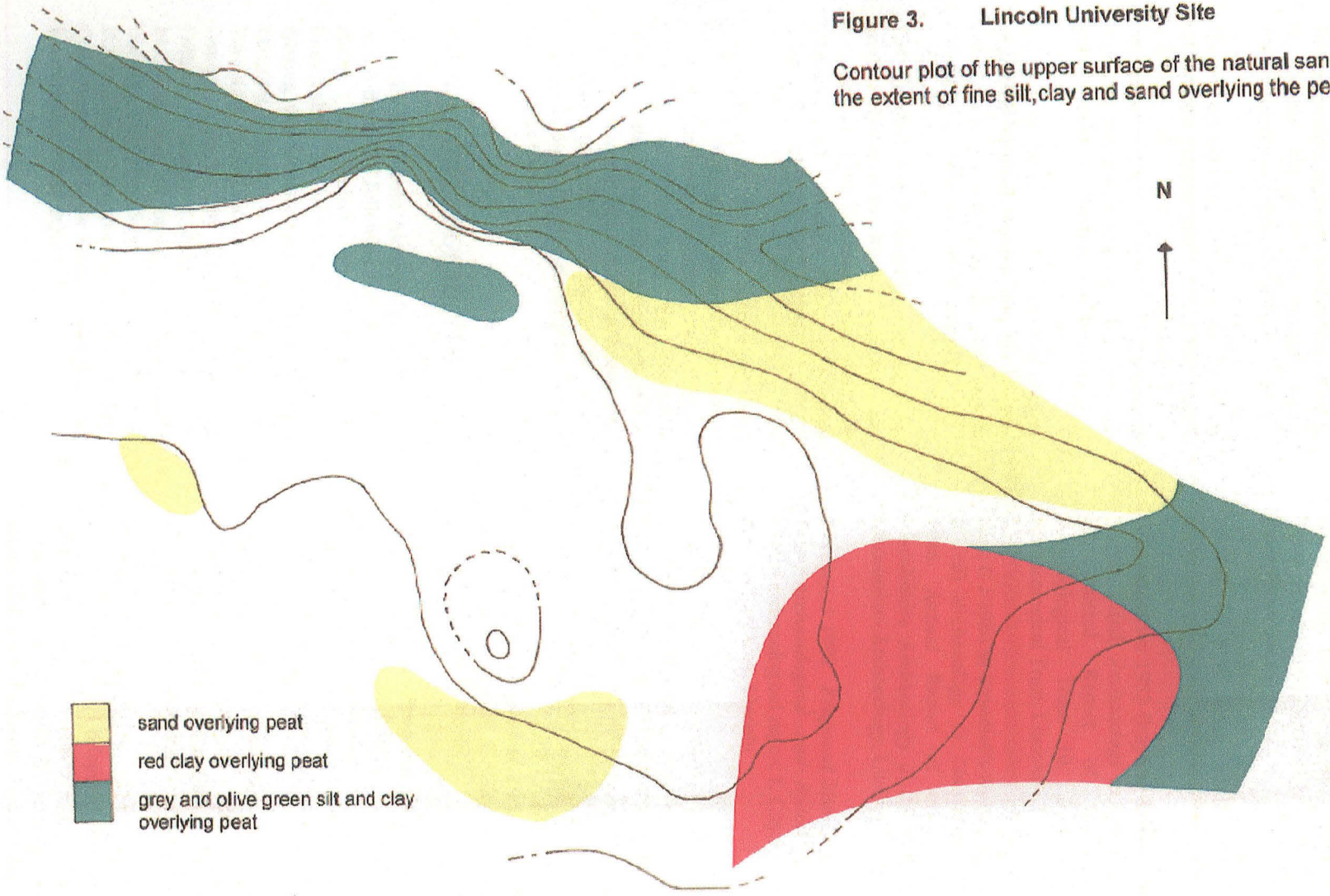


Figure 2. Lincoln University Site

Contour plot of the upper surface of the natural sands with the extent and depth of organic sediments indicated

Figure 3. **Lincoln University Site**

Contour plot of the upper surface of the natural sands with the extent of fine silt, clay and sand overlying the peats



5.0 DISCUSSION OF RESULTS AND CONCLUSIONS

The excavation of the trial trenches themselves did not produce any new archaeological finds or features, but given the limited depths involved, this was expected from the outset.

The deposit sampling and subsequent analysis (of both the samples taken during this project and the results of other investigations across the university site), however, has produced important information relating to the landscape and environmental conditions of the area.

This part of the project has served to identify an ancient channel running into the western end of the Brayford Pool, together with an area of sand lying above the 3m OD contour.

The channel almost certainly represents the original course of the River Till prior to the construction of the Fossdyke canal, while the elevated sand 'island' offers a possible location for prehistoric occupation.

The deposits on the site have again been shown to hold great palaeoenvironmental potential. Further investigation would offer the possibility of discovering the prevailing environmental conditions since prehistoric times, prehistoric (and later) archaeological occupation (especially to the south of the railway), and possibly the construction date of the Fossdyke Canal.

6.0 ACKNOWLEDGEMENTS

The City of Lincoln Archaeology Unit would like to thank the following for their assistance during this project: The University of Lincolnshire & Humberside Company for funding this investigation; the Department of Planning, Lincoln City Council, City Hall, Beaumont Fee, Lincoln LN1 1DH; Mr Ian George, Lincoln City Council Archaeology Officer; Messrs I.Sharpe, P.Mundin & M.Glynn, and all on-site staff of Linpave Building Ltd., High Street, Saxilby, LN1 2JQ; D.J.Rackham, Environmental Archaeology Consultancy, 25 Main Street, South Rauceby, Lincolnshire, NG34 8QG.

7.0 BIBLIOGRAPHY

Cameron, K 1985 *The Place Names of Lincolnshire. Part 1: The place names of the county of the City of Lincoln*, English Place-Name Society Field-Name Studies **58**, English Place-Name Society

Darling, M J & Jones, M J 1988 Early settlement at Lincoln *Britannia* **19**, 1-57

Gilmour, Brian 1982 Brayford Wharf East, in Nurser, E (ed) *Archaeology in Lincoln 1981-82*, Annual Report of the Lincoln Archaeological Trust **10**, 20-4, Lincoln Archaeological Trust, Lincoln

Guy, C J 1986 St Benedict's Square, in Nurser, E (ed) *Archaeology in Lincolnshire 1985-1986*, Annual Report of the Trust for Lincolnshire Archaeology **2**, 23-5, Trust for Lincolnshire Archaeology, Lincoln

Hockley, J 1992 *Proposed Skewbridge Area Plan. Archaeological and historical study*, CLAU archaeological report **1**, City of Lincoln Archaeology Unit, Lincoln

Hockley, J 1992 *Proposed Ropewalk to Carholme Road Link. Archaeological and historical study*, CLAU archaeological report **5**, City of Lincoln Archaeology Unit, Lincoln

Hockley, J 1992 *Proposed Ropewalk to Carholme Road Link. Archaeological evaluation of geotechnical trial pits*, CLAU archaeological report **6**, City of Lincoln Archaeology Unit, Lincoln

Hockley, J 1992 *Proposed Birchwood Link and Tritton Road Improvements. Archaeological evaluation of geotechnical trial pits*, CLAU archaeological report **7**, City of Lincoln Archaeology Unit, Lincoln

Hockley, J 1992 *Morrison's Supermarket, Tritton Road, Lincoln. Archaeological evaluation*, CLAU archaeological report **18**, City of Lincoln Archaeology Unit, Lincoln

Hockley, J & Wragg, K 1994 *Site of the Proposed University College of Lincolnshire, Brayford South, Lincoln. Evaluation Addendum Report.* CLAU archaeological report **124**, City of Lincoln Archaeology Unit, Lincoln

Jones, R H & Jones, M J 1976 Brayford Wharf North, in Colyer, Christina (ed) *Lincoln Archaeological Trust 1975-1976*, Annual Report of the Lincoln Archaeological Trust **4**, 24-5, Lincoln Archaeological Trust, Lincoln

Jones, R H 1981 Brayford Wharf North, in Jones, M J (ed) Excavations at Lincoln. Third Interim Report: Sites outside the walled city 1972-1977 *Antiquaries Journal* **61**, 90-2

Rivet, A L F & Smith, C, 1979 *The place-names of Roman Britain*

Ruddock, J G & Pearson, R E 1985 *The Railway History of Lincoln (2nd Edn)*, J Ruddock Ltd, Lincoln

Wragg, K 1994 *Site of the Proposed University College of Lincolnshire, Brayford South, Lincoln. Archaeological Evaluation Report.* CLAU archaeological report **106**, City of Lincoln Archaeology Unit, Lincoln

Wragg, K 1998 *Site of University of Lincolnshire & Humberside, Brayford, Lincoln - Phase I Combined Report.* CLAU archaeological report **326**, City of Lincoln Archaeology Unit, Lincoln

Wragg, K 1998 *University of Lincolnshire & Humberside, Brayford, Lincoln - LRC Building.* CLAU archaeological report **330**, City of Lincoln Archaeology Unit, Lincoln

Wragg, K 1998 *University of Lincolnshire & Humberside, Brayford, Lincoln - Student Residences, Phase II.* CLAU archaeological report **331**, City of Lincoln Archaeology Unit, Lincoln

8.0 LHA NOTE/ARCHIVE DETAILS

8.1 LHA NOTE DETAILS

CLAU CODE: UCLE97

PLANNING APPLICATION NO.:

FIELD OFFICER: K.Wragg

NGR: SK 9685/7125

CIVIL PARISH: Lincoln

SMR No.: N/A

DATE OF INTERVENTION: 04/08/98 - 06/08/98

TYPE OF INTERVENTION: Evaluation & Environmental Sampling

UNDERTAKEN FOR: Linpave Building Limited, High Street, Saxilby, Lincs., LN12JQ, on behalf of the University of Lincolnshire & Humberside Company.

8.2 ARCHIVE DETAILS

PRESENT LOCATION: City of Lincoln Archaeology Unit, Charlotte House, The Lawn, Union Road, Lincoln, LN1 3BL.

FINAL LOCATION: The City and County Museum, Friars Lane, Lincoln.

MUSEUM ACCESSION No.: 177.98

ACCESSION DATE: -

APPENDIX A - ARCHIVE DEPOSITION

The archive consists of:

No.		Description
1		Site diary
1		Site Report
1		Environmental Archaeology Report
12		Context records
3		Plan & Section drawings
1	set	Colour Slides

The primary archive material, as detailed above, is currently held by :

The City of Lincoln Archaeology Unit,
Charlotte House,
The Lawn,
Union Road,
Lincoln,
Lincolnshire,
LN1 3BL.

It is intended that transfer to the City and County Museum, Friars Lane, Lincoln, in accordance with current published requirements, under Museum Accession Number 177.98, will be undertaken following completion of this project.

APPENDIX B - COLOUR PLATES

Plate 1: General view of west-facing section, T.T.3, looking east

Plate 2: General view of north-west facing section, T.T.8, looking south-east

CITY OF LINCOLN ARCHAEOLOGY UNIT		
SITE CODE: UCLE98	PLAN/ELEV/SECTION NO:	
CLIENT: University of Lincolnshire & Humberside		
DESCRIPTION: Plan showing location of trial trenches		
SCALE: 1:2500	ARCHIVE NO:	
DRAWN BY: KW/YR	CHECKED:	DATE:
MUSEUM ACCESSION NO: 177.98		

0m 250m

N

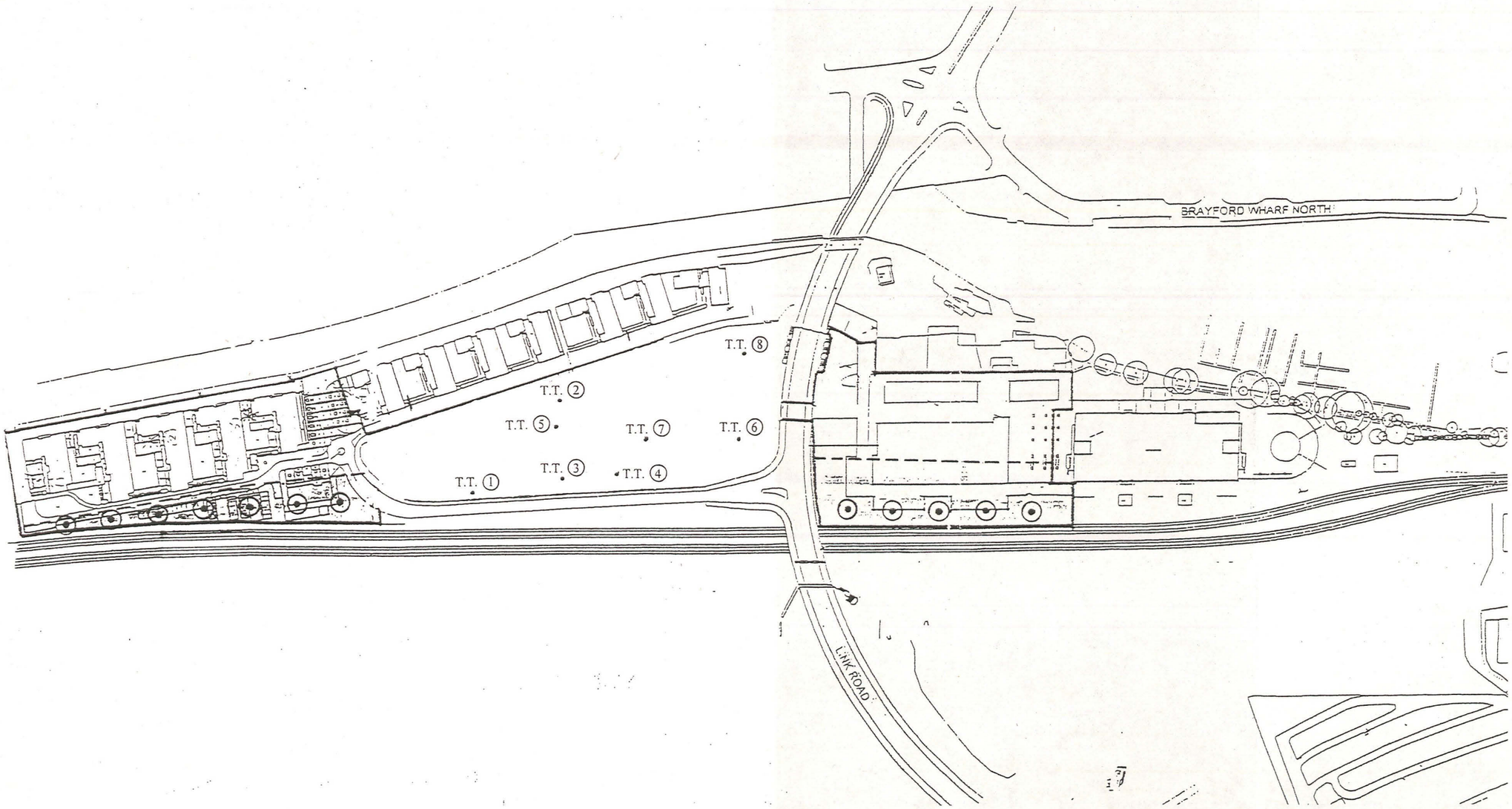


Fig.4

CITY OF LINCOLN ARCHAEOLOGY UNIT		
SITE CODE: UCLE98	PLAN/ELEV/SECTION NO:	
CLIENT: University of Lincolnshire & Humberside		
DESCRIPTION: Trial Trench Locations showing Ground Level O.D. Height		
SCALE: 1:500	ARCHIVE NO:	
DRAWN BY: KW/YR	CHECKED:	DATE:
MUSEUM ACCESSION NO: 177.98		

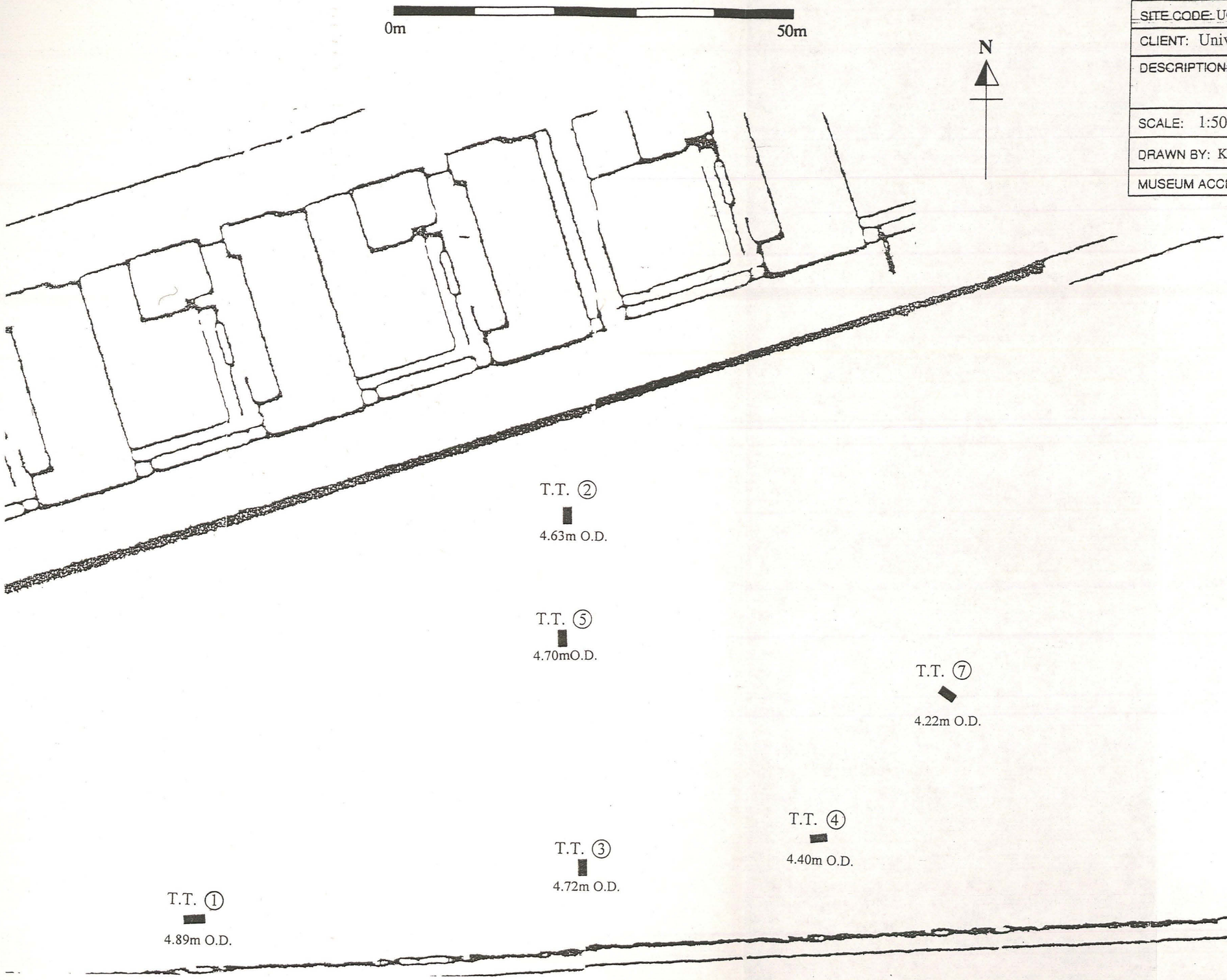


Fig.5

11 May 1999

Mr Irvine J Sharpe
Linpave Building Limited
Rand
Market Rasen
Lincs
LN8 5NJ

Dear Mr Sharpe

University of Lincolnshire & Humberside
Phase 3 Residential Accommodation
Archaeological Investigation
CLAU Project: UCLE98 Museum Acc No. 177.98

Please find enclosed two copies of our Archaeological Report No. 382 describing the results of the archaeological investigation carried out in conjunction with construction groundwork at the above site.

Copies of the report are being deposited with the local planning authority and the Lincolnshire Sites and Monuments Record Office. A further copy will be lodged with the City and County Museum as part of the project archive in due course.

In accordance with our quotation we enclose our invoice for your prompt approval and payment.

We would take this opportunity to apologise for the delay in presenting the report and thank all parties concerned for their patience, interest and co-operation.

Yours faithfully

John Hockley
Contracts Manager

Lincolnshire C... Archaeol...
14. MAY

cc County Sites & Monuments Record Office 14. MAY
Mr I K George, Lincoln City Council

LINCOLN archaeology

CITY OF LINCOLN ARCHAEOLOGY UNIT
CHARLOTTE HOUSE, THE LAWN, UNION ROAD, LINCOLN LN1 3BL
TEL: 01522 545326 FAX: 01522 548089

DIRECTOR: MICHAEL J. JONES MA.FSA.MIFA

With Compliments