

**NORFOLK ARCHAEOLOGICAL UNIT**

Report No. 1112

**An Archaeological Desk Based Assessment of land at  
Carrow Road, Norwich  
(Norwich City Football Club Phase 2)**

HER 26602N

for  
TA Millard East Anglia Ltd  
Britannia House  
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Norwich  
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November 2005

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Location: Land at Carrow Road, Norwich  
District: Norwich  
Grid Ref: TG 243 077  
HER No.: 26602N  
Date of work: November 2005

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## **Summary**

*An assessment of the archaeological potential of the Phase 2 Norwich City Football Ground redevelopment suggests early prehistoric occupation evidence may be anticipated. A natural sand bar seen during Phase 1 development may extend over the northern part of the Phase 2 area, with peat deposits to the south, closer to the river.*

*Modern disturbance may be limited: in the extreme north-east part of the area, an existing building has a basement, whilst in the centre of the site the existing workshop building is thought to have piled foundations (and some service pits).*

## **1.0 Introduction**

(Fig. 1)

This report is part of a larger programme of archaeological work associated with the redevelopment of Norwich City Football Club (NCFC) and its immediate environs. The work is being carried out in two phases. Phase 1 (summarised below) was connected with development of the club ground itself whilst Phase 2 relates to land to the east of the football ground, which includes former factory premises and associated land (Fig. 1). This report is an assessment of the Phase 2 development area.

### **Phase 1**

The work was necessitated by redevelopment, including construction of a new stand at the football ground, and the consequent impact of such work on known archaeological remains. Collins Commercial Property Consultants, on behalf of their clients (NCFC) commissioned the programme of archaeological works.

A desk-based assessment of the development area (Hawkins 2001) considered the archaeological potential of the site. This report was followed by an archaeological evaluation of the site by Norfolk Archaeological Unit (Adams 2003). The evaluation highlighted areas of prospective archaeological merit, in particular a prehistoric *in situ* flint scatter located on a sand bar or island present within the footprint of the Phase 1 development. On the basis of the evaluation results Norfolk Landscape Archaeology requested further excavation and record prior to development in order to fulfil the requirements of Planning Policy Guidance Note 16.

To fulfil these criteria NAU undertook an archaeological excavation, watching brief and building survey at NCFC's ground during the summer of 2003. This work was undertaken in accordance with a Method Statement and Project Design prepared by NAU (Ref: AS/1550/c) and a Brief issued by Norfolk Landscape Archaeology (NLA Ref: AH/18/02/03). An assessment of the results of this have already been reported on (Adams 2005) and are also summarised below in the Archaeological and Historical Background section.

This archaeological programme was in accordance with national and local policy guidelines on planning and development. National guidelines are provided by *Planning Policy Guidance Note 16* (PPG 16) issued by the Department of the Environment in 1990, with the local policy outlined in the *Norfolk Structure Plan* (adopted October 1999).

## **Phase 2**

This archaeological desk based assessment was undertaken in accordance with a Method Statement and Project Design prepared by NAU (Ref: AS/2054 Oct 2005) and a Brief issued by NLA (Ref: ARJH 16.08.05).

The latter document noted that the Phase 2 development proposals affected a site of archaeological importance for Late Quaternary and early Holocene studies, whilst the existing structures should be considered for historical value or industrial archaeological interest.

The brief required that the assessment seek to map the extent of the sand island using existing borehole and site investigation data.

The work was designed to assist in defining the character and extent of any archaeological remains within the proposed Phase 2 redevelopment area, following the guidelines set out in PPG16. The results will enable decisions to be made by the Local Planning Authority with regard to the treatment of any archaeological remains found.

No detailed fieldwork has been carried out in connection with this study, nor has reference been made to Listed Buildings information or other present planning constraints.

## **2.0 Geology and Topography**

The Phase 2 site is an area of land measuring some 200m by 160m (32,000m<sup>2</sup>) in plan and extending from the River Wensum to Kerrison Road to the north, and bounded to the west by the former Carrow Road and to the east by Laurence Scott Electromotors' (LSE) works.

The site is located within the original floodplain of the (tidal) River Wensum. The River Yare, located to the south, joins the Wensum a little downstream of the site.

At the Phase 1 site a solid geology of Upper Chalk bedrock is overlain by sands and gravels (British Geological survey 1; 50,000 series solid and Drift edition sheet 161). These sediments appear to be principally terrace gravels, though glacial outwash sediments may also be present (Murphy 1997). The site lies on broadly level ground (modern make-up) between an elevation of 1.40m OD and 2.30m OD. The proximity of the river and low-lying nature of the site meant that ground water was frequently present during Phase 1 excavation.

The presence of sand bars or islands in this area of the Wensum Valley have been attested by several recent investigations. These include the excavations carried out to the north during Phase 1 (Adams 2003; 2005), a watching brief at Riverside (Wiltshire and Emery 2000) and a Desktop Survey (Murphy 1997) (using the data recorded in pit and borehole logs by environmental consultants Delta Simmons). Geotechnical borehole surveys linked to the redevelopment have also logged the

peat and sand deposits in the Phase 2 development area (SIC 2002). *In situ* worked flint of prehistoric date has been found on the surface of these sand islands.

The industrial expansion that took place in the 19th and 20th centuries has buried the natural surface of the former valley in up to c. 3m of make-up deposits (SIC).

### **3.0 Archaeological and Historical Background**

(Fig. 1)

#### **Archaeological background**

The results of an archaeological watching brief undertaken by NAU during development works at the Riverside complex (Wiltshire and Emery 2000) provided a foundation for understanding the development of the prehistoric and historic environments within this area of the Wensum Valley. This work covered an area that traversed land east of the River Wensum from Norwich Thorpe Railway Station towards Carrow Road.

The watching brief recorded a sequence of peat deposits associated with an earlier channel of the River Wensum. Analysis of environmental samples taken during the watching brief suggested that a heavily forested Mesolithic landscape had become a more open environment during the Neolithic period (c. 4000-2800 BC), perhaps as a result of early agriculture. During the Bronze Age (c. 2500-700 BC) the environment at the sample site was increasingly open, with the presence of cultivated soils indicated. In the following Iron Age period (c. 700 BC-42 AD) remaining woodland was further reduced, and livestock as well as arable farming may have been carried out in the area.

A test pit and borehole survey carried out by Delta Simmons on behalf of the developer mapped the extents and approximate depths of deposits in the area of the Riverside development (Wiltshire and Emery 2000; Murphy 1997). The presence of sand islands or bars within the peat was revealed by this survey. These areas were well suited for prehistoric occupation in that they allowed the exploitation of diverse habitats. The extensive peat deposits recorded by this survey are thought to have spread across the Wensum floodplain sometime after 10,000 BP. The development of this peat would have sealed and preserved any prehistoric sites present on the sand/gravel dryland areas (Murphy 1997).

A Desk Based Assessment report on the known archaeological potential of the Phase 1 site, incorporating results of a geotechnical site investigation (Report No. 7888 by S.I.C. (East Anglia) Ltd) was produced by CgMs Consulting (Hawkins 2001). This drew on previous records of archaeological activity in the area. An important assemblage of Palaeolithic finds, including Acheulian-Clactonian hand axes and mammoth remains were recovered in the early 20th century during construction works at Carrow Works on the south bank of the River Wensum (Norfolk Historic Environment Record (NHER) 473). Mesolithic flint finds also came from the Carrow Works site (NHER 465, 467 and 474). Neolithic and Bronze Age finds, including worked flint and pottery was recorded from Norwich Riverside (NHER 26476).

Antiquarian work in an area close to the present railway station has uncovered a burial mound believed at the time to be of Roman date, but possibly of Bronze Age date. Finds of Romano-British pottery were also recorded (NHER 39358).

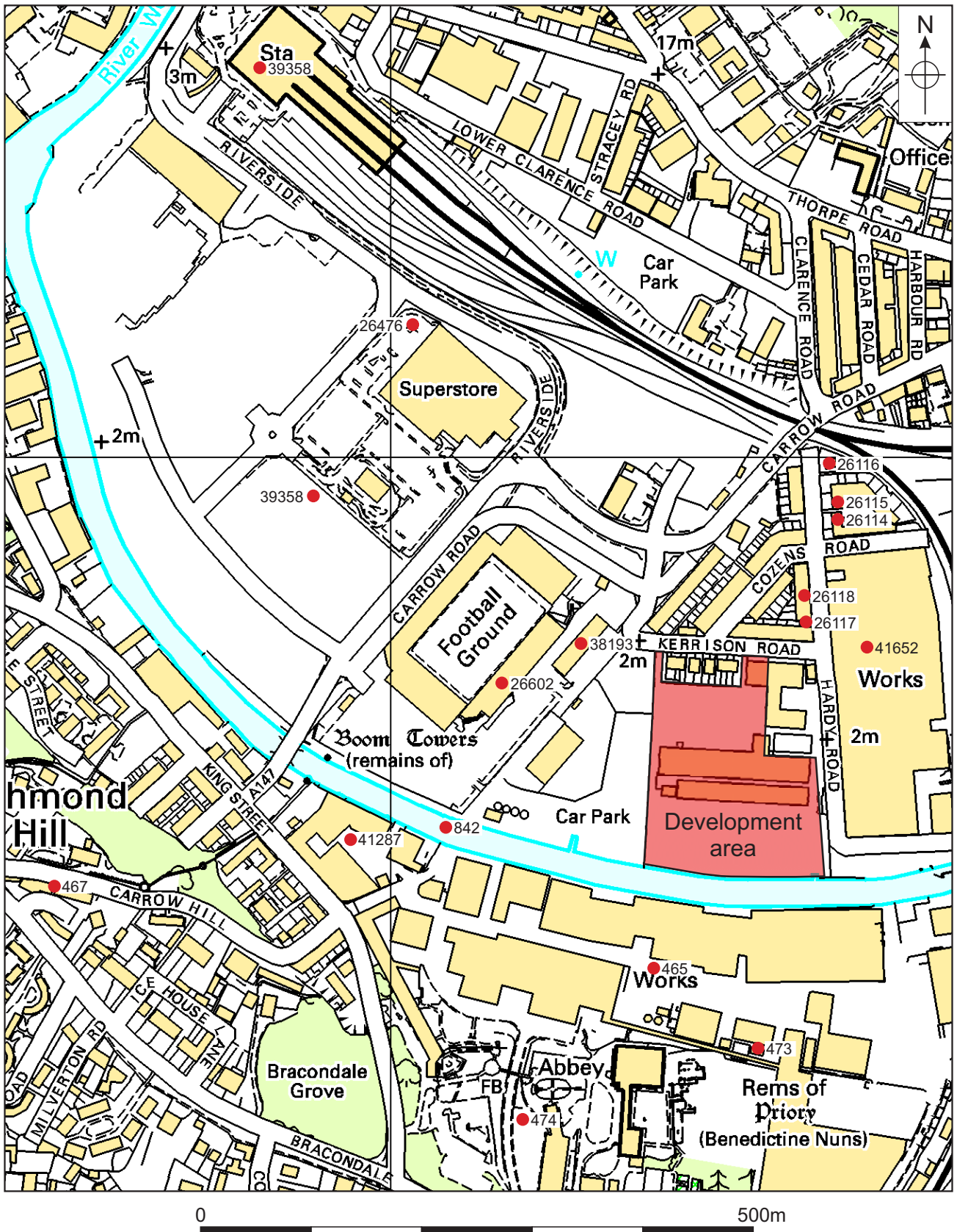


Figure 1. Site location, with selected NHER sites. Scale 1:5000

Local Authority No.100019340

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Upstream of the football ground, at 116-118 Prince of Wales Road (Trimble 2000), archaeological evaluation work has demonstrated that here the earliest human settlement occurred during the mid post-medieval period. C14 radiocarbon dating of peat deposits indicated that peat growth at this location ceased in the Late Anglo-Saxon period.

Archaeological evaluation at Carrow Road was undertaken by NAU in 2002, with the excavation and recording of five trenches within the area of the development footprint (Adams 2003). The excavation trenches were located in areas informed by reference to the evaluation results and a geotechnical borehole survey data (Report No. 7888) by S.I.C. (East Anglia) Ltd.

The work confirmed the presence of a sand bar or island, with evidence of prehistoric activity demonstrated by the discovery of *in situ* worked flint. An assemblage of twenty-eight flints recovered during this work was provisionally dated as Mesolithic to Early Neolithic (10,000-6001 BP). A re-evaluation of these flints on the basis of the excavation suggests they are of Final Upper Palaeolithic date. Other prehistoric periods were also represented within the overall flint collection.

A sequence of peats was logged by the evaluation. Comparison with similar deposits recorded at Riverside (Wiltshire and Emery 2000), where peat deposits were radiocarbon dated, suggested that prehistoric peats survived within the development area at Carrow Road. The comparison also indicated that conditions at Carrow Road were suitable for potential prehistoric organic remains to survive within the peat.

### **Historical background**

The available evidence suggests that this area was water-meadow and grazing land in historic times, in the hands of the Cathedral Dean and Chapter (and before that, the Cathedral Priory) as part of the manor of Thorpe. Drainage ditches, seen on the OS 25" map of the 1880s, crossed the area.

The first Carrow Bridge was constructed in 1810 (NHER 842) and Carrow Road laid out at that time. A few years later, in 1824, a malthouse was built alongside the road. This survived until very recently (NHER 38193) but was removed in recent development of the NCFC site, after recording (Underdown and Smith 2003). Its location may indicate a site on slightly dryer ground.

The terrace of houses in Kerrison Road, on its south side, was built shortly afterwards (from cartographic evidence) and doubtless relate to the malthouse.

The forerunner of the LSE works was established to the east in 1883 and expanded to the west across the Phase 2 development site during the 20th century.

Over the present development site, buildings were established in the 1950s and 1960s. Some of the buildings, including the main workshop, were constructed on piled foundations. The area closer to the river has been raised by further filling.

During the early 20th century much of the site served as municipal allotments, with the football ground being constructed in the first half of the 20th century. This involved landscaping of the dedicated canal which had provided access for wherries serving the malthouse. The canal may have been part of an ill-fated attempt to construct a harbour on the site during the 19th century. The project was abandoned, with the name of a nearby public house, The Clarence Harbour, and various local street names being, until the demolition of the pub in 2004, the only evidence of this doomed entrepreneurial effort.

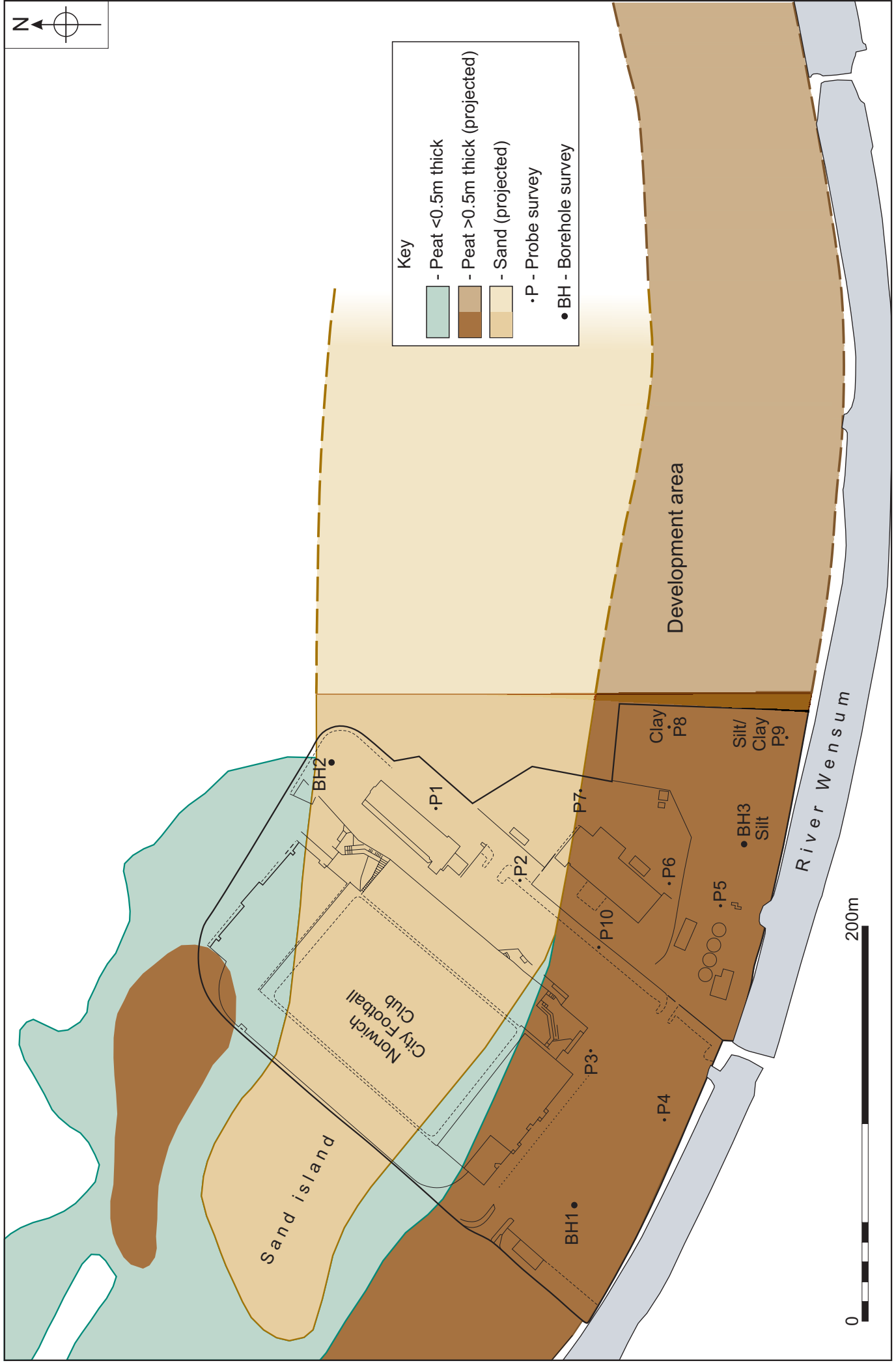


Figure 2. The development area with location of SIC boreholes and probes, with a note on the character of deposits below modern make-up levels. Scale 1:2500

## 4.0 Methodology

As noted above, the Brief draws attention to the Late Quaternary and early Holocene importance of the results from recent excavations at NCFC, and notes that the sand island upon which discoveries were made could extend into the present development area. This report maps the extent of the 'sand island' identified in recent work, using geotechnical data from existing borehole and SI reports.

The existing structures here have been visited to assess them for historical value and industrial archaeological interest.

## 5.0 Documentary Evidence

The site lay in the manor of Thorpe but seems probably to have remained water-meadows and rough grazing until modern development of this increasingly suburban location. The modern development of the site may be followed on the maps, which begin to be useful from Faden's map of 1797.

## 6.0 Cartographic Evidence

The maps available show that the river valley had remained as water-meadow and drained pasture until modern times. The first map to show the area in any detail seems to be Faden's small-scale map of 1797, which shows the area as water-meadow but with no further detail.

Bryant's map of 1826 is able to show the recent developments, depicting Carrow Bridge and Carrow Road (1810) and the malthouse built alongside the road (1824). The malthouse survived until redevelopment at NCFC in 2003.

Joseph Manning's map of c. 1834 now shows the terrace of red-brick houses on the south side of Kerrison Road, to the immediate north of the site, besides the malthouse *etc.* This map also shows the drains in the river valley, and serves to suggest that these may reflect the local topography, possibly even hinting at the presence and general location of the sand 'island'.

### Ordnance Survey maps

(Figs 3, 4 and 5)

The OS 1" 1st Edition of early 19th-century date (not figured) shows the drains in the valley and also the developments associated with the coming of the railway (1845); thus, it shows the rail line itself, besides the boathouse of the Norwich Boating Club by the river, and the malthouse *etc.*

Morant's map of 1873 shows all the above at a larger scale.

The 1st Edition of the OS 25" map (1886-8) is similar, but now with the addition of the Fire Engine House (outside the development area) and with more precise details. Except for the construction of buildings just south-west of the development area, little changed until just before the Second World War, with the addition of a new building at the extreme north-east part of the development area. Maps show that this was replaced by the present building here in the 1960s (and entered from Kerrison Road). The 1960s also saw the expansion of the Gothic Works to the west, onto this area.

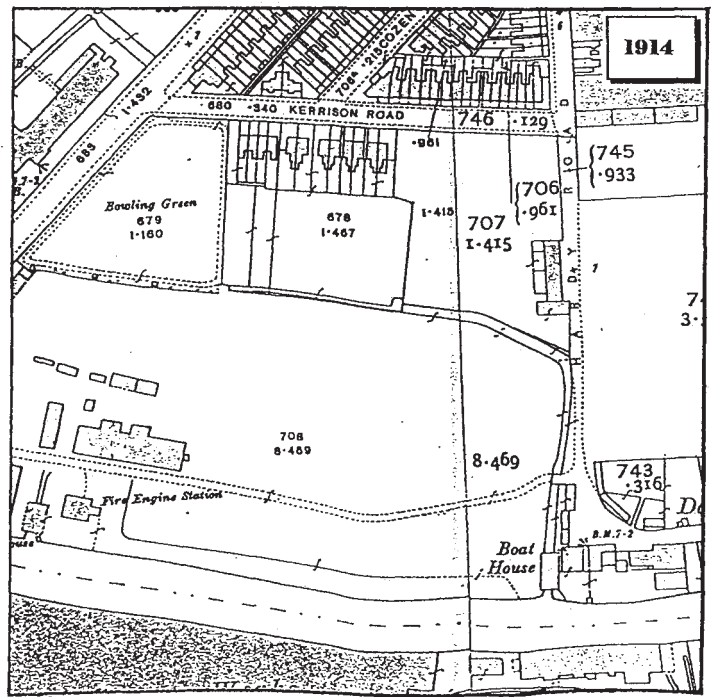
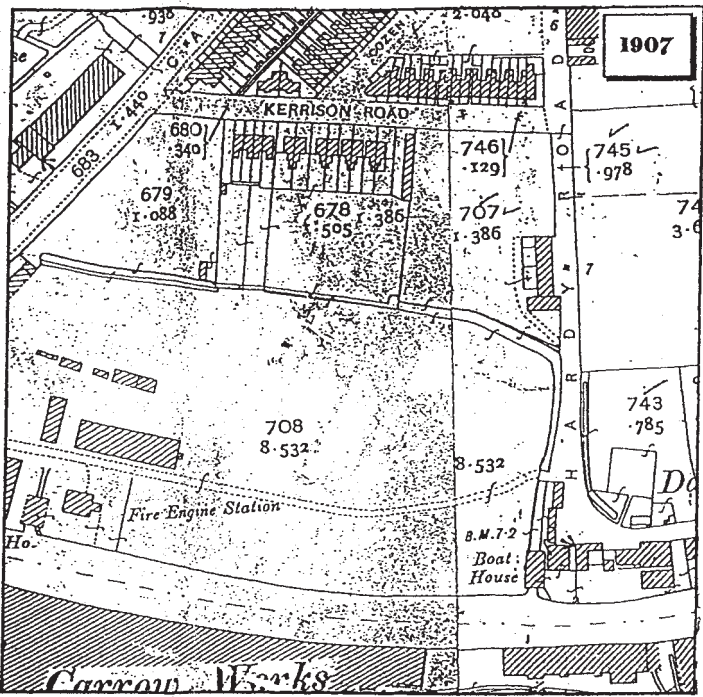
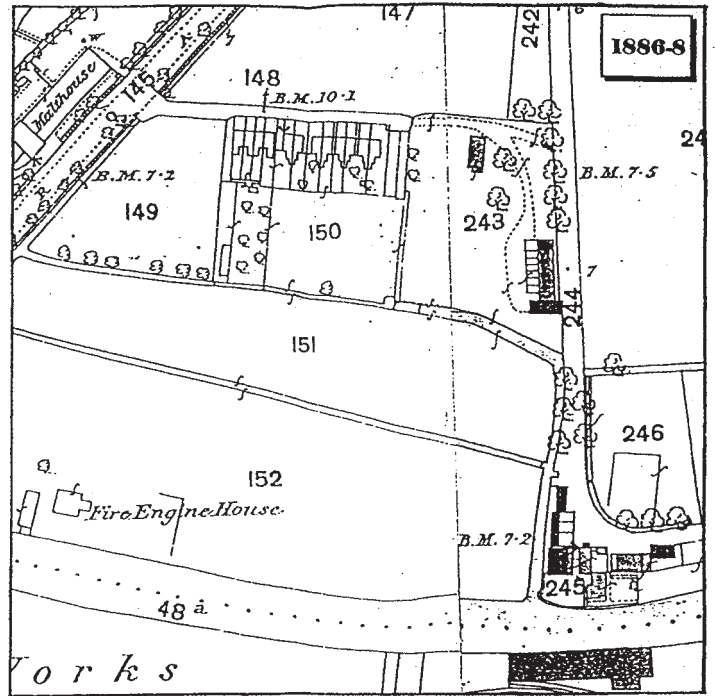
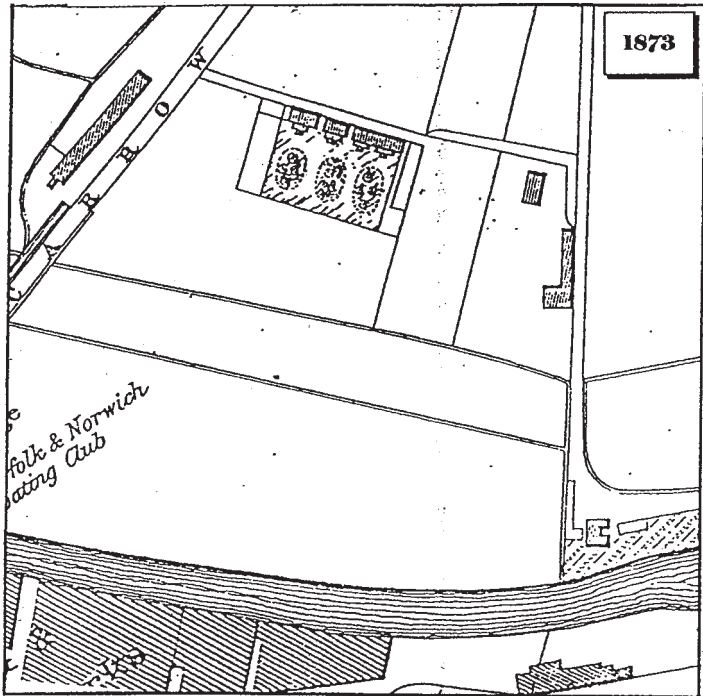


Figure 3. Ordnance Survey map sequence 1873 (Morant); OS 1886-8; 1907; 1914 (from SIC 2002)

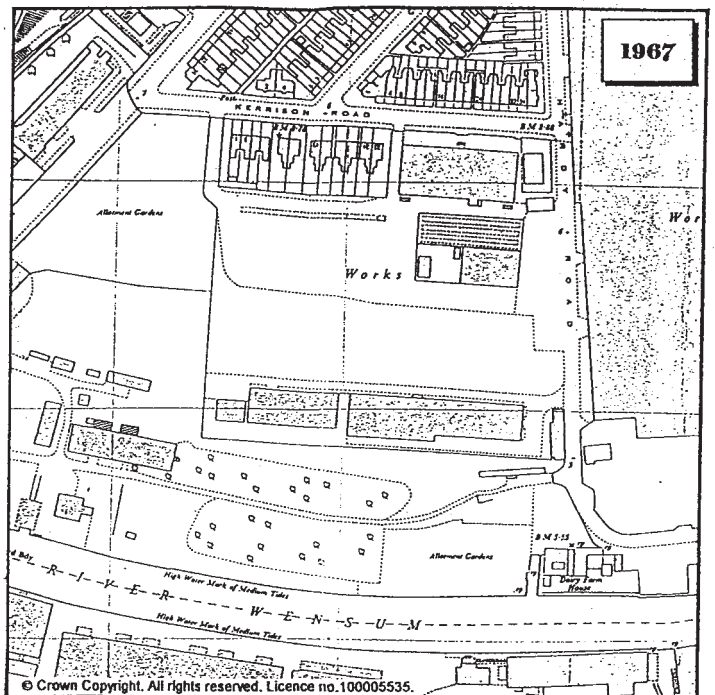
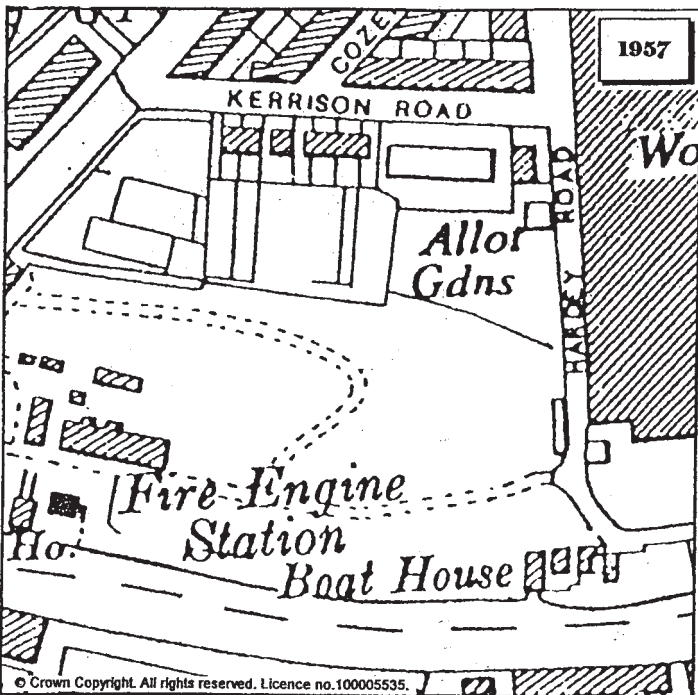
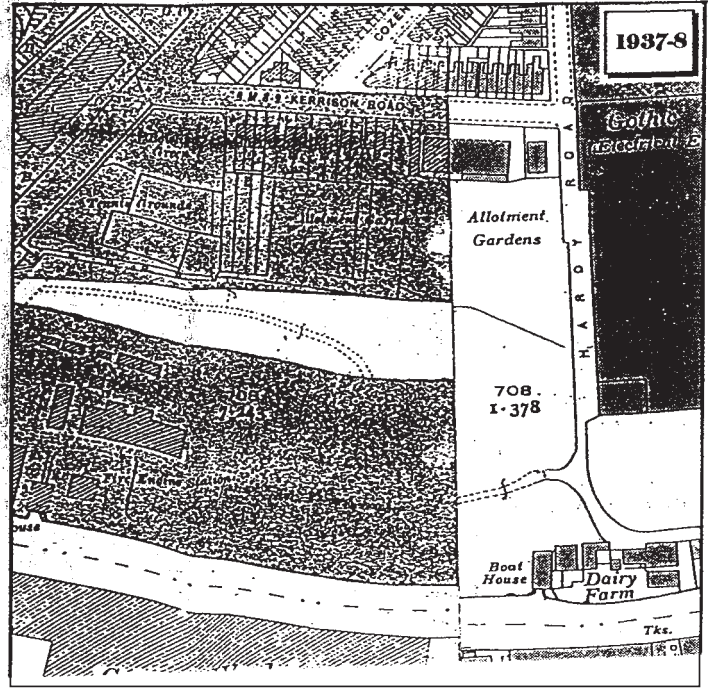
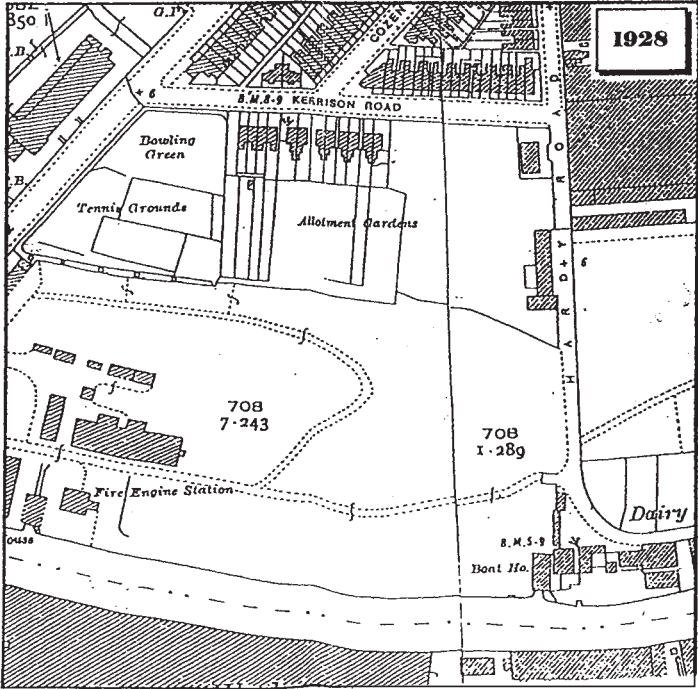


Figure 4. Ordnance Survey map sequence 1928; 1937-8; 1957; 1967 (from SIC 2002)

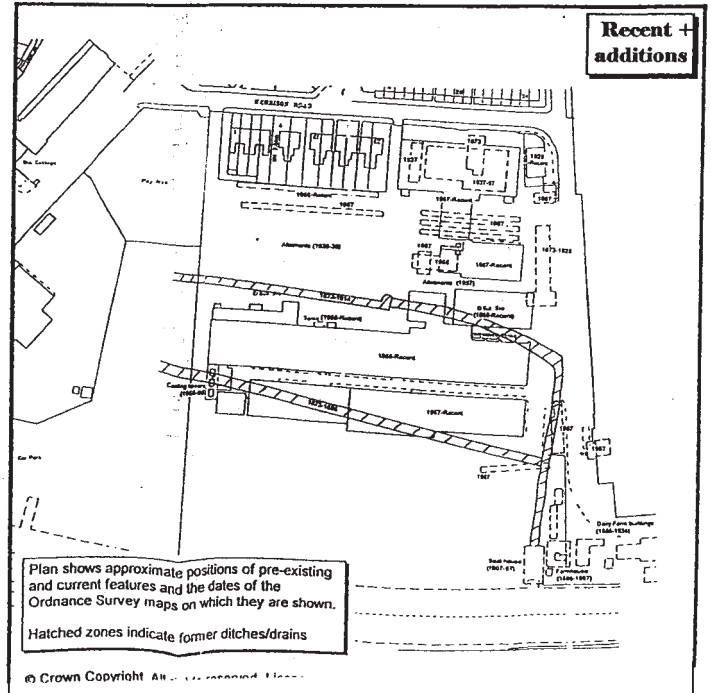
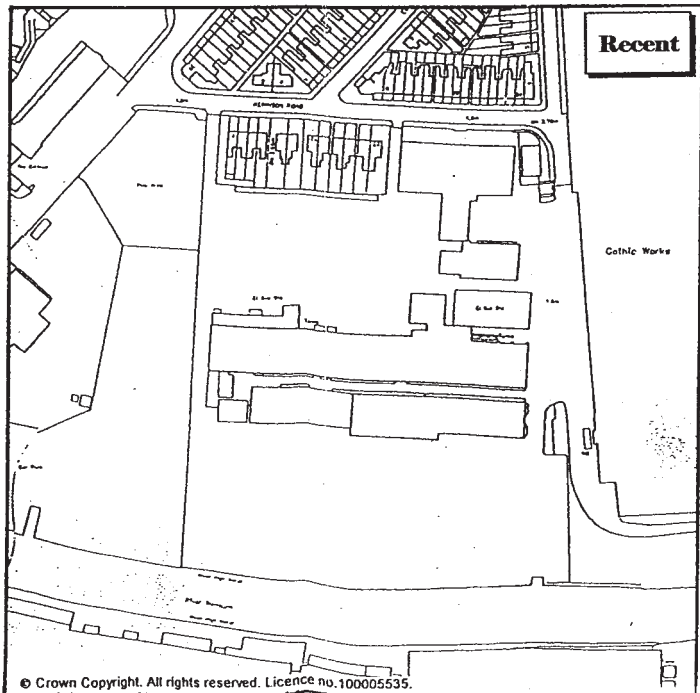
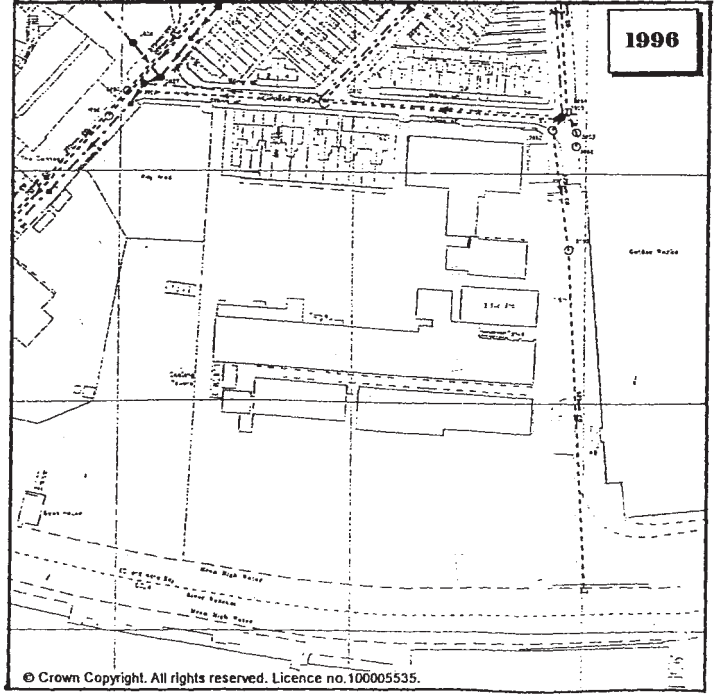
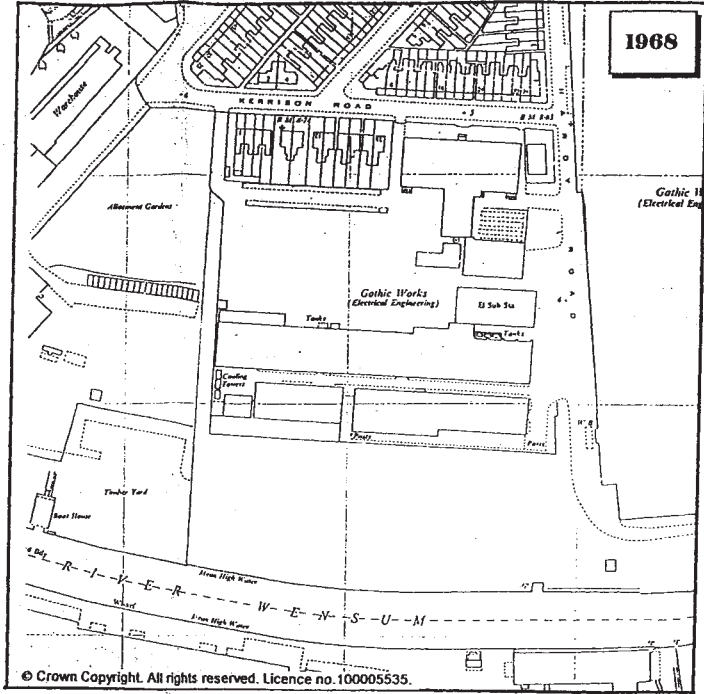


Figure 5. Ordnance Survey map sequence 1968; 1996; recent; recent with additions (from SIC 2002)

## Photographs

Photographs of the football ground taken by George Plunkett in 1935 add little to what is known from the maps, showing the avenue of trees along Carrow Road and the general aspect of the area, down to allotments mostly. Air Photographs taken by the RAF in 1946 add little to the evidence of the maps, showing the area clearly as allotments and rough grazing (NAPLIB TG8407 A and B).

## 7.0 Archaeological Observations

The observations concerning prehistoric finds are presented first, to reflect the current focus of interest. Selected sites only are mentioned.

### Prehistoric to Roman

NHER 465 (at Carrow Works): discovery of Mesolithic flint pick.

NHER 467: three long flints found, Mesolithic.

NHER 473 (at Carrow Works): discovery of mammoth remains, with hand axes and flakes (Acheulian-Clactonian).

NHER 474 (at Carrow Works): Palaeolithic flint flakes recovered from sand deposits.

NHER 39358: site of possible Bronze Age barrow, in the river valley to the west of Phase 1.

NHER 26476: investigations within the river valley deposits point to the evidence for earlier prehistoric activity and the environmental changes from the Mesolithic period (Wiltshire and Emery 2000).

NHER 26602: relates to all the archaeological work associated with the NCFC development.

In 2003, Trenches 1-5 were excavated, with significant results. Trenches 1 and 5 revealed prehistoric activity evidence, possibly of Mesolithic date, on a sand bar in the river valley under about 1m of modern deposits. Trench 1 also produced evidence of Neolithic activity. In Trenches 2, 3 and 4 the modern make-up was about 2.5m deep and overlay river peat deposits. In these trenches, the peat surfaces were exposed until modern land filling (Adams 2003).

Borehole and probe surveys allowed the extent of the sand island to be ascertained, besides the extent and depth of the river peats masking the sides of the 'islands' (Adams 2003, fig. 3).

In 2004, Trenches 6-9 were opened on the area of the sand bar within the Phase 1 development area. The results were equally significant (Adams 2005).

Trench 6 revealed sand over gravel, with residual Mesolithic flints, more prehistoric (Neolithic and later) flints at a higher level, an iron Age coin and sherds of Roman pottery. Higher levels produced some medieval artefacts.

Trench 7 produced residual Mesolithic flints besides features and flints of Neolithic/Bronze Age date.

Trench 8 produced Upper Palaeolithic flints *in situ* at c. 0.50m OD with Mesolithic and Neolithic/Bronze Age flints found but probably residual. Medieval artefacts represented casual losses.

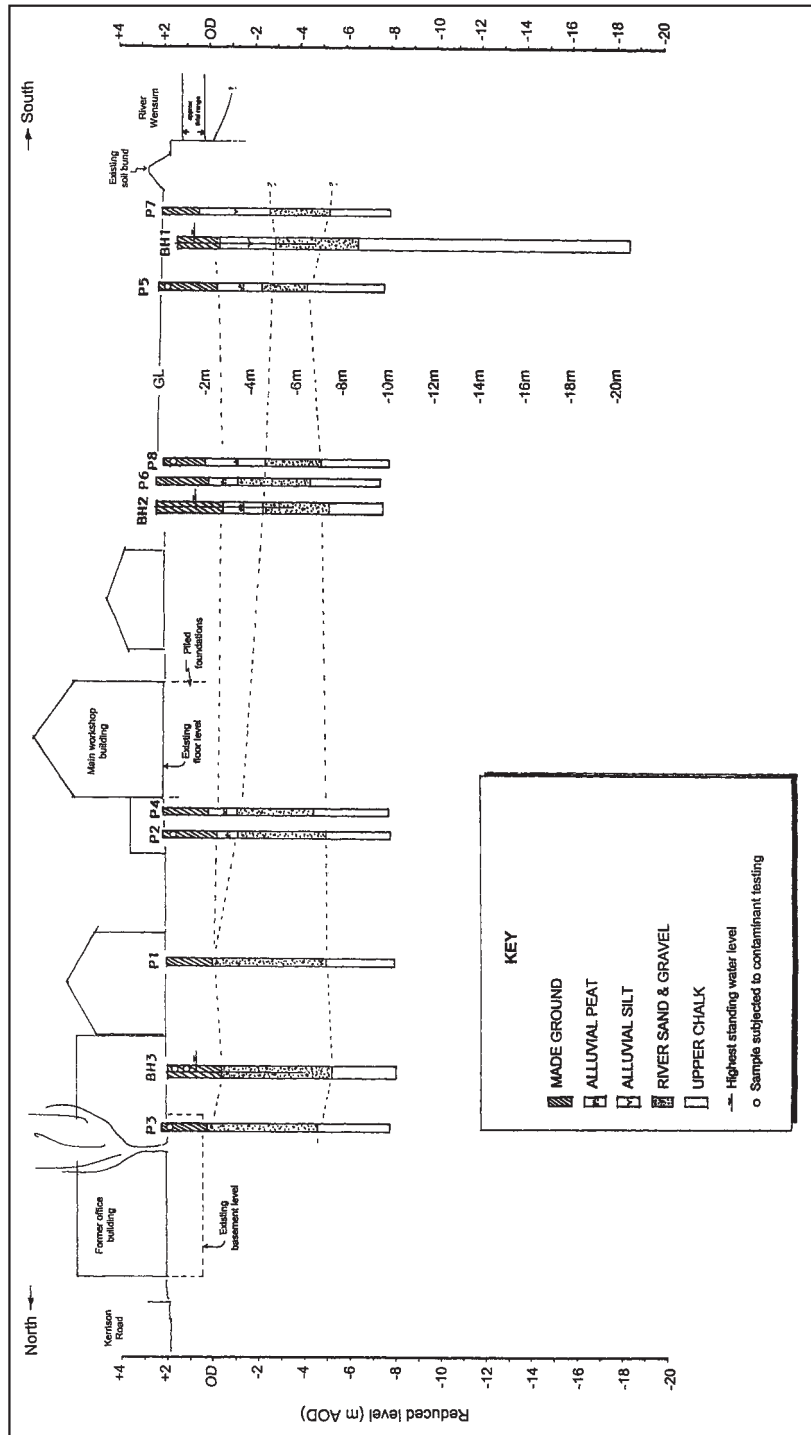


Fig. 6 Schematic section from SIC (2002) with permission. Viewed from west side. Below ground vertical exaggeration x4 approx.



Trench 9 also produced Upper Palaeolithic flints *in situ* at c. 0.70m OD, with Mesolithic and Neolithic/Bronze Age flints at a higher level. A significant find was material of Roman date.

A watching brief on piling *etc* by the riverside to the south-west of the Phase 2 site (and just east of Carrow Road), recorded more of the peats and river sand/gravels close to the river (Tatler 2004).

NHER 41287: evaluation, south of the river at Carrow Works: negative results (Oxford Archaeological Associates).

### **Modern**

NHER 38193: former malthouse (1824) in Kerrison Road. Building survey before demolition (Underdown and Smith 2003).

26114: railway worker's cottage.

26115: railway worker's cottage.

26116: railway worker's cottage.

26117: railway worker's cottage.

26118: railway worker's cottage.

41652: Laurence Scott Electromotors Gothic Works 1898.

The houses on the south side of Kerrison Road, to the immediate north of the Phase 2 site, are not listed but remain a good set of early 19th-century houses.

## **8.0 The Site Today**

The site is at present a generally level plot of land covering some 2.5ha, in part under concrete or tarmac, in parts still occupied by buildings of the 1950s and 1960s and part of the LSE works.

A borehole and probe survey was carried out by SIC over the Phase 2 area and the results set out in a report (SIC 2002). The report noted that:

The existing surfacing was underlain by disturbed fill material to a depth of 1.5-2.9m. Over most of the site [this] rests on natural soft peat or silt (Alluvial...) extending up to about 4.5m below ground level, underlain by...(River Sand and Gravel) forming a thickness increasing from 2.0 to 5.0m northwards across the site. The groundwater table was recorded standing at 0.8-1.8m deep in the standpipes (Fig. 6).

Three boreholes were put down. No 1 recorded 1.8m of made ground, then 2.6m of sandy clayey silt (Alluvial Silt), over 3.5m of sand and gravel before Chalk was reached. No 2 recorded 2.9m of made ground over 1.8m of peat and then nearly 3m of river sand and gravel. No 3 recorded 2.4m of made ground over 4.8m of river sand and gravel before Chalk was met.

The 19th- and early 20th-century maps record drains across the water-meadows. These have been progressively filled in since that date but may have related to the micro-topography of the water-meadows before landfill for industry. In that case, the drains may relate to any rise in the land surface caused by the sand island here. If

this was the case, then the long line of the drain running along the marshes may point to the general outline of this feature.

The Draft Master Plan (Fig. 7) shows that in the Phase 2 area most of the major proposed structures will lie towards the south part of the site, outside the likely area of the present 'sand island'. Over the area generally, the existing make-up is between 1.5m and 3m in depth, with Borehole 3 showing some 2.4m of make-up over the 'sand island'. On the 'sand island', the Plan indicates 'mews' and 'spaces for sport'.

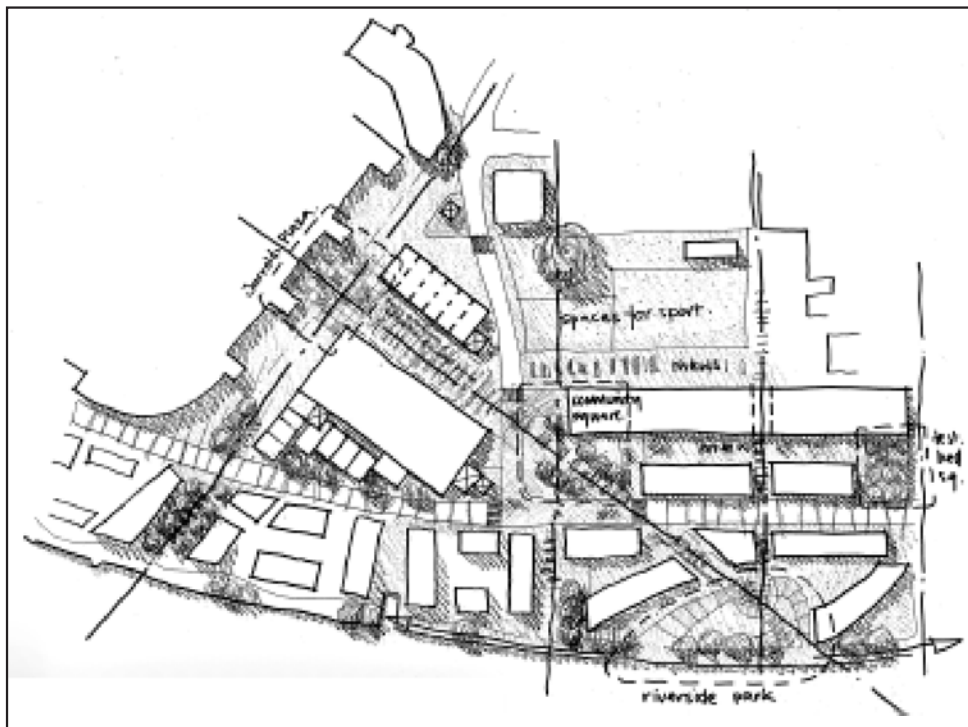


Figure 7. Draft master plan October 2005 (from TA Millard) with permission

## 9.0 Conclusions

The geotechnical information for the Phase 2 area allows the extent of the probable sand island and the surrounding peat to be identified and mapped. This shows that the island is present in the northern part of the area, although it should be stressed that at earlier periods peat growth may have been less extensive and the potential activity zone greater. The peat may mask an early activity zone.

Two factors in the assessment of the Phase 2 area must be stressed, both concerning changes in the course of the river and the development of the peat.

The river is cutting into the bank on the outside (south) of its wide bend, thus widening the valley southwards. The river channel, therefore, once ran further to the north, and its shift southwards must have been followed by an expansion southwards of the 'islands' too.

The other factor is the growth of the peat, which spread across the Wensum floodplain some time after c. 10,000BP (Wiltshire and Emery 2000; Murphy 1997), thereby sealing any prehistoric sites on the 'islands' developing within the expanding floodplain.

Potentially, therefore, any earlier prehistoric sites may lie towards the northern part of the whole 'island', the southern part being both later (and lower) and increasingly obscured by peat, until peat formation ceases, perhaps in the Late Saxon period.

Make-up across the site could be quite deep, with recent disturbance limited in extent and depth, with piled foundations for the present workshop and with the building on Kerrison Road having a basement (SIC).

The proposals (Fig. 7) indicate major disturbance in the south part of the area, in the peat region closer to the river, with relatively minor disturbance to the north, in the area of the sand island.

The structures on the site are modern factory buildings of no great distinction; these include a large workshop, a copper store and the canteen (the latter of single storey build). On the Kerrison Road frontage a post-war office block with a formal façade stands facing the street.

Norfolk Landscape Archaeology will make recommendations for future work based upon this report.

### ***Acknowledgements***

NAU is grateful to John Spalding of TA Millard for commissioning this work and to Matthew Williams of SIC for permission to use material from his report (SIC 2002). This material was kindly made available by John Spalding. The writer is grateful to David Adams for permission to use his report (Adams 2005) and to his colleagues David Whitmore and Andy Shelley for information and advice.

This report has been edited by Andy Shelley and Alice Lyons and produced by David Dobson.

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