# ARCHAEOLOGICAL EXCAVATION

# OF THE FORMER BECKTON NURSERY

## ARCHIVE REPORT

**HE BN 94**

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## 1. ABSTRACT

The site was located at the former Beckton Nursery, Newham Way, North Beckton. Two trenches were dug revealing a 3m depth of peat overlying a silty clay, both trenches contained evidence of cultural activity. Two staked brushwood structures

were found in Trench 1, one of these being a substantial NE/SW trackway. Trench 2 contained several brushwood features, some of which were probably trackways but others had unknown functions. There was evidence of woodworking in the form of waste wood chips. Also of interest, lower down in the peat deposits of Trench 2 were several fallen yew trees.

Above the peat a 2m depth of alluvial clay was observed in both trenches. In Trench 1 at this interface were two natural north-south water channels. In the middle of the alluvial clay of Trench 2, a north-south ditch of an uncertain dating probably between the Roman and medieval period was found. Above the clay was a soil horizon, 20th century features relating to World War II, and layers of made ground associated with modern redevelopment of the site.

## 2. REPORT INTRODUCTION

This report sets out details of the excavation and recording of the archaeological deposits and features at the nursery site. This introduction explains the layout of the

report, how the results are set out for the reader to use and understand, and to facilitate the checking and use of the site archive.

Archaeological deposits and events represented by physical remains such as a ditch, the material filling a ditch, a wall, a stake, or a layer of soil are recorded on site as a context and allocated a context number. When several contexts are related, e.g. a pit and the material filling it, a line of post holes or a row of stakes, they are brought together into small discrete groups.

The contexts are listed with short descriptions and the groups are discussed in the "SUMMARY OF GROUPS" (Appendix III) so as to fully see their archaeological implications. Any black and white photographs and the colour slides relevant to that group are also listed in this section. The groups are given a three digit number (e.g. 2.05), the first digit representing the trench in which the group occurred, therefore Group 2.05 is the 5th group in Trench 2.

The stratigrphic relationships between the contexts under discussion are illustrated in a matrix form:

e.g.
27
|
28
|
30
|

In this diagram the stratigraphic relationships are shown as follows: context 27 occurred after both contexts 28 and 30, context 28 took place after context 30 but before context 27 while context 30 happened before both contexts 27 and 28.

In the "PHASE DISCUSSION" significant blocks of archaeology representing single or related activities within a band of time on the site are defined, e.g. the occupation of a settlement or building, the construction or demolition of a structure, the change of settlement pattern or a period of agriculture. When a significant change in activity is found in the archaeological record of a site then a change of phase is said to have happened. By discussing the phases and comparing them we can see the overall sequence of events at the site.

The "LEVEL III INDEX" (Appendix I) lists every context recorded on site with the group and phase to which it belongs. The index also lists any plans or section drawings the contexts appear on, these can be accessed in the site archive which is held by Newham Museum Service.

## 3. SITE INTRODUCTION

An archaeological evaluation was commissioned by London and Quadrant Housing Association at the site of the former Beckton Nursery, Newham Way, North Beckton,

E6, (see Figure 1). This was in advance of the redevelopment of the site, planning application number N/93/42. The evaluation work took place between the 24th January, 1994 and the 12th March, 1994 by staff of Newham Museum Services (formally Passmore Edwards Museum). The archaeological deposits uncovered demanded further attention and a rescue excavation followed without break until 20th May, 1994. The evaluation was based on a project design, (Meddens, 1993) drawn up in reference to the project brief, (Hunter, 1993), the rescue phase was based on a further brief, (Pontin, 94).

The site is located in an Archaeological Priority Zone that covers a wide band of alluvium that lies along the northern foreshore of the River Thames. These deposits consist of peat and clay horizons which overlie Thames floodplain gravels. They date from prehistoric to post-medieval periods and represent fluctuations in the level of the river. Periods of flooding have lead to the deposition of clay, while dryer conditions have lead to a marsh environment resulting in the formation of a substantial layer of peat. These waterlogged deposits can provide ideal conditions for the preservation of floral and faunal remains giving valuable information about the local environment on these marshes. In addition to this great environmental potential, waterlogged conditions have been proven to contain preserved archaeological timber structures.

Until recently, little was known about the archaeological potential of the Thames floodplain deposits, but excavations by Newham Museum Services have produced an unexpectedly high density and frequency of archaeological activity.

An excavation at Bridge Road, on Rainham marshes in 1989, uncovered a brushwood trackway and staked fence line within the peat. In 1993 an archaeological excavation in advance of the Evelyn Dennington Road housing development, east of, and adjacent to, the nursery redevelopment, discovered a north-south staked brushwood trackway in the peat deposits, (Beasley, 1993). Also in 1993 an archaeological investigation at Hays Storage Services Ltd., Pooles Lane, off Ripple Road, Dagenham, unearthed a north-south causeway, made from gravel and burnt flint, in the alluvium (Divers, 1993). More brushwood and stake constructions, working platforms and possible revetment were found in 1993 at Highbridge Road, Barking in the peat deposits associated with flood plains of the River Roding, (Chew, 1994). An excavation of peat deposits at Fort Street, Silvertown, E16 by the Trust for Wessex Archaeology revealed a trackway constructed from substantial timbers (pers comm A Croquet, TWA). All the features on these sites have been provisionally dated to the middle Bronze Age (approximately 1500 to 1100 BC). These and other sites are show in Figure 2.

Historically, the site lies on the East Ham Levels, an area of over 1500 acres that were a defined in the 16th century (Powell, 1973, p17). In the medievil period, almost half of this land was in the control of the Abbeys of Stratford and Barking who took main responsibility for flood control (Powell, 1973, p17). There are various records of flooding on the marshes in the 14th, 15th and 16th centuries.
A brief search of the Greater London Sites and Monuments Record (GLSMR) shows that during the construction of the Northern Outfall Sewer in 1863, a Roman cemetary was found, (SMR 060210). This was on the gravel terrace, only two hundred meters north to the site on what is now Roman Road. Another interesting find from the

GLSMR was a prehistoric flint arrowhead found on the allotments to the south west of the junction of Newham Way and Manor Way (SMR 061775).

## 4. METHOD

The evaluation phase of the excavation consisted of two trenches and an extensive auger survey comprising of 6m deep bore holes at a 5m spacing along an east-west transect across site, details of this survey are presented in Appendix V. Trench 1 was positioned to investigate a gravel anomaly detected in Bore Hole 2 of an engineers technical report (Analytical Geotechnics, July 1994) supplied by the site developers. The location of the second trench was decided after the initial results of the auger survey were analysed to maximise the potential of encountering archaeological deposits and features, (see Figure 3).

Trench 1 measured 9m x 9m at the top, health and safety considerations required the sides to be stepped in 1m every 1m down, this gave a 5m x 5m working area at a depth of 3m where the gravel had been detected. The trench was machine dug to this depth then hand dug one meter giving a total depth of 4m with a 3m x 3m working area.

Trench 2 was to be substantially larger with a total potential depth of 6m. To address the health and safety, and technical implications involved with a trench of this size, advice was taken from the Morton Partnership Ltd., civil engineers. They recommended a sloped ramp for machine access to the base of the excavation not exceeding 15 degrees. These recommendations were carried out. This meant that Trench 2 measured 35m x 17m at the top, stepping in 1m every 1m down, providing a 5m x 5m working area at a depth of 6m. The second step, 2m down, was 2m wide for extra safety and to allow the digging of a drainage channel around the trench to feed surface water into a sump, (see Figure 4).

The rescue phase of excavation involved extending the first trench to the west providing a 6m x 3m working area at a depth of 4m with the addition of a machine access ramp. Trench 2 was not extended but excavation continued to the bottom of the peat at the full depth of 6m.

Archaeological deposits and features were exposed and cleaned, recorded as contexts on proforma sheets, planned at 1:20 on proforma planning sheets, photographed with black and white print and colour slide film and, where appropriate, sampled for post-excavation analysis. Trench sections were drawn at 1:10 and the trenches were located on the site grid which in turn was tied into the Ordnance Survey grid.

All the context records, plans, sections and photographs that make up the site archive are stored with the Newham Museum Services at the Archaeology and Local History Centre, 31 Stock Street, Plaistow, London E13 OBX.

Bulk samples were taken every 0.05m and a column sample using monolith tins was taken through the entire peat sequence in Trench 2. These samples were taken by theEnvironmental Archaeological Services of the Museum of London Archaeological Services, processing of these samples is continuing.

Site Grid relative to Ordnance Survey Grid (Local scale factor 0.99982)
400 E / 400 N = 542 307.933 E / 182 056.792 N
462.2 E / 400 N = 542 369.761 E / 182 050.563 N

## 5. PHASE DISCUSSION

PHASE 1

This phase represents a band of alluvial silty clay below the peat deposits. This material constitutes evidence for standing water such as a cut off meander or pond (pers comm Dr. C French, Palioenviromentalist, Cambrdge University). Only Trench 2 was deep enough to reach this alluvium, no cultural activity was observed.

PHASE 2

Evidence of this phase was only observed in Trench 2, and represents a period when the water level on the flood plain of the River Thames dropped and the environment changed creating ideal conditions for vegetation to grow. Over time, this dead vegetation builds up resulting in this first phase of peat accumulation. The bottom of the peat was carbon 14 dated (cal 2 sigma), 4670-4635 B.C. or 4620-4360 B.C.

PHASE 3

Due to its depth, the deposits representing this phase were only observed in Trench 2. The phase represents a period of continued peat formation with the growth of yew trees (taxus) which have fallen naturally without any apparent human involvement. The presence of yew trees is of great intrest as this spieces is usually associated with a dry alkaline environment and not as a native of acidic marshlands. Having said this, it is not uncommon for the stools of yews to be found in wood peats, stools have been excavated in the Cambridgeshire fenlands and in submerged pine forests on the Dutch- Belgian border while its pollen has been detected on the Somerset Levels (Godwin, 1975, p115).

PHASE 4

The deposits of phase 4 were the earliest to be excavated in Trench 1, and were also evident in Trench 2. Like Phase 3, this phase represents a period of continued peat formation with the growth of several species of tree which had fallen naturally without any apparent human involvement. The distribution of the trees can be seen in figure 5.

PHASE 5

This phase represents a period of intense cultural activity resulting in the construction of many brushwood structures. Many of these features were not very substantial, possibly representing only the remaining traces or collapsed debris of what may have once been a much more substantial structure. Consequently the nature and purpose of some of these constructions is not obvious and can only be surmised.

The term brushwood is used here to describe cut lengths of round wood, usually coppiced shoots but also branches, typical dimensions are between 0.01m and 0.03m diameter with lengths of up to 1.5m. The brushwood identified on site was alder (alnus) but further analysis of samples continues. Frequent cut ends were noted and sampled, (see Figure 6) these are typically cut at an angle of 30 degrees to the length of the wood, the cuts are clean and smooth suggesting the use of a sharp metal tool.

The two structures in Trench 1 were constructed from brushwood secured by stakes. These were context 231 (group 1:05) a north-south alignment of brushwood secured by a row of stakes with an exposed length of 2.80m, this is assumed to be a fence (see figures 7 and 8).

The other staked structure is context 4 (group 1:07) which is the most substantial structure on site, it is a north-east/south-west trackway with an exposed length of 3.30m (see figure 9) The trackway is constructed from brushwood lying along the length of the structure, this brushwood was seen to have several distinct component parts all secured by two rows of stakes creating a 'cradle' (see figure 10). A section drawing through this trackway is show in figure 11 and an isometic reconstruction shown in Figure 12.

The stakes belonging to both these features appeared to be essentially the same, varying in length from 0.40m to 1.05m and having diameters between 0.02m x 0.07m. Each stake's end is pointed with up to 5 cuts and some have had side shoots trimmed off but apart from this are unworked.

Two samples were carbon 14 dated from context 4, the larger of the two structures in trench 1. Conflicting results were given so further dating may be required, the two dates were cal 2 sigma 1430-1200 BC and 1910-1515 BC. The second of these dates is suspected to be spurious as it does not correlate to any of the neighbouring sites in these same deposits. Further samples will be dated to confirm this.

Trench 2 also contained several brushwood structures none of which were secured or supported by stakes. A distinct stratigraghic relationship was established between two separate structures. These were allocated to sub-phases 5.1 or 5.2 along with other groups of contexts assumed to be continuations of these features. Other groups of contexts, whose relationship with these sub-phases was not established, remained in Phase 5.

Phase 5.1 (Trench 2 only)

This sub-phase consists of the longest brushwood structure on site, context 138 (group 2:16), a north south feature. It was assumed to be a trackway although it was not very substantial with no obvious structural integrity and could be the collapsed remains of another type of structure such as a fence. To the north, context 138 ended due to severe root disturbance from context 127 (group 2:43, phase 6). but two isolated brushwood features further north could represent a continuation of this structure. These were a circular depression filled with brushwood, (context 50, group 2:21), perhaps the lower trace of context 138 and a loose collection of brushwood, (context 82) observed in the south facing section of Trench 2, (see Figure 13).

Phase 5.2 (Trench 2 only)

Directly above, and independent of, context 138 (sub-phase 5.1) was context 90 (group 2:18), a brushwood structure on an ENE/WSW alignment. The bulk of the structure was composed of brushwood lying along the length of the feature supported on two perpendicular bundles of brushwood. The structure continued to the south west beyond the limit of excavation.

To the east of this feature lay context 34 (group 2:26), an east-west feature assumed to be a continuation of context 90. Despite substantial root damage, a distinct construction method could be observed, this involved a repeated patern of alternating bundles of brushwood, firstly perpendicular, then along line of the feature. This structure was the most substantial in Trench 2 was assumed to be an in situ trackway.

Heading north from context 90 was context 89 (group 2:18), another brushwood structure, this appeared to be of a vertical type, like a fence or wall, although there was little to give it any vertical rigidity. It was 2.36m long, the south end being entwined with context 90 showing that the two features were contemporary. These two features were initially thought to be two sides of a possible rectangular enclosure but this seems unlikely now. All the features of this sub-phase are shown along with the rest of phase 5 in figure 14.

Phase 5 continued (features not allocated to either sub-phase, Trench 2)

Two more features that were initially though to be associated with contexts 89 & 90 (group 2:18, sub-phase 5.2) were not actually included in that sub-phase. Context 101 (group 2:23), was a small pile of poles, lying parallel to, and slightly north of context 89 possibly gathered stakes waiting to be used. The other was a short length of timber, (context 96) possibly the cut end of a stake was situated just to the north of context 90.

Directly above feature 138 (sub-phase 5.1), along the same line, were two much less substantial alignments of brushwood, contexts 106 and 143 (group 2:20) resting on three round timbers, two of which had a cut end, context 172. These contexts could be part of context 138 below having collapsed, a rebuild of that structure, or a totally independent feature.

To the west of Trench 2 were more brushwood alignments, context 105 (group 2:33) was a 2.50m long feature of an apparently vertical type, possibly a fence or wall. As with context 89 there appeared to be little to support the structure. Directly south of this feature and on the same alignment was another brushwood structure, context 150 (group 2:31) assumed to be a trackway due to a construction method similar to that of context 34. To the south, context 150 rises up and terminates on a north-south fallen tree 152, (see phase 4) and to the north it led to a handful of brushwood fragments (context 153, group 2:31) which in turn led on to a bark sheet, context 154 (group 2:15). The tree could have been used as a continuation of the trackway and the bark sheet may have been utilised as a surface associated with the adjacent brushwood features.

Other brushwood features run on to, or up to fallen trees of phase 4. It is not clear if this is coincidence, or if the trees have been intentionally incorporated into the structure. An example of this option is where the trees, contexts 162, 163, 164, 165 and 166 (group 2:10) sandwich the brushwood trackway 138 (group 2:16), this could mean that these tree remains were incorporated in to a platform.

Context 140 (group 2:27) was probably the most ephemeral brushwood feature on site, it was at least 1m long on a NE/SW alignment and consisted of only a handful of pieces of brushwood. It surely must have been only the remaining trace of a larger more substantial feature. Just to the north of this feature were several cut, but timbers, contexts 141, 145 and 147 (groups 2:28, 2:29 and 2:30), possibly remnant stakes of the same, more substantial feature.

These features show that there was a great deal of human activity on the marshes during this period. A clue to one of these activities is given by contexts 28, 33 and 68 (group 2:35), timber waste chips probably resulting from carpentry on site, or possibly tree felling, (see figures 15 & 16). There were no worked timbers associated with these wood chips or tree stumps with tool marks present. There is nothing to suggest habitation of the site such as pottery, flint tools or waste flakes, or even charcoal. People may have used the marshes, possibly from a nearby settlement, to exploit the natural resources. Trackways were built to traverse the soft ground and other structures were constructed to enable them to carry out their activities. Alternatively, the structures served to get people across the marshes to destinations on the other side.

## PHASE 6

During this phase the site goes out of use, peat continues to build up and trees grow. The brushwood structures fall into disrepair being disturbed and damaged by roots and are finally buried and preserved by the peat, (see Figure 17).

## PHASE 7

This phase represents a period of continued peat build up with no apparent cultural activity. The top of the peat deposits were carbon 14 dated, cal 2 sigma, 755-685 BC or 540-360 BC or 280-250 BC

## PHASE 8

Deposits associated with this phase are only present in Trench 1 and represent a period when the water level starts to rise, forming natural slow moving, north-south water channels.

PHASE 9

The water level continues to rise during this phase resulting in flooding the alluvial deposition of clay.

PHASE 10

During the period of flooding represented by phases 9 and 11 the water level must have dropped at least once, possibly seasonally allowing the digging of a large north-south drainage ditch of an unknown date between the Roman and medieval period, (see Figure 18).

PHASE 11

Flooding continues and more clay is deposited in a similar process to that which created the deposits that represent Phase 9.

PHASE 12

This phase represents a soil horizon from a period of agricultural or horticultural land use which continued until the 20th century.

PHASE 13

This phase represents 20th century land use with features connected with World War II civil defences and allotment gardening.

PHASE 14

This phase represents late 20th century ground work in preparation for the post World War II redevelopment of the site.

## 6. SUMMARY

Trench 1

Trench 1 was excavated to a total depth of 4m revealing 1m of made ground dumped on a soil horizon from a period of agriculture and horticulture. This lay on a 2m depth of alluvial clay that overlay peat excavated to a depth of 1m. The gravel anomaly the trench had be located to investigate proved to be the lower fill of a large modern ditch associated with the ground works during the post World War II redevelopment of the site.

Fortunately this large modern feature was confined to the north of the trench allowing further excavation through the peat deposits. During evaluation, the edge of a brushwood and stake structure was exposed, the trench was later extended to see the true nature or the feature and allow further excavation. The structure was shown to be a substantial north-east/south-west orientated brushwood trackway secured by two rows of stakes. Adjacent to this, a north/south staked brushwood structure was exposed.

Also of interest in this trench were two natural water channels at the interface of the clay with the peat. The fills of which contained many snails which should provide valuable information about the environment at the time they were formed.

Trench 2

This trench was substantially larger than Trench 1, the full 3m depth of peat being excavated. The sequence of peat, silty clay and made ground was the same as that observed in Trench 1. Again in this trench, at the same depth, preserved in the peat were a large number of brushwood structures, none were as substantial as the trackway in the other trench and none were secured in situ by stakes although several potential stakes were found. The function or even the nature of these constructions was not obvious but we can say that the brushwood was definitely cut and purposely positioned, rather than just being a pile of branches. Also, spread through out the trench were many waste chips of wood, probably the remnants of tree felling or carpentry at the site.

Another interesting discovery lower down in the peat were several fallen yew trees, yew is not usually associated with marshy conditions that would have been common in the flood plains at that time.

Above the peat are two thick layers of alluvial clay, a large straight north-south drainage ditch of an unknown date was recorded. It was dug through the lower band of clay, then silted up before the next phase of flooding sealed the ditch under the second band of alluvium. The lower fills of this ditch contained remains of many snails, these were sampled for environmental analysis.

The deposits observed in Trench 2 are shown in section, (see Figure 19).

## 7. CONCLUSIONS

The density and frequency of brushwood features in both trenches shows the scale and intensity of human activity on the marshes during this period. While the two structures in Trench 1 are fairly substantial, those constructed in Trench 2 were not so, and may have had infrequent or short term use.

It is difficult to say exactly what purpose some of these features served, some were certainly trackways for traversing the soft marshy ground. Examples of similar trackways have been found locally in Beckton, (Beasley, 1993) and Barking, (Chew, 1994) and further away in the Somerset Levels (Coles and Orme, 1980), Severn estuary (Bell, 1992 & Bell, 1993), Corlea in Ireland (Raftery, 1992) and the Kanto region in Japan (Matsui, 1992). Other less substantial features have been assumed to be trackways while some of the features appear to reflect the remains of vertical features such as a fence or wall, but how they remained upright is not clear, at present, from their construction. Other brushwood features found elsewhere in Britain include shooting platforms or hunting-blinds on the Somerset levels (Coles and Orme, 1980, p50) and brushwood filled drains on the Fens (Pryor, 1982, p45) and these could be possible interpretations for some of the features found on site.

One activity for which evidence was found on the site was for tree felling and carpentry. Through out Trench 2 at this same level many waste wood chips were located although none of the timbers they originated from were found.

It has been assumed that some of these features were in use concurrently, but we do know that they were not all contemporary. As the function of many of these features is not known, it can only be surmised how they relate to each other.

These structures would be fairly quick and easy to build requiring little labour, but long term planning and woodland management is required to coppice trees several years before the wood is needed.

There is no evidence to suggest habitation of the site, the nearest settlement was probably on the higher dry ground on the Thames gravel terrace only 200m north. It is not known exactly what attracted people to the marshes during this period, it is assumed they seasonally exploited its natural resources. This period of exploitation only lasted for a relatively short time, throughout the entire 3m build up of peat, all the archaeological features occurred at approximately the same level which currently appears to cover a comparatively narrow chronological window between 1500 and 1100 BC. Did the environment change reducing the availability of the natural resources sought by these people, were these resources over exploited or just no longer desired? Research is continuing which may help in understanding these questions.

This excavation has shown us that there was an incredible intensity of anthropogenic activity on the marshes for a relatively short period. Unfortunately, due to the depth of

the peat and associated archaeology, it was only possible to excavate a very small area (approximately 0.4% of the site). It would have been desirable, but unrealistic, to increase the area of the trenches to see the extent of this activity, the relationship between the various features and to give an idea of there function.

A strong argument for not enlarging the trenches, apart from the immense cost, is the destructive nature of exposing, let alone excavating, these features. The moist conditions in the peat have kept the wood in an excellent state of preservation but exposing the archaeology will cause it to dry out and decay. Having said this, a much greater threat to this preservation within the peat is the recent development of the area. The peat is capped by a 2m depth of clay that traps the moisture in the peat preventing it from drying out but modern building techniques involve piling through the clay and peat thus disturbing this equilibrium.

Another option for the investigation of this archaeology is borehole or auger surveys which have proved to be a useful additional tool but an unsatisfactory replacement for excavation. The auger survey at Beckton Nursery (Appendix IV) provided much information about the underlying topography and geology but failed to find any archaeological features even in the region of Trench 2 where such features were abundant, although it helped narrowing down which areas to opt for in selecting trench locations.

## 8. ACKNOWLEDGEMENTS

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## 9. KEY TO ABBREVIATIONS AND SYMBOLS USED

| | |
|---|---|
| B/W | black and white prints |
| C/S | colour slides |
| OD | high relative to ordinance datum (+ above, - below) |
| > | greater than, i.e. total length unknown or unexposed |

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