

ROYAL MAIL SORTING OFFICE, LONDON ROAD, TWICKENHAM, LONDON BOROUGH OF RICHMOND UPON THAMES (NGR: TQ 154 279): REPORT ON THE GEOARCHAEOLOGICAL INVESTIGATIONS

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INTRODUCTION

This report summarises the findings arising out of the ge archaeological investigations undertaken by Quaternary Scientific (University of Reading) in connection with the proposed development at the former Royal Mail Sorting Office, London Road, Twickenham, London Borough of Richmond Upon Thames (National Grid Reference: TQ 154 279; Figure 1). The site lies on the floodplain of the River Crane, which borders the site to the north, and is approximately 0.5km west of the River Thames. The site occupies an area of around 1.15 hectares and is approximately level at around 8.0m OD (Dicks and Meager, 2012). The British Geological Survey (1:50,000 Sheet 270 South London 1998) shows the site underlain by Kempton Park Gravel, resting on London Clay bedrock. An area of Langley Silt is mapped to the east of the site, abutting against Alluvium associated with the River Thames to the south.

During previous geotechnical investigations 17 boreholes were put down across the site (Figure 2). These boreholes indicate a sequence of London Clay overlain by River Terrace (Kempton Park) Gravels overlain by Alluvium and Made Ground. In boreholes BH2, BH3, BH6 and BH8, between 1.3 and 2.5m of Made Ground directly overlies River Terrace Gravels; these sequences are not considered to be of ge archaeological interest. Similarly, only a thin horizon (20-40cm) of inorganic alluvium was recorded in boreholes BH4, BH5, BH12 and BH16 between approximately 6.6 and 7.2m OD. Slightly thicker horizons of inorganic alluvium (50-100cm) were recorded in boreholes BH7, BH9, BH14, BH15 & BH18 between approximately 5.5 and 7.5m OD. However, two geotechnical boreholes (BH10 and BH11) contained sequences with some ge archaeological potential. In BH10, the alluvium that separates the River Terrace Gravels from the Made Ground comprises a 60cm thick unit of clayey peat between 6.0 and 6.6m OD. In BH11, a 70cm thick unit of Peat occurs at greater depth between 3.8 and 4.5m OD. Indeed, this latter unit may be of pre-Holocene age as it occurs beneath 1.4m of sands, gravels and clays (potentially River Terrace Gravels). None of the other geotechnical boreholes record such deposits at this depth or within the Gravels.

The aim of the geoarchaeological investigations at the former Royal Mail Sorting Office site was to clarify the nature of the sub-surface stratigraphy, and evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, a total of five test pits were put down in selected trenches during the course of the archaeological investigations at the site. In order to target the areas of geoarchaeological potential discussed above, and to provide a good spatial spread of test pits across the site, test pits were put down in Trenches 2, 5, 7, 9 and 11 (Figure 2).



Figure 1: Location of the former Royal Mail Sorting Office site (NGR: TQ 154 279). Original figure provided by CgMs Consulting.

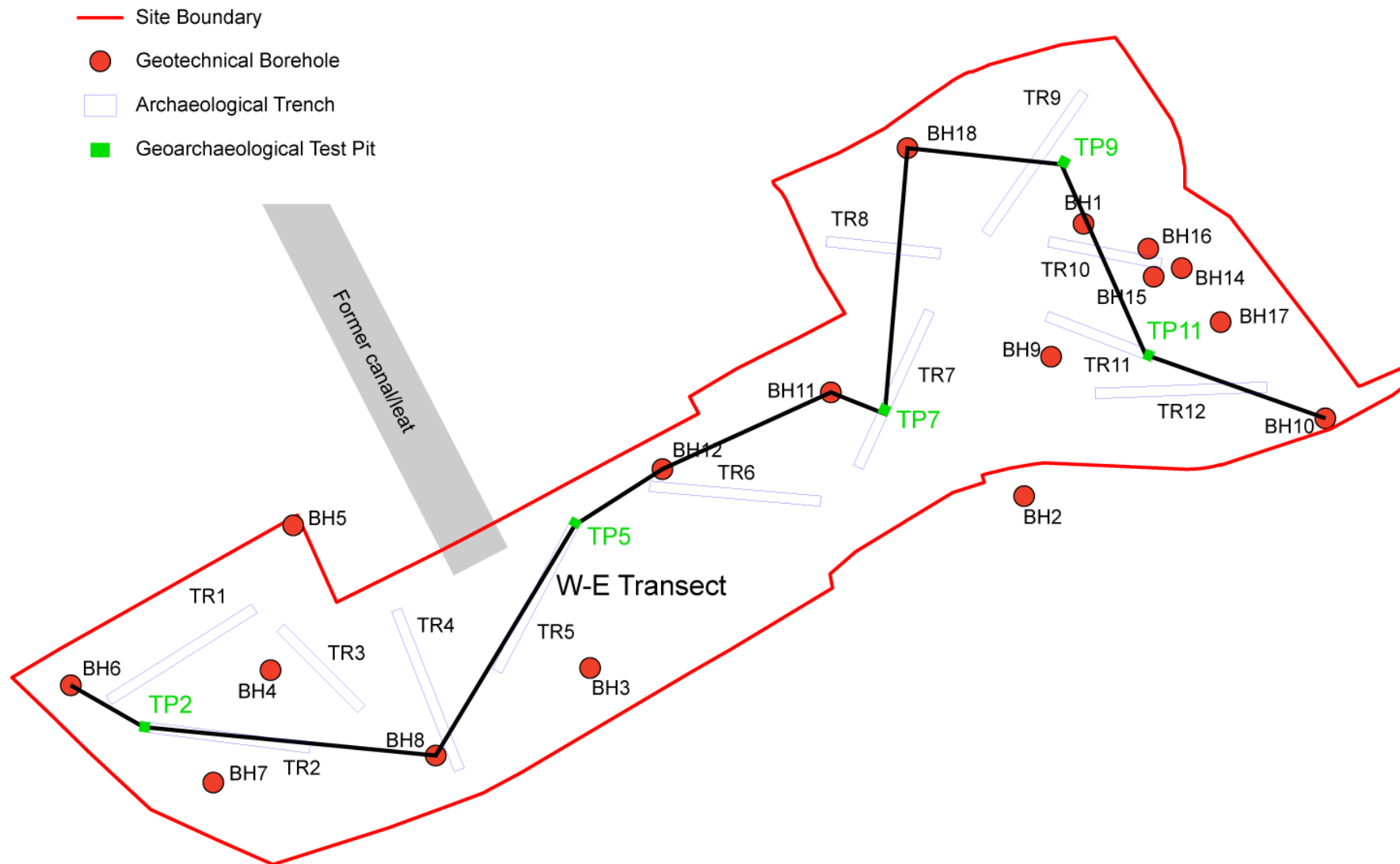


Figure 2: Location of archaeological Trenches and corresponding geoarchaeological Test Pits at the former Royal Mail Sorting Office site. Original figure provided by CgMs Consulting.

METHODS

Field investigations

A total of five Test Pits measuring approximately 2.0m x 2.0m were put down within the northern end of Trench 2 (TP2), the northern end of Trench 5 (TP5), the middle of Trench 7 (TP7), the south-easterly extension of Trench 9 (TP9) and the southern end of Trench 11 (TP11) (Figure 2). It was not possible to put a proposed test pit down within Trench 12 due to the presence of services and other obstructions; this test pit was therefore put down within Trench 11 (TP11). The Test Pits were put down using a mechanical excavator until between 0.5 and 1.0m of River Terrace Gravels had been recorded. In the TP5 the London Clay surface (underlying the Gravel) was recorded. The lithostratigraphy of the test pits was described using standard procedures for recording unconsolidated sediment and organic sediments, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts) (Tröels-Smith, 1955). The procedure involved: (1) cleaning the section (where possible) with a spatula to remove surface contaminants and examining spoil (excavated in 250mm spits) from the trench; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition; gravel (Grana glareosa; Gg), fine sand (Grana arenosa; Ga), silt (Argilla granosa; Ag) and clay (Argilla steatoides); and (4) recording the unit boundaries e.g. sharp or diffuse. Where access to the Trial Pits was not possible for health and safety reasons, the descriptions were made using a combination of visual examination of the exposed section and the resultant spoil. The results are displayed in Tables 1 to 5.

RESULTS, INTERPRETATION AND DISCUSSION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS

The results of the geoarchaeological investigations are displayed in Tables 1 to 5 and in Figure 3.

A horizon of stiff grey clay was recorded in Test Pits TP5 (between 5.1 and 5.5m OD) and TP7 (between 4.5 and 4.4m OD), representing the bedrock London Clay. This horizon was recorded in the majority of the previous geotechnical boreholes, its surface relatively uneven and lying at between 5.69 (BH3) and 3.39m OD (BH10). Elsewhere, the basal unit at the site was a horizon of sand and gravel (the Kempton Park Gravel), deposited during the Middle Devensian, within a high energy braided river system. The surface of the Gravel is recorded in the Test Pits at between 6.40 (TP5) and 5.53m OD (TP11). The new Test Pit records are generally consistent with the existing geotechnical boreholes, and demonstrate that the Gravel surface is generally lower in the eastern part of the site (see Figure 3). West of

borehole BH12, the Gravel surface is recorded at between 6.4 and 6.2m OD in Test Pits TP2 and TP5, whilst in boreholes BH3, BH4, BH5, BH7, BH8 and BH12 it is recorded at between 7.29 and 6.67m OD. The Gravel surface recorded in BH6 at 5.55m OD is directly overlain by Made Ground, and mostly likely represents a truncated surface. East of borehole BH11, the Gravel surface is recorded in Test Pits TP7, TP9 and TP11 at between 5.53 and 5.90m OD, whilst in boreholes BH1, BH2, BH9, BH10, BH11, BH14, BH15, BH16 and BH17 it is recorded at between 5.0 and 6.9m OD. The lowest Gravel surface is recorded towards the north of this eastern area, in borehole BH18 (4.45m OD). Although only recorded in one borehole, this may indicate that the Gravel surface falls northwards, towards the modern course of the River Crane.

In geotechnical borehole BH11 a complex sequence of Gravel, Peat and Alluvium was recorded overlying the London Clay between 5.9 and 3.65m OD. Geoarchaeological Test Pit TP7 was put down within *ca.* 10m of this borehole, but recorded a sequence consistent with those elsewhere, with the London Clay surface recorded at 4.4m OD and overlain by Gravel between 4.5 and 5.6m OD. In Test Pit TP9 some lenses of organic material were recorded within the Gravel, but these were limited to detrital material that formed a fine 'veneer' on the Gravel clasts.

The Gravel is overlain in all of the Test Pits and in the majority of the boreholes by a horizon of silty and in places sandy clay Alluvium. No organic horizons or Peat were recorded within the Alluvium. The thickness of the Alluvium is generally greater in the eastern area of the site, where the Gravel surface is generally lower; east of borehole BH11 it is between 0.5 and 1.0m thick, whilst west of here it is between 0.2 and 0.7m thick. In places the Made Ground directly overlies the Gravel, and Alluvium is absent.

The Made Ground across the site is generally between 1.5 and 2.5m thick. The surface of the Made Ground is noticeably lower in the new Test Pits, most likely caused by a reduction of the surface elevation of the site following demolition, and reflected in the thicknesses of Made Ground.

Historical maps dating to 1846 and 1849 show that a former canal or leat, projecting south from the River Crane, may have extended in to the western part of the site. Geoarchaeological Test Pit TP5 was put down within Trench 5 in order to examine whether any sediments or disturbance associated with this feature could be identified in this area; however, the sequence in TP5 was consistent with those elsewhere across the site and appeared to be entirely natural below the Made Ground. The Gravel surfaces recorded in this

area, including that in TP5 (6.4m OD) boreholes BH5 (6.67m OD), BH3 (7.29m OD) and BH12 (6.67m OD), are not consistent with the presence of a natural palaeochannel in this area. However, given the distribution of borehole and Test Pit records across the site, it is not possible to entirely discount the presence of sediments or disturbance associated with this feature.

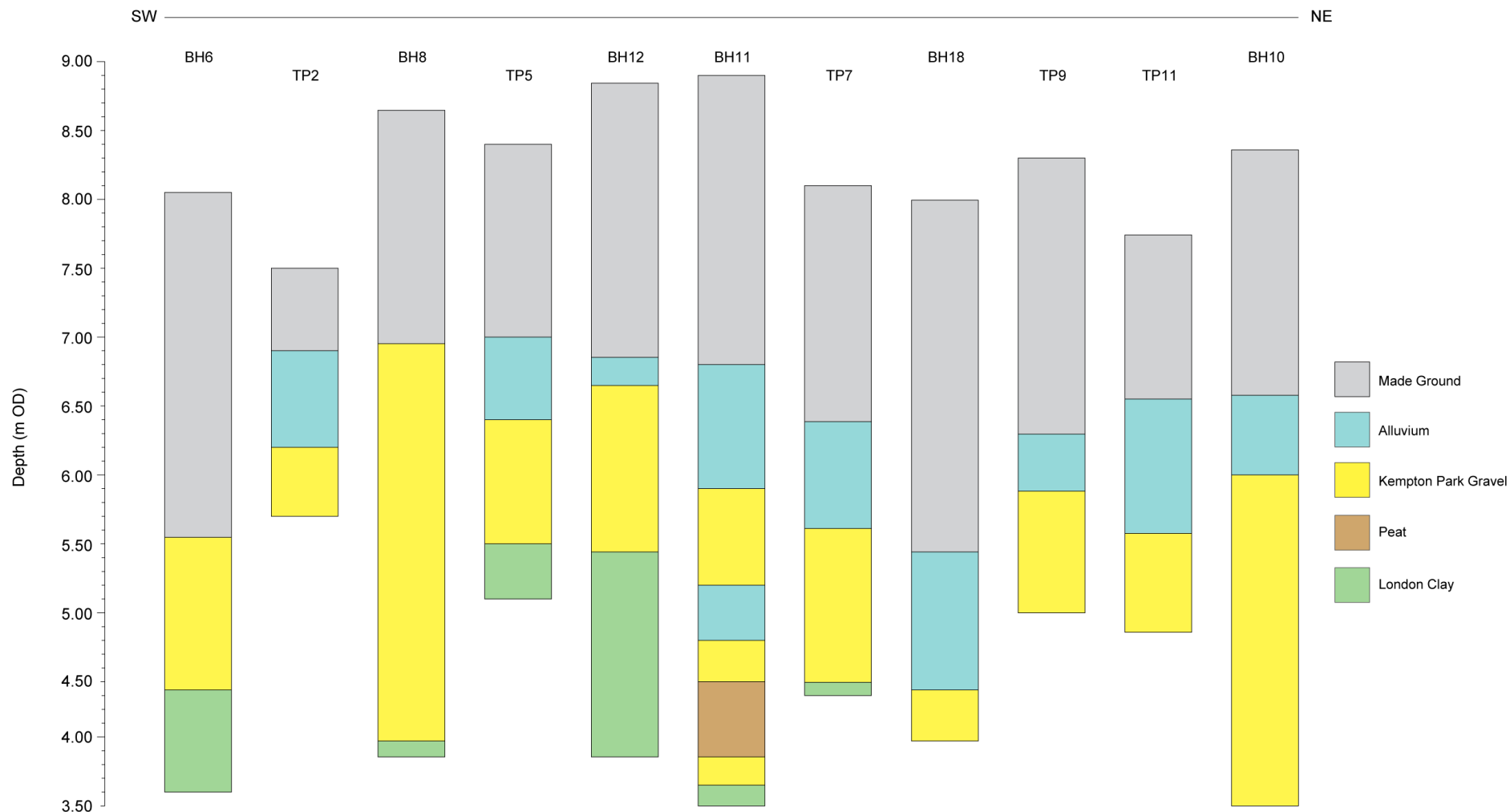


Figure 3: Southwest-northeast transect of Test Pits and selected geotechnical boreholes at the former Royal Mail Sorting Office site (NGR: TQ 154 279).

Table 1: Lithostratigraphic description of Test Pit 2, Trench 2, former Royal Mail Sorting Office site (NGR: TQ 154 279).

Depth (m bgs)	Depth (m OD)	Description
0.00 to 0.60	7.50 to 6.90	Made Ground
0.60 to 0.90	6.90 to 6.60	Ag2 Ga1 As1; dark grey blue sandy clayey silt. Diffuse contact in to:
0.90 to 1.30	6.60 to 6.20	As2 Ag2; orangey brown silt and clay. Sharp contact in to:
1.30 to 1.80	6.20 to 5.70	Gg3 Ga1 As+; grey sandy gravel with a trace of clay. Clasts sub-angular to rounded, 20-80mm diameter.

Table 2: Lithostratigraphic description of Test Pit 5, Trench 5, former Royal Mail Sorting Office site (NGR: TQ 154 279).

Depth (m bgs)	Depth (m OD)	Description
0.00 to 1.40	8.40 to 7.00	Made Ground
1.40 to 2.00	7.00 to 6.40	As3 Ag1; blue grey silty clay. Sharp contact in to:
2.00 to 2.90	6.40 to 5.50	Gg2 Ga1 As1; orangey brown clayey sandy gravel. Some more clayey lenses (As2 Gg1 Ga1). Clasts are mainly flint, sub-angular to rounded, 5-90mm diameter. Sharp contact in to:
2.90 to 3.30	5.50 to 5.10	As4 Ag+ Ga+; stiff blue grey clay with a trace of silt and sand.

Table 3: Lithostratigraphic description of Test Pit 7, Trench 7, former Royal Mail Sorting Office site (NGR: TQ 154 279).

Depth (m bgs)	Depth (m OD)	Description
0.00 to 1.70	8.10 to 6.40	Made Ground
1.70 to 2.50	6.40 to 5.60	As3 Ag1; grey brown silty clay. Sharp contact in to:
2.50 to 3.60	5.60 to 4.50	Gg3 Ga1 As+; brown sandy clay with a trace of silt. Some more clayey lenses (As2 Gg1 Ga1). Clasts are mainly flint, sub-angular to rounded, 5-90mm diameter.
3.60 to 3.70	4.50 to 4.40	As4 Ag+ Ga+; stiff blue grey clay with a trace of silt and sand.

Table 4: Lithostratigraphic description of Test Pit 9, Trench 9, former Royal Mail Sorting Office site (NGR: TQ 154 279).

Depth (m bgs)	Depth (m OD)	Description
0.00 to 2.00	8.30 to 6.30	Made Ground
2.00 to 2.40	6.30 to 5.90	As3 Ag1; blue grey silty clay. Sharp contact in to:
2.40 to 3.30	5.90 to 5.00	Gg4 Ga1 As+; brown sandy gravel with a trace of clay. Some more clayey lenses (As2 Gg1 Ga1). Some lenses of dark brown detrital organic material (Gg3 Sh1). Clasts are mainly flint, sub-angular to rounded, 5-60mm diameter.

Table 5: Lithostratigraphic description of Test Pit 11, Trench 11, former Royal Mail Sorting Office site (NGR: TQ 154 279).

Depth (m bgs)	Depth (m OD)	Description
0.00 to 1.20	7.73 to 6.53	Made Ground
1.20 to 1.60	6.53 to 6.13	As3 Ag1; grey blue silty clay. Diffuse contact in to:

1.60 to 2.20	6.13 to 5.53	Ag2 As1 Ga1; grey blue sandy clayey silt. Sharp contact in to:
2.20 to 2.40	5.53 to 5.33	Gg2 Ga1 As1 Ag+; blue grey sandy clayey gravel with a trace of silt. Clasts sub-angular to rounded, 20-100mm diameter. Diffuse contact in to:
2.40 to 2.90	5.33 to 4.83	Gg2 Ga1 As1 Ag+; orangey brown sandy clayey gravel with a trace of silt. Clasts sub-angular to rounded, 20-100mm diameter.

CONCLUSIONS AND RECOMMENDATIONS

No organic horizons (including Peat) were recorded during the geoarchaeological investigations; in the absence of these, no further geoarchaeological or environmental archaeological investigations are recommended. It is possible that the complex sequence of Peat, Gravel and Alluvium recorded in geotechnical borehole BH11 represents a very localised pre-Holocene Peat horizon; however, no sequence consistent with this was recorded in any of the Test Pits, including TP7, put down within 10m of borehole BH11, or in any of the other geotechnical boreholes. No sediments or disturbance was identified that might be associated with the former canal or leat that projects in to the western area of the site. However, given the distribution of borehole and Test Pit records across the site, it is not possible to entirely discount the presence of sediments or disturbance associated with this feature.

REFERENCES

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