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Thames View, Abingdon

REPORT ON MONITORING OF GEOTECHNICAL INVESTIGATIONS

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Thames View Industrial Estate, Abingdon

Report on the Monitoring of Geotechnical Investigations

SUMMARY

This report examines the geotechnical information from Thames View Industrial Estate (centred NGR SU 5010 9720) concerning the depth of Made Ground and the depth to terrace gravel deposits. It includes both preliminary investigations by CL Associates and a second programme of including window samples and boreholes that was partly monitored during sampling by Oxford Archaeology (OA). Information from evaluation trenching by OA both within the site and in immediately adjacent areas is also included. From this plans of the depth of recent deposits, and the total depth of deposits overlying gravel, have been prepared. The work has been carried out on behalf of Barratt-Maidenhead as background to archaeological mitigation during construction.

1 1 Introduction

- 1.1.1 There has not been any previous archaeological investigation of the proposed development site, and so there is no direct data on the survival of archaeology below ground. An initial consideration of the conditions below ground was made in the Desktop Archaeological Assessment (OA March 2003, section 6.2), in the main using data from archaeological investigations on adjacent sites. Since however the use of this part of Abingdon has varied considerably both geographically and over time, this only provides general indications of the likely geology and soil sequence, and does not provide reliable information on the local site conditions.
- 1.1.2 A preliminary geotechnical investigation of the site itself was carried out by CL Associates (CL September 2002, Report 272134), and the results of this were also considered in the Desktop Archaeological Assessment. This investigation comprised 15 window samples (Figure 1: WS101-115). The concerns of geotechnical investigations are not however the same as those of archaeological investigations, man's previous activity of whatever date tending to be lumped under 'Made Ground'. OA therefore requested that any further geotechnical investigations should also involve on-site archaeological monitoring of the retrieved soils.
- 1.1.3 CL Associates carried out a second phase of geotechnical investigation in March-April 2003. This comprised 6 boreholes (BH 201-206) and 25 window samples (Figure 1: WS207-231). The majority of the second phase investigations were monitored on site by Oxford Archaeology, although BH 201-2 and WS 207-211 had already been completed before an archaeologist was in attendance. Data logged by CL Associates was kindly supplied to OA in advance of completion of the report.

2 PURPOSE OF THE ARCHAEOLOGICAL MONITORING AND ASSESSMENT OF GEOTECHNICAL DATA

- 2.1.1 Geotechnical information from the site has been considered for information upon the character of the soil sequence in advance of any below-ground archaeological investigations, and in particular upon the depth of Made Ground, the depth at which undisturbed gravel is present, and for the presence and extent of alluvium.
- 2.1.2 2.2 The aims of the assessment as far as is practicable are:
- 2.1.3 to attempt to establish a profile of the depth of the underlying gravel terrace deposits
- 2.1.4 to establish the extent and depth of any overlying alluvial deposits
- 2.1.5 to determine whether any Holocene subsoils survive over the gravel, and if so to establish their likely extent
- 2.1.6 from this to determine the degree of truncation of the natural soil profile
- 2.1.7 to establish areas where archaeological features might be expected to survive

3 ON-SITE METHODOLOGY

- 3.1.1 An archaeologist was present on site throughout the latter part of the geotechnical investigation. Where sampling had been completed before an archaeologist arrived on site, the geotechnical field logs were inspected, and the soil residues deposited beside the sampling holes were scanned to correlate the logs with the soils themselves.
- 3.1.2 For the boreholes, OA asked the CL team to lay out the cores as they were retrieved in order on the ground, so that the soil sequence could be inspected. The method of operation of the coring rig, which simply jettisoned the cores on the ground, did not facilitate detailed recording of the soil sequence, but the observations of the experienced operators about the changing sequence were noted.
- 3.1.3 For the remaining window sample locations OA made their own records of the soil deposits that were recovered, inspected the soils for any artefactual evidence and retrieved this where present, and liaised with CL's engineer about the interpretation of the deposits.

4 LIMITATIONS OF THE GEOTECHNICAL INVESTIGATION

4.1.1 Not all of the sample locations were observed directly by OA (see sections 1.1.2 and 1.1.3 above). In some sample locations it was not possible to retrieve full sequences due to obstructions. This was the case for WS 212, 214 and 214a, 223, 226 and 230.

- 4.1.2 In addition, `no recovery' was recorded for significant parts of the sequence in many of the Window Samples. This affected over 1 m of the sequence in WS 110, 209, 213, 219 and 227, and WS 111, 207, 215, 216, 218, 220, 221, 225, 228, 229 and 231 to a lesser extent. `No recovery' occurs when a 1m sample falls out of the bottom of the casing, and is therefore compressed down into the sample below. In general, this means that the boundaries between sediments are recorded as lower than is actually the case.
- 4.1.3 Together these limitations affect the sequence in 21 of the 46 locations, or nearly half of the total. In terms of coverage, this means that much of the area covered by the Bezier building in the centre of the site has not been sampled successfully.
- 4.1.4 In addition, 14 of the remaining sequences come from the preliminary assessment, where no archaeological monitoring was undertaken. The results of this assessment must therefore be treated with caution, and must be treated as indicative only.
- 4.1.5 Borehole and window-sampling information is by its nature point information and relies upon the recognition of similar soil sequences at similar depths for the construction of a meaningful site stratigraphic history. In this case the deposits recorded, and their depths, varied considerably between even adjacent sampling locations, an observation supported by the CL engineer in charge of the site work.
- 4.1.6 Recognition of patterning in the deposit sequences is complicated by the presence of alluvium over part of the site, and of several deep features with waterlain fills, which may be difficult to distinguish from one another.

5 OTHER SOURCES OF INFORMATION

5.1.1 Information from trial trenches dug immediately adjacent to the site (unpublished evaluation carried out by Oxford Archaeological Unit in 1987) was also incorporated, to assist in providing fixed points for the depth of gravel, alluvium and Made Ground (see Figure 1). Data from other investigations was also checked for general consistency, but is not illustrated. The information retrieved from the evaluation trench dug across the east end of the site in January 2005 was also used as a reference profile (OA 2005, Figure 4).

6 RESULTS

6.1.1 The floor of the Bezier Building is level, rather than following the slope of the ground, and so is nearly 1 m above the ground level along its southern edge. This means that readings of the depth of Made Ground, and of the depth at which gravel terrace deposits were found, do not reflect the depth below general ground level. The depth of potential survival of archaeology, and of terrace gravel, below general

ground level is up to 1 m less. Very few sample locations however lie within the southern half of this building, and those in the northern half are only likely to be 0.1 m or 0.2 m different from those taken from general ground level, so no correction has been made for these readings.

- 6.1.2 The depth of Made Ground below existing ground level was plotted to obtain an overall view of the likely survival of below-ground stratigraphy and any archaeological deposits. Made Ground is used by soil scientists to cover all manmade deposits, which of course includes the fills of archaeological features. The CL engineer has stated that the deposits recorded, and their depths, varied considerably between even adjacent sampling locations, and for this reason some deposits are shown as 'probable made ground' or 'possible made ground'. This probably reflects the presence of the prehistoric defensive ditch fills, and those of the Stert stream, in parts of the site.
- 6.1.3 Judgement therefore had to be used to distinguish recent from ancient deposits. In practice, this involved a few deposits containing occasional fragments of 'brick', which could have been medieval or Roman tile, and some mixed deposits without finds. Despite the variability, added confidence was gained from the evaluation results, which confirmed the depth of Made Ground in WS 218, 220, 106 and 107, and explained the variability in WS 105.
- 6.1.4 Figure 1 shows the location of the boreholes and Window Sample holes, and gives the estimated depth of Made Ground. Since detailed levels across the site were not available when the data was supplied, and the purpose of the exercise was to establish the impact levels of the development, rather than absolute heights above O.D., the depths are given below ground level. Where the borehole or window sample was abandoned, the depth of Made Ground is given as the depth reached preceded by the > sign.
- 6.1.5 The drawing has indicated some locations where the depth of Made Ground is considerably deeper than in surrounding holes, suggesting areas of localised recent disturbance. This is likely to be the case for WS 102 and WS 104. The drawing also shows a line dividing that part of the site where Made Ground is deeper than 1.5 m from that part where it is less. This is regarded as the likely limit of impact to deposits from the reduction of the site in removing pile caps and levelling before laying the pile mat. The area of impact lies north of the line.
- 6.1.6 A buried ground surface was identified in a number of the sampling locations along the south-east part of the site (for instance WS 208, 222 and 210). This appeared to match the 19th century surface prior to development that was exposed in the evaluation trench, and is at considerable depth.
- 6.1.7 Figure 2 shows the depth at which undisturbed terrace gravels were encountered. These were plotted to obtain an overall view of the profile of the gravel terrace

underlying the site. Where gravel was not encountered within the sampling depth, the depth was recorded as the full depth of the sample preceded by a > sign to provide an indication of minimum depth. The actual depth of gravel terrace deposits in the 2005 evaluation, and in between the defensive ditches in evaluation trenches just northwest of the site, is also indicated in red.

6.1.8 This drawing is considerably more difficult to interpret than Figure 1, since a fall in the underlying level of the terrace, the truncation caused by two (or possibly three) large linear ditches, truncation due to the Stert Stream and at least one more buried stream course, any medieval or later ditches and watercourses and any recent disturbances all contribute to the present levels, and are very difficult to distinguish. Unfortunately the evaluation has shown that there are also other sizeable buried features of different dates, making the plotting of the course of the prehistoric defensive ditches very uncertain. Only at the very north edge of the site does gravel survive at a relatively shallow depth, and there appears to be a fairly steep fall-off southwards. To assist in assessing what the data is telling us, the possible line of the continuation of the northernmost prehistoric defensive ditch is shown on the drawing.

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Figure 1: Depth Of Made Ground

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Figure 2: Depth of gravel terrace deposits



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