

Geoarchaeological Assessment
Goslett Yard WC2 (TCG09)
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Introduction

Two visits were made by a MOL Archaeology geoarchaeologist to the site to examine, record and sample two sequences of sediments exposed in the evaluation trenches at Goslett Yard, London, WC2. This exercise followed a request by the site supervisor and Crossrail Archaeological Consultant. The purpose of the visit was to determine whether the deposits exposed in the trenches were soils and to evaluate their environmental potential.

The site lies on the river terraces of the Thames, which comprise gravels, overlain in places by brickearth and slope deposits. Cartographic evidence and previous archaeological investigation in the area suggests the site was open, rural land prior to urbanisation in the 17th century. The earliest archaeologically significant deposits in the site vicinity have included peaty soils, alluvial clay/silts and reworked brickearth which suggest a wet, marshy environment and agricultural activity. The brickearth is also likely to have been removed and disturbed by quarrying.

Methodology

On-site

The best-preserved area of stratigraphy exposed in each of the two trench sections (specifically contexts (137), (140) and (129)) was examined in detail and the deposit characteristics recorded. A preliminary interpretation of their mode of deposition and the environments represented was made. In order to test and enhance these on-site interpretations three monoliths and five bulk samples were taken for off-site examination of environmental remains. The monolith tins were hammered in to the cleaned section face. The OD height of the monolith was surveyed in by the on-site archaeologists. The monoliths were then located on the section drawings, photographed *in situ*, cut from the section, wrapped in cling film and will be retained in the MOL Archaeology cold store until a decision is made on the requirement for off-site analysis. The five bulk samples taken from the contexts sampled by the monolith have been processed for environmental remains.

Off-site

No work has been undertaken on the three monolith samples. All five bulk samples were processed by flotation/wet sieving using a modified Siraf flotation tank with meshes of 0.25mm and 1mm to retain the flot and residue respectively. The sample residues were dried and sorted by eye for artefacts and environmental materials. The residue sample density (RSD) of each sample was calculated and recorded. This measurement, expressed as a percentage shows the ratio of matrix (<1mm) to residue (>1mm) and allows quick comparison of the overall abundance of material, including stone recovered from the sample. The flots were air dried then scanned briefly, using a low-powered binocular

microscope, and the abundance, diversity and nature (method of preservation, specific features) of plant macrofossils and any faunal or artefactual remains were recorded on the MOLA Oracle database.

Results

Stratigraphy

Sequence One

Monolith <3> (23.05m AOD.). Bulk Samples <3> <4> and <5>

Context 129 (22.95m to 22.75m AOD) was a moderately firm, dark brown gritty silt, poorly sorted with occasional brick, clinker, oyster shell, mortar and flint gravel. This was interpreted as a post medieval layer probably formed through a mixture of dumping, soil development and bioturbation.

Context 140 (22.75m to 22.15m AOD) consisted of light to medium brown silts mixed with increasingly frequent and increasingly compact, iron stained rounded to subangular flint gravel and was very poorly sorted as a whole. The sediments of this context were considered to be the remnants of a truncated and trampled area probably as a result of quarrying activity on top of which (129) accumulated.

Context 137, although not sampled in either monolith or bulks was the river terrace gravels underlying the whole site and consisted of compact, orange, heavily iron stained sands and subrounded to subangular gravels. This context undulated across the site but lay some 0.4m below the monolith sample at approximately 22.15m AOD. The gravels are a Pleistocene deposit and form the basis to the Holocene sequence of deposits that is of interest both archaeologically and palaeo-environmentally.



Fig 1 Sequence of Monolith tin sample <3> (TCG09).

Sequence Two

Monoliths <6a> and <6b> (22.72 m AOD). Bulk Samples <7> <8> and <9>

In this area to the east of the site, two monolith tins (both sample <6>) were used to obtain a continuous sequence approximately 0.93m long from 22.72m AOD and resting on top of the river terrace gravels at 21.75m AOD.

Context (129) was described in this area as a medium grey (becoming darker and more humic with depth), slightly fine sandy silt with occasional clinker, CBM and gravel throughout. This was interpreted as a post medieval layer probably formed through a mixture of dumping, soil development and bioturbation.

Context (151) was a firm, mid dark grey/brown clay sandy silt with occasional flecks of charcoal, CBM, animal bone, oyster and gravel. It is possible this is a dumping/levelling layer.

Context (140) was a greeny grey silt with fine rootlines, moderately frequent gravel throughout with associated iron staining and fissures filled with silts from above. Interestingly the fissures in 140 could indicate a period of drying out prior to the accumulation of 129 over 140. Furthermore, the fine rootlines indicate vegetation (although probably light) did take hold on or over 140. The sediments of this context were considered to be the remnants of a truncated and trampled area probably as a result of quarrying activity



Fig 2 Sequence of Monolith tin sample <6> (TCG09).

Bulk Samples

Table 1 summarises the materials recovered from the bulk samples associated with the monoliths.

Sequence	Sample	Context	Litres	Residue	RSD	Stone	Fauna			Finds						
							Mml	Bird	M.Moll	Pot	CBM	CTP	Fe Nail	Coal	Glass	Slag
1	4	129	20	3.100	16%	###	#			#	#	#	#	#		
1	5	140	20	1.700	9%	###				#						
2	7	129	10	1.000	10%	###	#		#	#	#			#	#	
2	8	151	10	1.550	16%	###	#	#	#	#	#			#	#	
2	9	140	10	0.400	4%	###										

Table 1 Bulk sample summary

The preservation of environmental remains was universally poor. A range of finds were recovered but only in small quantities. In spite of this the recovered materials support the field interpretations of each deposit.

Context (129), samples <4> and <7> contained a small number of very small fragments of mammal bone, oyster shell, pot, CBM, clay tobacco pipe, nails, glass, coal and slag. Sample <4> was the only sample to produce a flot. This consists mostly of clinker, but also moderately abundant waterlogged seeds and occasional insect remains. Seeds include many sedge (*Carex* spp.), indicating damp conditions, and a variety of disturbed-ground species, most of them characteristic of highly nitrogenous soils. This suggests the presence of decaying organic matter. Occasional food remains were also seen, in the form of grape (*Vitis vinifera*), fig (*Ficus carica*) and blackberry (*Rubus* cf. *fruticosus*) seeds. The range and size of these materials are consistent with the field interpretation for this deposit - a deposit formed through a mixture of dumping, soil development and bioturbation.

Context (151), sample <8> is very similar to (129) in terms of what was recovered, the only addition was small fragment of bird bone. This again supports the field interpretation.

Context (140), samples <5> and <9> were largely sterile and contained only stone but for a couple of very small abraded fragments of CBM in sample <5>. This is not unexpected from a sample of brickearth.

Discussion of potential

The results from the bulk samples confirms the geoarchaeological interpretation, that the deposits represent a rudimentary soil layer developing over quarried ground prior to the construction activity in the 17th Century.

Though little survived in the bulks, more detailed information about the nature of the soil accumulation on the site and the historic activities associated with it might be obtained by

soil micromorphology and pollen analysis. If the project budget allows a clearer idea of whether pollen is preserved in the deposits could be obtained by limited pollen assessment, which could follow closer analysis of the monolith samples. If preserved, pollen would contribute to our understanding of the post medieval environment of the site during the period prior to development. Perhaps, for example it was cultivated for a short time rather than just waste ground. If pollen is preserved, then soil micromorphology would be a useful additional technique, able to enhance the information obtained.

Significance

A better understanding of the natural stratigraphy and vegetation of the site is likely to have local significance, as it would help to reconstruct the past landscape characteristics of the area prior to development of the 17th Century.

Recommendations

It is recommended that closer examination of the monoliths is undertaken. Following this the monoliths obtained from the site should be examined and sub-sampled (4x) for pollen assessment. Monoliths <6a> and <6b> is the better sample for further work as it provides a longer sequence. If pollen survives, then a proposal for analysis could be put forward, combining pollen with soil micromorphology and an interpretation of the sediments obtained from their examination on site and a detailed off-site examination of the monoliths.

The objectives of this work would be to reconstruct the changing environment of the site in the past trying in particular to ascertain the nature of the vegetation and sedimentary processes acting on the site.

The cost of pollen assessment would be:

- 1 day geoarchaeologist time to prepare sub-samples and liaise with specialist and prepare proposal for analysis
- £ pollen specialist time

Assessment of Finds Bulk Samples

Introduction

Two bulk samples were taken from deposits thought to be associated with industrial activity.

Results

Table two summarises the materials recovered from the bulk samples.

Sample	Context	Litres	Residue	RSD	Stone	Finds		
						Slag/Clinker	CBM	Leather
1	34	10	10.000	100%		#####		
2	46	20	0.400	2%			#	#

Context 34, sample <1> was taken from a large deposit of dry clinker/slag. This sample has not been processed, sorted or assessed. It is recommended that sample <1> be assessed by the relevant specialist in order to ascertain what type process the material derived.

Context 46, sample <2> was processed by flotation/wet sieving. The samples produced no flot. The residue contained no stone, a couple of pieces of CBM and several fragments of a leather shoe. The sample provided little evidence to support the field interpretation that this deposit derived from either a furnace fill or fire pit.