

Evaluation of the plant remains in samples from Crossrail, Moorgate Shaft (XSP10)

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ENV/BOT/ASS/13/11

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Four environmental bulk samples were taken from two similar sequences in Trenches 4 and 5. Samples [10]{10} (Tr5) and its equivalent [14]{9} (Tr4) are thought to come from Roman dumping/levelling or proto-marsh deposits, while samples [9]{5} (Tr5) and [13]{6} represent the formation of Moorfields Marsh in the late Roman or medieval periods. The samples were processed by flotation, and the flots assessed to determine the presence and nature of plant remains and any other biological material present.

No flot was generated from sample {9}, but that from {10}, though small, included a reasonably large and diverse assemblage of waterlogged plant remains. The majority of these were seeds from aquatic and wetland plants such as crowfoots (*Ranunculus* subgen. *Batrachium*), pondweed (*Potamogeton* sp.), celery-leaved crowfoot (*Ranunculus sceleratus*) and sedges (*Carex* spp.), suggesting that the ground was already wet, with frequent standing water, at this time. A number of plants of dryer disturbed ground were also represented, including fumitory (*Fumaria* sp.), buttercups (*Ranunculus acris/repens/bulbosus*), henbane (*Hyoscyamus niger*), and elder (*Sambucus nigra*). Occasional fig (*Ficus carica*) seeds, charcoal fragments and a charred oat (*Avena* sp.) suggest an element of domestic dumping.

Samples [9]{5} and [13]{6} contained very similar assemblages, dominated by freshwater mollusc shells and seeds of aquatic and wetland plants, with plant epidermal tissue, probably from roots or rhizomes and monocot leaves. Seeds of golden dock (*Rumex maritimus*) and crowfoots (*Ranunculus* subgen. *Batrachium*) were particularly numerous, and those of dry ground plants relatively rare, suggesting that the area was almost universally wet and marshy by this time, probably with long-standing pools of water. Both these samples contained ostracods as well as mollusc shells, and all three included occasional fragments of insect exoskeleton.

Further study of the large plant and invertebrate assemblages from samples {5}, {6} and {10} would provide more detailed information on the development of Moorfields Marsh, and help to reconstruct the environmental conditions prevailing at different stages of its development.

In addition to the plant remains from all three samples, the molluscs and insects from samples {5} and {6} should be studied, and the findings integrated with the botanical report.

Estimate for botanical analysis

Scanning, id & recording of plants from 3 rich waterlogged samples:	2.5 days
Data entry, production & editing of tables:	1.0 days
Analysis of results, research and production of archive report:	3.0 days

Total: 7.0 days

Insect remains

Retained soil from samples {5} and {6} should be processed and submitted to an insect specialist for identification of the remains. Specialist rates vary, but assessment is likely to cost c. £***-*** and subsequent analysis between £** and £*** per sample, depending on the level of detail required. Additional time will be required for MoLA to liaise with the specialist, package samples, and provide relevant information. Paraffin flotation by MoLA processors and/or retrieval of unprocessed soil from Camberwell will also be necessary.

Retrieval of 2 samples from Camberwell, paraffin flotation, packaging and dispatch:

1.0 day (@ JA rate)

Liaison with specialist:

0.25 day (@specialist rate)

Insect specialist time:

initially c. £***, then to be negotiated

Molluscs

To be evaluated by faunal specialist.

Table 1: Summary of botanical assessment data

A: abundance, D: diversity (1 = occasional, 2 = moderate, 3 = abundant)

							chd grain	chd wood	wlg seed	wlg misc	
context	sample	BI	dating	proc vol(l)	flot vol(ml)	proc	A D	A D	A D	A D	comments
9	5			10	100	F			3 3	2 1	WET. AQUATIC/WETLAND PLANTS + MANY MOLLUSCS
9	5					W				2 1	
10	10			20	20	F	1 1	2 1	3 3	1 1	DRY. WET AND DRY GRND PLANTS, OCC FOODS
13	6			10	500	F			3 3	3 1	WET. AQUATIC/WETLAND PLANTS, MOLLUSCS
13	6					W				2 1	