



C263 ARCHAEOLOGY LATE EAST
Fieldwork Report
Archaeological Watching Brief on Utility
Diversions at
Victoria Dock Portal (XSX11)

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Non technical summary

This report presents the results of archaeological watching briefs carried out by the Museum of London Archaeology (MOLA) on the Victoria Dock Portal worksite, in the London Borough of Newham. This report was commissioned from MOLA by Crossrail Ltd. This work is being undertaken as part of a wider programme of assessment to quantify the archaeological implications of railway development proposals along the Crossrail route.

The worksite at the Victoria Dock Portal site (part of Crossrail contract C263 Archaeology Late East) consists of utility diversions centred around Victoria Dock Road and Seagull Lane.

The fieldwork revealed no archaeological remains within the shallow utility diversion trenches. No archaeological remains, structures or associated features indicative of human activity were observed.

Natural terrace gravels were overlain by thick peat deposits belonging to prehistoric marginal marshland. These deposits were sealed by a horizon of alluvial minerogenic clay belonging to intertidal mud flats and salt marsh, which gradually formed between the late iron age and medieval period to early post-medieval period. However, all deposits were archaeologically sterile. The entire sequence was sealed by modern made ground and the concrete and tarmac of the current road and pavement surfaces. The results of this watching brief have not provided information that would be useful for locating or, undertaking the forthcoming evaluation trenches.

These remains are interpreted as having limited rarity and diversity. They are therefore assessed as being of low importance.



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1 Introduction

Crossrail is a new cross London rail link project which will provide transport routes in the south east and across London. The line will provide a range of both new and improved rail journeys across London and its immediate surroundings. The proposed development will include the construction of seven stations within central London which will have interchange with other public transport modes including the London Underground, National Rail and the London Bus service; the development will also include the renewal and/or upgrade of existing stations outside central London. The route itself will link Maidenhead and Heathrow in the west with Shenfield in the north-east and Abbey Wood in the south-east. As part of the south-east spur works a portal at Victoria Dock will be required. The DLR will be realigned to accommodate the portal.

The Crossrail mitigation response to archaeology is described in the Crossrail Generic WSI (Crossrail 2009) and the detailed desk based assessment (DDBA; Crossrail 2008), and can be summarised as follows:

- In the event that intact and important archaeological remains are identified at Crossrail worksites through this process, it may be preferable, where practicable, to preserve these where they are found (i.e. preservation in situ).
- However, because of the nature of major works projects such as Crossrail, experience of other similar projects suggests that preservation by record is usually the most appropriate method of dealing with archaeological finds.
- Following an extensive Environmental Impact Assessment (EIA) supporting the Crossrail Bill, and the production of site-specific DDBAs, appropriate mitigation measures were scoped and specified in detail in individual project designs (site-specific WSIs – Written Schemes of Investigation) which were prepared in accordance with the principles set out in the Generic WSI, and developed in consultation with the relevant statutory authorities.
- Archaeological information that is gained from fieldwork will be followed by analysis and publication of the results and will be transferred to an approved public receiving body

This fieldwork report describes the results of a general watching brief on utility diversions around the Victoria Dock Portal worksite monitored by Museum of London Archaeology (MOLA) under Crossrail contract C263 Archaeology Central.

The centre of the Victoria Dock Portal site is situated on National Grid reference (NGR) 540460 180910. It lies approximately 100m east of Royal Victoria DLR station, adjacent to Victoria Dock Road, in the London Borough of Newham (Fig 1). The areas of archaeological investigation are located between Ordnance Survey National Grid References 4021 8089 and 4067 8094.



All levels in this document are quoted in metres Above Tunnel Datum (m ATD). To convert Tunnel Datum to Ordnance Datum subtract 100m, i.e. 1m OD = 101m ATD.

All fieldwork was conducted between 04/07/11 and 16/12/11. It was supervised by MOLA Supervisors Matt Ginnever, Rachel English, Greg Caban and Robert Hartle, and included the following activities:

Task	FDC Notification	Principal Contractor	Programme
• General Watching Brief VDP (Sewer and EDF diversions on Seagull Lane)	N/A	C233 J Murphy & Sons	04/07/11 and 16/12/11
• General Watching Brief VDP (Sewer, water, gas, EDF and ICT diversions on Victoria Dock Road)	N/A	C233 J Murphy & Sons	04/07/11 and 16/12/11

Table 1 Archaeological Investigations

The event code (site code) is **XSX11**.



2 Planning background

The legislative and planning framework in which all archaeological work took place was summarised in the Site Specific Written Scheme of Investigation (SS-WSI): *C154 – Victoria Dock Portal Written Scheme of Investigation Victoria Dock Portal and DLR Realignment*, Doc. No C154-HYD-T1-JLT-CR144_PT003-00001, Version 8.0, May 2011 (Crossrail 2011a); a brief summary is included here:

The overall framework within which archaeological work will be undertaken is set out in the Environmental Minimum Requirements (EMR) for Crossrail (<http://www.crossrail.co.uk/therailway/getting-approval/parliamentary-bill/environmental-minimum-requirements-includingcrossrail-construction-code>). The requirements being progressed follow the principles of Planning Policy Guidance Note 16 on archaeology and planning (1990). Accordingly the nominated undertaker or any contractors will be required to implement certain control measures in relation to archaeology before construction work begins.

Schedules 9, 10 and 15 of the Crossrail Bill (2005) concern matters relating to archaeology and the built heritage and allows the dis-application by Crossrail of various planning and legislative provisions including those related to listed building status, conservation areas and scheduled ancient monuments (Schedule 9). Schedule 10 allows certain rights of entry to English Heritage given that Schedule 9 effectively dis-applied their existing rights to the Crossrail project, and Schedule 15 allows Crossrail to bypass any ecclesiastical or other existing legislation relating to burial grounds.

Notwithstanding these dis-applications, it is intended that agreements setting out the detail of the works and requiring relevant consultations and approvals of detail and of mitigation arrangements will be entered into by the nominated undertaker with the relevant local planning authorities and English Heritage in relation to listed buildings and with the Department of Culture, Media and Sport (DCMS) and English Heritage in relation to Scheduled Ancient Monuments (SAMs).



3 Origin and scope of the report

This report has been commissioned from Museum of London Archaeology (MOLA) by Crossrail Ltd. The report has been prepared within the terms of the relevant standard specified by the Institute for Archaeologists (IFA, 2001). It considers the significance of the fieldwork results (in local, regional or national terms) and makes appropriate recommendations for any further action, commensurate with the results.

This report will be made available from The London Archaeological Archive and Research Centre (LAARC) in due course.



4 Previous work relevant to the archaeology of the site

The primary previous Crossrail studies are as follows:

- A Crossrail **Generic WSI Archaeology Generic Written Scheme of Investigation** Doc No. CR-PN-LWS-EN-SY-00009, 2009.
- A Crossrail **Site-specific Written Scheme of Investigation (SS-WSI): C154 – Victoria Dock Portal Written Scheme of Investigation Victoria Dock Portal and DLR Realignment** Doc. No: C154-HYD-T1-JLT-CR144_PT003-00001, Revision 8.0, 16/05/11.
- An **Archaeological Method Statement: MOLA, C263 ARCHAEOLOGY LATE EAST Method Statement Watching Briefs, Non Listed Building recording and Geoarchaeological Borehole Survey Victoria Dock Portal and North Woolwich Portal** Doc. No: C263-MLA-X-RGN-CRG07-50003, Version 3.1, 12/07/11.
- A Crossrail **Geoarchaeological Survey: Late East Section Project, Geoarchaeological Deposit Model (Revised), Victoria Dock Portal and Custom House Station**, Revision 2.0, 26/11/11.

5 Geology and topography of site

The geological and topographical setting for Victoria Dock Portal and North Woolwich Portal was covered in detail in the SS-WSI – *Victoria Dock Portal and DLR Realignment*, Crossrail, May 2011, Document No C154-HYD-T1-JLT-CR144_PT003–00001 (Crossrail 2011a). This information is summarised below.

The sites lies within the Holocene alluvial floodplain of the Thames. The Tertiary London Clay deposits are overlain by Pleistocene sands and gravels deposited during the closing stages of the last glacial episode between 18,000 to 10,000 years ago. During this time the Thames existed as a wide extensive braidplain, consisting of elevated gravel bars separated by multiple low lying channel threads. As the climate ameliorated at the beginning of the Holocene, c 10,000 years ago, the river system contracted to the lower lying channel threads, leaving the surface of the elevated gravel bars as dry land. This gravel surface topography created the 'Early Holocene' template that influenced later sedimentation and areas of dryland occupation from the Mesolithic onwards.

From the Late Mesolithic/Early Neolithic channel capacity exceeded the discharge rate, resulting in many former channel threads of the braided river becoming abandoned and infilling with peat and organic sediment. An overall increase in river levels, due to ponding back and relative sea level rise further down the estuary, caused the waterlogging of previously dry terrestrial land surfaces across the elevated gravel surface topography. The impeded drainage gave rise to the extensive peat beds present within the Thames alluvial floodplain. The peats formed within semi terrestrial alder carr floodplain woodland, and formed an important resource to the prehistoric populations.

From the Early Iron Age, the increase in river levels outstripped the rate of peat formation. The alder carr woodlands were inundated by intertidal muds and salt marsh environments, which is represented in the depositional record by a transition from peats and organic deposits to minerogenic silts and clays. This tidal inundation continued into the medieval period, gradually raising and levelling off the surface of the floodplain. The raised surface of the floodplain in conjunction with the construction of drainage ditches and bankside revetments protected the floodplain from regular tidal inundation. The intertidal environments consequently transformed from salt marsh and mud flats to floodplain accretionary soils.

Geoarchaeological deposit models were undertaken for the site to characterise the gravel topography and the overlying floodplain sequences (Crossrail 2011b). The models identified a number of landscape zones (LZs) representative of different depositional sequences, landforms and possible chronology (Fig 2). Those within the site are summarised below:

- LZ2 defining a channel area south of Seagull Lane, consisting of minerogenic silts and clays with no evidence of semi-terrestrial peat formation
- LZ3 defines a number of possible gravel islands in the vicinity of Victoria Dock Road, with the potential for dry land occupation from the Mesolithic to early Neolithic period. One such island lies within the site on the extended



alignment of Bridgland Road. Another lies c 50m to the west of the site and another immediately to the south east of the site.

- LZ4 consists of a thick sequence of peats overlain by intertidal muds. Possible channels of a Mesolithic date were identified at the base of the sequence. This LZ covers the majority of the site.

The alluvial sequence was found to extend to a maximum of 4.50m below ground level. The surface of the modern made ground lies between 103.00m ATD (Seagull Lane) to 101.39m ATD (Victoria Dock Road).

5.1 Archaeological and Historical Background

The archaeological potential of the Victoria Dock Portal site was covered in detail in the SS-WSI – *Victoria Dock Portal and DLR Realignment*, Crossrail, May 2011, Document No C154-HYD-T1-JLT-CR144_PT003–00001, Revision 8.0 (Crossrail 2011a).

The alluvial sequence across all areas of the site has a high potential for prehistoric palaeoenvironmental evidence, such as molluscs, insects, pollen and plant macro fossils, especially within the deeper sediments across LZ2 and LZ4. The deeper channels within LZ2 may contain prehistoric artefactual evidence of river exploitation such as fish traps, jetties and boats. The gravel islands of LZ3 could preserve evidence of dry land activity of a Mesolithic to Early Neolithic date. Such evidence may take the form of lithic and bone scatters representing tool manufacture and a range of subsistence activities. The activity horizons could be expected to occur on the surface of the floodplain gravels or within ephemeral soils that subsequently developed above it. The surface elevation of these gravel islands is between 98m and 99m ATD. Negative prehistoric features such as pits or ephemeral structural remains could be found cutting into the Pleistocene gravels. The peat of the marginal marshlands within LZ4 has the potential to preserve timber structures such as trackways or jetties of a Neolithic to Bronze Age date, constructed to access and traverse the wetland landscape. Other organic features such as weirs, fishtraps, revetments and boats may also occur.

By the Roman period peat formation across the site had ceased and the landscape had transformed to an estuarine environment dominated by the formation of intertidal mud flats and salt marsh environments. However, a sea level regression event during the Roman period may have resulted in areas of this estuarine landscape becoming suitably dry enough for occupation to occur. The upper alluvial deposits could therefore contain evidence of semi-terrestrial minerogenic soils.

During the early medieval period a rise in river levels returned the landscape to estuarine marshland. During the later medieval period the land became usable again through the construction of drainage channels and revetments to protect the floodplain surface from regular tidal inundation. It is likely that during this time accretionary floodplain grassland soils developed across the area, only seasonally inundated by high tides and major flood events. These grassland floodplains were most likely used as pasture. The medieval manor of Sudbury may have been located towards the east of the site. The ditches of field systems and land boundaries associated with this manor could occur within the upper part of the alluvial sequence.



Land reclamation continued into the 19th-century, until in 1847 the North Woolwich Railway line was constructed across the undeveloped marshland. The area rapidly developed then onwards with the construction of the Royal Victoria Docks in 1850 to 1855. Residential areas and structures associated with the industrial and railway usage of the area developed throughout the latter part of 19th-century. Evidence of this industrial heritage could occur within the upper made ground deposits.

6 Research objectives and aims

6.1 Objectives of the fieldwork

The overall objectives of the various watching briefs was to preserve by record any surviving archaeological and/or palaeoenvironmental remains that would be impacted upon by the enabling works.

Specifically, the archaeological investigations had the potential to recover:

- Peat and alluvial deposits preserving a wide range of proxy palaeoenvironmental indicators (i.e. pollen, diatoms, plant macro fossils) that can be utilised to reconstruct past landscape, palaeoecology, hydrology, geomorphology and past landforms.
- Prehistoric structural timber remains such as trackways, fish traps and revetments possibly occurring within the thick peat deposits
- Mesolithic to Neolithic dryland activity horizons above gravel high points, consisting of ephemeral scatters of animal bone and lithic material.
- Prehistoric negative features such as pits and postholes cutting through the Pleistocene floodplain gravels and overlying terrestrial palaeosols.
- Evidence of floodplain stabilisation and soil formation of a Roman to Medieval date within the upper minerogenic alluvium, and associated archaeology consisting of pits, ditches etc.
- Post-medieval structural remains and features associated with the industrial heritage of the area, with particular reference to features associated with the docks and the former North Woolwich Railway. Such material may be encountered within the made ground.

6.2 Research Aims

The original aims and objectives were listed in the Victoria Dock Portal WSI (Crossrail 2011a). The following specific research aims for the works at Victoria Dock Portal were identified:

- What is the development of the local landscape, topography and environment of the Thames floodplain? Can buried peat deposits be identified? If they can be dated what activity is contained within them, and how does this help to refine knowledge of prehistoric activity, occupation and settlement in the marginal wetland habitats?
- Is there any evidence for Mesolithic activity at the base of the alluvium/surface of the gravels? Is there any evidence of Mesolithic activity on the higher gravel areas of LZ3? If so, what form does this activity take, e.g. fishing, hunting, flint working etc?
- Is there any evidence for later prehistoric activity or occupation? What is the nature of activity in the marginal marshlands of LZ4? Is there evidence of prehistoric water management or subsistence fishing? What is the nature of



activity on the higher grounds of LZ3? Is there evidence of semi-permanent occupation?

- Is there any evidence for Roman activity, in particular for water management, flood defences and/or fishing?
- What can be learned about the process of land reclamation and management of the area from the medieval period until the construction of the docks?
- What can be learned about the development of the docks during the recent historic period? Can details about London's growth as a 'world city' and the contribution of the Docks to this economic growth be further elucidated?
- Are there any surviving remains of the Royal Victoria and Albert Docks Cut, and the channels that fed into it? If so, what can be learned about the methods, materials and techniques employed in its construction?

Relevant regional research aims

The site had potential to address several general research aims identified in the regional research agenda: 'A Research Framework for London Archaeology' — Museum of London, 2002. The specific regional research themes are outlined below (page numbers are in brackets):

- Understanding the significance of geomorphology, ecology, ecosystems and climate, hydrology, and vegetational and faunal development, on human lives (79);
- Understanding London's hydrology, river systems and tributaries particularly the role of the Thames (as boundary, communication route, resource, ritual focus etc) in shaping London's history, and the relationships between rivers and floodplains (79);
- Understanding the relationship between landscape, river and settlement, and the influences of the Thames in particular on communications and social interaction (79);
- Understanding the origins of the prehistoric metalwork sequence from the Thames, and examining the links between the metalwork hoards deposited at the headwaters of river tributaries and other activities (79);
- Studying the correlation between sites associated with watercourses and meander bends, so as to understand the origin of settlements (80);
- Understanding the relationship between the Bronze Age wooden trackways and the settlements to which they presumably led, and what the trackways represent in terms of woodcraft and woodland management (82);
- Understanding the development of London's Docklands and Waterways (82);
- Examining breeding programmes and wildlife management, and marine and riverine exploitation, to understand the strategies used, their success or otherwise, and their consequences (83);
- Understanding the nature and meaning of the deposition of metalwork in the Thames and at the headwaters of river tributaries (86); and



- The Mesolithic to Neolithic transition: understanding the significance of horticultural experimentation at this time, and the transition from hunter-gatherers to farmers (87).



7 Methodology of site-based and off-site work

All archaeological excavation and recording during the evaluation was carried out in accordance with:

- A Crossrail **Generic WSI** Doc. No: 14022008-44ES-P2Z1.
- **Site-specific Written Scheme of Investigation (SS-WSI):** *C154 – Victoria Dock Portal Written Scheme of Investigation Victoria Dock Portal and DLR Realignment* Doc. No: C154-HYD-T1-JLT-CR144_PT003-00001, Version 8.0, 16/05/11.
- An **Archaeological Method Statement:** *MOLA, C263 ARCHAEOLOGY LATE EAST Method Statement Watching Briefs, Non Listed Building recording and Geoarchaeological Borehole Survey Victoria Dock Portal and North Woolwich Portal* Doc. No: C263-MLA-X-RGN-CRG07-50003, Version 3.1, 12/07/11.
- Museum of London *Archaeological Site Manual* (MoL 1994)
- Corporation of London Department of Planning and Transportation, 2004 *Planning Advice Note 3: Archaeology in the City of London, Archaeology Guidance*

The site finds and records can be found under the site code XSX11 in the MOLA archive. They will be stored there pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail scheme.

7.1 General watching Brief methodology

This General Watching Brief consisted of a basic monitoring presence to observe the works carried out either by the Principal Contractor or their sub-contractor without constraint on their working methods (Crossrail 2009 Archaeology Specification for Evaluation & Mitigation (including Watching Brief) CR-PN-LWS-EN-SP-0001, version 3). This included making a basic record of notes, measurements, drawings and photographs consistent with an observation role; eg depth, character, date and survival/truncation of deposit sequence, height of natural geology. Monitoring and recording during the general watching brief was made by observation from ground level. Generally, trenches were not entered due to absence of proper access or shoring at the time of the MOLA visit, when trenches were in the process of being excavated. If a closer inspection of the deposits had been needed and access required, the MOLA staff would have arranged entry via agreement with the Principal Contractor or their sub-contractor (providing that there was proper access and that it was safe to do).

The watching brief occasionally required recording of natural floodplain deposits. Where possible, profiles through the alluvium were examined in section. If trench sections were not visible, the alluvial deposits were recorded by examining spoil brought up from the excavation by machine bucket. Depths of the sequences were recorded by measuring down from the side of the excavation, where safe to do so.

Generally monitoring was undertaken when areas or trenches have been dug down to the level of potential archaeological interest. For this reason, a flexible approach



was taken and kept under review. The monitoring presence alternated between full and part-time depending upon the Principal Contractor's programme (eg the nature and intensity of ground works) and the archaeological results. For example, any areas where the Principal Contractor's works prove to be of insufficient depth to affect significant archaeological deposits were scoped out of the Watching Brief. The MOLA Senior Archaeologist undertaking the monitoring made an appraisal inspection during the Principal Contractor's initial breaking out, removal of overburden etc. in order to determine at what depth the relevant deposits (if present) occurred.

The MOLA monitoring archaeologist maintained regular contact with a nominated member of the Principal Contractor's team on site regarding the overall work programme and progress, including any changes to the proposed depths of excavation. The frequency of visits was adjusted as necessary as work progresses to take into account areas where it can be shown that existing disturbance had already removed archaeological deposits.

If potentially significant (but localised) remains had been exposed, such that they could not be recorded adequately under basic monitoring, then the status of the fieldwork event would have been reviewed by Project Archaeologist and could have been redefined as a Targeted Watching Brief. This redefinition, if authorised by the Project Archaeologist, would have permitted additional resources in terms of staff and attendance to allow for more intensive recording.

Within the Victoria Dock Portal site the majority of the C233 works involved the diversion of the existing services along Victoria Dock Road into a multi utility trench. The diversions along Victoria Dock Portal which required a watching brief attendance are outlined below:

- Diversion of 225mm and 1400mm sewer with associated manhole construction on Victoria Dock Road; open cut trenches to a depth of c 2.00 to 4.50m.
- Diversion of 180mm and 450mm water main on Victoria Dock Road; open cut trenches to a depth of c 1.00 to 1.50m.
- Diversion of telecoms and electrics (EDF and ICT) on Victoria Dock Road; open cut trenches to a depth of c 1.00m.
- Diversion of 600mm gas main on Victoria Dock Road; open cut trenches to a depth c 1.0 to 2.0m.

In addition, diversions were carried out to the south in the area of Seagull Lane, a route which ran adjacent to the present DLR line, and included the following:

- Diversion of 225mm diameter 5m deep sewer on Seagull Lane with the construction of drive and reception pits for microtunneling and associated manholes; open cut trenches up to c 5m in depth.
- Diversion of electrics (EDF) on Seagull Lane; open cut trenches c 1.00m deep.

Previous geotechnical investigations indicated that the modern made ground across the whole site measured between c 1.00 to 2.00m in thickness. Therefore, all the excavations for the utility diversions were likely to impact on the underlying minerogenic part of the alluvial stratigraphy.

Archaeological monitoring of the excavation of drive and reception pits along Seagull Lane was restricted by the excavation method. Firstly, concrete rings were used as shoring and were driven down as the excavation continued (see Photo 8).



Unfortunately, this made observation of the sections impossible. In addition, the interior of the pits needed to be artificially flooded during excavation due to worries about ground pressures (see Photo 9). This also made observation of *in situ* deposits at the base of the trench impossible. As a result deposits could not be observed *in situ* and spoil was inspected once it was removed by machine. Depths had to be estimated by the depth of the machine arm relative to the top of the trench, as it was not possible to take accurate levels by measuring down from the top of the trench due to the flooded nature of the pits. Given these extreme restrictions, archaeological monitoring of these works was no longer considered viable or valuable and abandoned during work on SL2 (see 8.2).

8 Results and observations

For locations of the watching briefs see Fig 1.

8.1 Victoria Dock Road



Photo1 EDF/Thames Water Diversion Trench, with another modern service trench running along the centre, looking north-west.

EDF/Thames Water Diversion Trench	
Location	East to west along the north side of the Victoria Dock Road carriageway
Dimensions	Approx 200m long x 0.95m wide x 1.40m deep
London Survey grid coordinates	90548.68 35397.87 90770.26 35418.29
OS National grid coordinates	540219 180894 (western end) 540440 180920 (eastern end)
Modern Ground Level (adjacent to pit)	101.46m ATD (west) and 101.42m ATD (east)
Modern subsurface deposits	Tarmac over concrete up to 0.70m bGL (below ground level)

Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Base of trench at 100.06m ATD
Natural geology observed (truncated/not truncated ?)	Not reached
Extent of modern truncation	c 0.40m to 0.70m
Deposits	Dating Evidence, Finds, and Samples
Blue-grey minerogenic alluvial clay [1]. Between 101.06m and 100.06m ATD (0.40m and 1.40m bGL).	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Photo 2 EDF/Thames Water Diversion Trench, minerogenic alluvial clay below modern deposits in section, looking north.

Gas Main (600mm) Diversion Trench	
Location	East to west along the north side of the Victoria Dock Road carriageway, between the junctions of Munday Road and Freemasons Road
Dimensions	Approx. 400m long (E-W) x 2.00m wide (N-S) x 1.90 to 2.00m deep



London Survey grid coordinates	90521.74 35400.55 91008.82 35437.29
OS National grid coordinates	540192 180896 (western end) 540678 180945 (eastern end)
Modern Ground Level (adjacent to pit)	101.42m ATD (west) and 101.53m ATD (east)
Modern subsurface deposits	Modern made ground between 0.8m and 0.7m bGL, overlain by tarmac over concrete 0.40 to 0.80m thick
Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Base of trench at 99.42m ATD
Natural geology observed (truncated/not truncated ?)	Not reached
Extent of modern truncation	0.40 to 0.60m deep
Deposits	Dating Evidence, Finds, and Samples
Blue-grey minerogenic alluvial clay [1]. Between 100.62m and 99.42m ATD (base of trench)(0.80m and 2.00m bGL).	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Photo 3 *Eastern end of the gas main diversion trench, looking west.*



Photo 4 *Gas main diversion trench, south-facing section, looking north-west.*



Sewer/Foul Water Drainage Diversion Pit	
Location	In the carriageway of Victoria Dock Road, to the south of its junction with Bridgeland Road
Dimensions	5.00m square x 4.50m deep
London Survey grid coordinates	90713.26 35418.73
OS National grid coordinates	540383 180919
Modern Ground Level (adjacent to pit)	101.39m ATD
Modern subsurface deposits	Modern made ground between 0.8m and 0.7m bGL, overlain by tarmac over concrete 0.40 to 0.80m thick
Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Base of trench at 96.89m ATD
Natural geology observed (truncated/not truncated ?)	Not reached
Extent of modern truncation	0.80m
Deposits	Dating Evidence, Finds, and Samples
Blue-grey minerogenic alluvial clay [1]. Between 100.59m and 99.59m ATD (base of trench)(0.80m and 1.80m bGL).	No finds
Dark brown black organic peat deposit [2]. Between 99.59m and 96.89m ATD (base of trench)(1.80m BGL).	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Photo 5 Southern edge of the Victoria Dock Road sewer excavation pit, located at the junction with Bridgeland Road, looking west.

Sewer/Foul Water Drainage Diversion Trench	
Location	In the northern half of the carriageway of Victoria Dock Road
Dimensions	Approx. 175m long (E-W) x 2.50m wide (N-S) x 2.50m deep
London Survey grid coordinates	90539.66 35397.09
OS National grid coordinates	540210 180893 (western end) 540383 180919 (eastern end)
Modern Ground Level (adjacent to pit)	101.39m ATD east
Modern subsurface deposits	Modern made ground between 0.8m and 0.7m bGL, overlain by tarmac over concrete 0.40 to 0.80m thick

Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Base of trench at 98.89m ATD (2.50m bGL)
Natural geology observed (truncated/not truncated ?)	Not reached
Extent of modern truncation	0.80m deep
Deposits	Dating Evidence, Finds, and Samples
Blue-grey minerogenic alluvial clay [1]. Between 100.59m and 99.39m ATD (0.80m and 2.00m bGL).	No finds
Dark brown black organic peat deposit [2]. Between 99.39m and 98.89m ATD (base of trench)(2.00m to 2.50m bGL).	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Photo 6 Sewer/Foul Water Drainage Diversion Trench showing peat deposits overlain by alluvial clay and modern made ground, looking south-west



8.2 Seagull Lane

Drive Pit SL2	
Location	Seagull Lane
Dimensions	Monitored to a depth of 1.00m and at a diameter of 3.00m
London Survey grid coordinates	90608.81 35333.12
OS National grid coordinates	540272 180832
Modern Ground Level (adjacent to pit)	103.00m ATD
Modern subsurface deposits	Tarmac and concrete
Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Trench monitored to 102.00m ATD (1.00m bGL)
Natural geology observed (truncated/not truncated ?)	Not reached
Extent of modern truncation	1.00m
Deposits	Dating Evidence, Finds, and Samples
No archaeological remains	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Drive Pit SL6a	
Location	Seagull Lane
Dimensions	Dug to a depth of 6.50m and at a diameter of 3.00m
London Survey grid coordinates	90771.81 35367.40
OS National grid coordinates	540432 180865
Modern Ground Level (adjacent to pit)	102.24m ATD
Modern subsurface deposits	Tarmac and concrete
Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Base of trench at 95.74m ATD (6.50m bGL)
Natural geology observed (truncated/not truncated ?)	Natural gravel deposits at c 97.74m ATD (4.50m bGL)(see Photo 7) This gravel continued to the base of the excavated shaft
Extent of modern truncation	1.00m deep
Deposits	Dating Evidence, Finds, and Samples
Blue-grey minerogenic alluvial clay [1]. Between c 101.24m and 99.24m ATD (1.00m and 3.00m bGL).	No finds
Dark brown black organic peat deposit [2] with occasional animal bones. Between c 99.24m and 97.94m ATD (base of trench)(3.00m and 4.50m bGL).	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Photo 7 Natural gravel from the base of Drive Pit SL6a



Photo 8 SL4a, showing the concrete rings and process of artificial flooding



Drive Pit SL4a	
Location	Seagull Lane
Dimensions	Dug to a depth of 6.00m at a diameter of 2.40m
London Survey grid coordinates	90700.56 35361.53
OS National grid coordinates	540377 180859
Modern Ground Level (adjacent to pit)	102.30m ATD
Modern subsurface deposits	Tarmac and concrete
Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Base of trench 96.23m ATD (6.00m bGL)
Natural geology observed (truncated/not truncated ?)	Natural gravel deposits at 97.23m ATD (5.00m bGL). This gravel continued to the base of the excavated shaft
Extent of modern truncation	Approximately 1.50m deep
Deposits	Dating Evidence, Finds, and Samples
Greenish-grey minerogenic alluvial clay [1]. Between 100.80m and 99.30m ATD (1.50m and 3.00m bGL).	No finds
Dark brown black organic peat deposit [2] with occasional animal bones and frequent unworked natural wood fragments. Between 99.30m and 97.30m ATD (base of trench)(3.00m and 5.00m bGL).	No finds
Trench interpretation and summary	
No archaeological remains were found.	



Photo 9 Excavation of SL4a showing the limitations imposed to archaeological observation by the construction methodology



EDF Diversion Trench	
Location	Seagull Lane
Dimensions	Approx. 450m long x 0.80m wide x 1.00m deep
London Survey grid coordinates	90589.91 35366.82 90996.67 35431.60
OS National grid coordinates	540261 180864 (west end) 540666 180939 (east end)
Modern Ground Level (adjacent to pit)	102.40m ATD (west end), 101.97m ATD (centre), and 102.03m ATD (east end)
Modern subsurface deposits	Overlain by the modern road surface and concrete rubble which extended to 0.40m bGL
Level of base of archaeological/geoarchaeological deposits observed and/or base of trench	Not reached
Natural geology observed (truncated/not truncated ?)	Not reached
Extent of modern truncation	>1.00m
Deposits	Dating Evidence, Finds, and Samples
Modern made ground extending to the base of the trench (1.00m bGL)	No finds
Trench interpretation and summary	
Excavation was not deep enough to reach archaeological deposits but revealed only modern deposits and features. However, it is possible that some of this modern made ground may include c 19th-century land reclamation deposits, however, no clear demarcations were observed or dating evidence found.	



Photo 10 The western end of the EDF Diversion Trench, looking north-west.

9 Assessment of results against original research aims

The draft revised GLAAS guidelines (English Heritage, 2009) require an Assessment of results against original expectations (these no longer mention the criteria for assessing national importance).

Likewise City of London guidance (CoL 2004) sets out advice for work carried out in London, including an assessment of results against original (assessment against the above criteria are only required for evaluations).

9.1 Original objectives and research aims

The original research objectives were met as follows, information was recovered on:

- *Peat and alluvial deposits preserving a wide range of proxy palaeoenvironmental indicators (i.e. pollen, diatoms, plant macro fossils) that can be utilised to reconstruct past landscape, palaeoecology, hydrology, geomorphology and past landforms.*
 - Peat deposits were found in both the deeper sewer trench excavations along Victoria Dock Road and in the Drive Pit excavations (SL4a and SL6a) along Seagull Lane. The surface of these deposits were found between 99.59m and 99.39m ATD (1.80m and 2.00m bGL) in Victoria Dock Road and between 99.30m and 99.24m ATD (both 3.00m bGL) in Seagull Lane. These peat deposits represent the marginal marshlands within LZ4, as indicated in the geoarchaeological deposit model (Crossrail 2008). As such, these deposits had the potential to preserved evidence of prehistoric wetland activity, for example, Bronze Age trackways or platforms and organic remains. However, no remains related to prehistoric human activity were revealed during the watching brief. The peats may have preserved a wide range of proxy palaeoenvironmental indicators, however, as complete profiles were not revealed, sampling was not deemed appropriate.
 - Blue-grey alluvial clays sealed the peats and were consistently discovered beneath the modern overburden. These clays represent the minerogenic part of the alluvial sequence of LZ4. The surface of these clays was found between 101.06m and 100.59m ATD (0.40m and 0.80m bGL) in diversion trenches along Victoria Dock Road, and between 101.24m and 100.80m ATD (1.00m and 1.50m bGL) in the Drive Pit excavations (SL4a and SL6a) along Seagull Lane. These sediments had the potential to preserved evidence of activity of a late Iron Age to medieval date, however, no archaeological remains were not found.
- *Prehistoric structural timber remains such as trackways, fish traps and revetments possibly occurring within the thick peat deposits.*
- No evidence of Prehistoric structural was found.



- *Mesolithic to Neolithic dryland activity horizons above gravel high points, consisting of ephemeral scatters of animal bone and lithic material.*
 - No Mesolithic or Neolithic dryland activity horizons were exposed during archaeological investigations at North Woolwich.
- *Prehistoric negative features such as pits and postholes cutting through the Pleistocene floodplain gravels and overlying terrestrial palaeosols.*
 - No Prehistoric negative features were observed.
- *Evidence of floodplain stabilisation and soil formation of a Roman to Medieval date within the upper minerogenic alluvium, and associated archaeology consisting of pits, ditches etc.*
 - No evidence of floodplain stabilisation and soil formation of a Roman to Medieval date was found.

Specific research aims were set out for the works at the Victoria Dock Portal in the WSI (Crossrail 2011a). These aims have been addressed during the archaeological monitoring of the works as follows:

- *Post-medieval structural remains and features associated with the industrial heritage of the area, with particular reference to features associated with the docks and the former North Woolwich Railway. Such material may be encountered within the made ground.*
 - No post-medieval structural remains or features associated with the industrial heritage of the area were found.
- *What is the development of the local landscape, topography and environment of the Thames floodplain? Can buried peat deposits be identified? If they can be dated what activity is contained within them, and how does this help to refine knowledge of prehistoric activity, occupation and settlement in the marginal wetland habitats?*
 - While, buried peats were identified within deeper diversion works (see 8), no dating evidence or evidence of human activity was found within them. Thus, no contribution can be made to refining our knowledge of prehistoric activity, occupation and settlement in the marginal wetland habitats.
- *Is there any evidence for Mesolithic activity at the base of the alluvium/surface of the gravels? Is there any evidence of Mesolithic activity on the higher gravel areas of LZ3? If so, what form does this activity take, e.g. fishing, hunting, flint working etc?*
 - No Mesolithic evidence was at the base of the alluvium/surface of the gravels, nor was there any evidence for the LZ3 dryland activity horizon.

- *Is there any evidence for later prehistoric activity or occupation? What is the nature of activity in the marginal marshlands of LZ4? Is there evidence of prehistoric water management or subsistence fishing? What is the nature of activity on the higher grounds of LZ3? Is there evidence of semi-permanent occupation?*
 - There was no evidence for later prehistoric activity or occupation within the marginal marshlands of LZ4. The higher grounds of LZ3 were not found during these investigations.

- *Is there any evidence for Roman activity, in particular for water management, flood defences and/or fishing?*
 - No evidence for Roman activity.

- *What can be learned about the process of land reclamation and management of the area from the medieval period until the construction of the docks?*
 - The upper parts of the alluvial minerogenic clay sequence may represent tidal inundation of intertidal muds and salt marsh environments which continued into the medieval period, gradually raising and levelling off the surface of the floodplain. However, no archaeological evidence was found of medieval activity. The absence of evidence for medieval to early post-medieval land reclamation and management may suggest this area was abandoned during these periods.

- *What can be learned about the development of the docks during the recent historic period? Can details about London's growth as a 'world city' and the contribution of the Docks to this economic growth be further elucidated?*
 - No structural remains or features associated with the development of the docks were exposed. Truncation related to the construction and laying out of the modern footpaths and carriageways of Victoria Dock Road and Seagull Lane may have removed any evidence of the historic period and industrial development.

- *Are there any surviving remains of the Royal Victoria and Albert Docks Cut, and the channels that fed into it? If so, what can be learned about the methods, materials and techniques employed in its construction?*
 - No remains associated with the Royal Victoria and Albert Docks Cut were exposed.

9.2 Additional research themes

No new themes have been identified from the fieldwork results.



10 Statement of potential archaeology

There were no archaeological finds or evidence of anthropogenic activity within any of the deposits found during this watching brief. However, these excavations were relatively localised and the majority of excavation did not exceed a depth of 2m. Archaeological remains may still survive beyond the edges of these excavations or at greater depths, particularly earlier prehistoric activity.

Therefore, the assessment of the archaeological potential of the Victoria Dock Portal site as outlined in the SS-WSI (Crossrail 2011a) may still be considered viable.

These potentials will be assessed by detailed recording and the recovery of samples during the forthcoming trench evaluations at Victoria Dock Portal and Custom House Station. These evaluations will also provide a better opportunity to identify archaeological remains which may be preserved in these deep alluvial deposits.

10.1 Importance of Resources

The importance of the excavated remains has been assessed using professional judgement, informed, where applicable, by the criteria for assessing the national importance of monuments (DCMS 2010, Annex 1).

The main reason for the evaluation was as a precautionary measure to ensure significant archaeological remains were not damaged without record rather than to determine their significance or potential. However, the lower alluvial deposits exposed in the sections of the enabling works trenches are interpreted as having uncertain rarity and diversity.

While there is still potential for significant remains within these deposits, the deposits excavated during this watching brief and the records made can be assessed as being of **low importance**.



11 Conclusions

11.1 Geology

Natural terrace gravels were only reached within Drive Pits SL4a and SL6a. The gravels were recorded at c 97.23m ATD (5.00m bGL) in SL4a and at c 97.74m ATD (4.50m bGL) in SL6a. Unfortunately, due to the method of excavation (see 7.1), these deposits could not be observed *in situ* and spoil was inspected only once it was removed by machine (see Photo 7). Due to the restrictions placed on access and observation, a precise measurement of the depth of these deposits could not be made (see 7.1), and therefore these levels may not be reliable.

Geology was not observed in any other excavated areas.

11.2 Prehistoric

Excavation along Victoria Dock Road and Seagull Lane revealed deposits associated with LZ4.

Peat deposits were found in both the deeper sewer trench excavations along Victoria Dock Road and in the Drive Pit excavations (SL4a and SL6a) along Seagull Lane. The surface of these deposits were found between 99.59m and 99.39m ATD (1.80m and 2.00m bGL) in Victoria Dock Road and between 99.30m and 99.24m ATD (both 3.00m bGL) in Seagull Lane. These peat deposits represent the marginal marshlands within LZ4. As such, these deposits had the potential to preserved evidence of prehistoric wetland activity, for example, Bronze Age trackways or platforms and organic remains. However, no remains related to prehistoric human activity were revealed during the watching brief.

The blue-grey alluvial clays sealed the peats and were consistently discovered beneath the modern overburden. These clays represent the minerogenic part of the alluvial sequence of LZ4. The surface of these clays was found between 101.06m and 100.59m ATD (0.40m and 0.80m bGL) in diversion trenches along Victoria Dock Road, and between 101.24m and 100.80m ATD (1.00m and 1.50m bGL) in the Drive Pit excavations (SL4a and SL6a) along Seagull Lane. These sediments had the potential to preserved evidence of activity of a late Iron Age to medieval date, however, no archaeological remains were not found.

The gravels islands of LZ3 were not encountered in their anticipated location along Victoria Dock Road. However, if present along the line of excavations, is it possible that they were not reached by shallower areas of excavations. Alternatively, they may lay beyond the areas of excavation to the north or south, or perhaps be much smaller than predicted.

The channel area of LZ2 was also not found during this watching brief. It is therefore likely to lay further south of the pit excavations locations along Seagull Lane.



11.3 Roman remains

Parts of the alluvial clay sequence may have been deposited during the Roman period. However, these deposits were archaeologically sterile and no archaeological evidence of Roman activity or occupation was found.

11.4 Medieval remains

The upper parts of the alluvial clay sequence may have been deposited during the medieval period. However, these deposits were archaeologically sterile and no archaeological evidence of medieval activity or occupation was found during this watching brief.

11.5 Post-medieval remains

Post-medieval archaeological remains were not observed during this watching brief.



12 Publication and dissemination proposals

The watching brief results will initially be disseminated via this report. The supporting site archive of finds and records (including digital data), post-excavation assessment, analysis and publication proposals will be considered in relation to later fieldwork in the wider context of archaeological potential and results across the Crossrail scheme.

A summary report will be published in the London Archaeologist excavation round up and also deposited with the LAARC.



13 Archive deposition

The site archive containing original records and finds will be stored temporarily with MOLA pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail project.



14 Bibliography

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16 NMR OASIS archaeological report form

16.1 OASIS ID: molas1-131308

Project details

Project name	Archaeological Watching Brief on Utility Diversions at Victoria Dock Portal (XSX11)
Short description of the project	Archaeological watching briefs carried out by the Museum of London Archaeology (MOLA) on the Crossrail Victoria Dock Portal worksite, which consisted of utility diversions centred around Victoria Dock Road and Seagull Road. Generally, trenches were excavated to a depth of 2.0m. Natural terrace gravels were overlain by thick peat deposits sealed by a horizon of alluvial clay. All deposits were archaeologically sterile. The sequence was sealed by modern made ground and the concrete and tarmac of the current road and pavement surfaces.
Project dates	Start: 04-07-2011 End: 16-12-2011
Previous/future work	Yes / Not known
Any associated project reference codes	XSX11 - Sitecode
Type of project	Field evaluation
Current Land use	Transport and Utility 1 - Highways and road transport
Methods & techniques	"Sample Trenches"
Development type	Rail links/railway-related infrastructure (including Channel Tunnel)
Prompt	Crossrail Act 2008
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	GREATER LONDON NEWHAM NEWHAM Victoria Dock Portal



Postcode E16

Study area 4000.00 Square metres

Site coordinates TQ 4021 8089 51 0 51 30 32 N 000 01 14 E Point

Site coordinates TQ 4067 8094 51 0 51 30 33 N 000 01 38 E Point

Height OD / Depth Min: -2.77m Max: -2.26m

Project creators

Name of Organisation MoL Archaeology

Project brief originator Crossrail

Project design originator Crossrail

Project director/manager David Divers

Project supervisor Matthew Ginnever

Project supervisor Robert Hartle

Project supervisor Greg Laban

Project supervisor Rachel English

Type of sponsor/funding body Developer

Name of sponsor/funding body Crossrail

Project archives

Digital Archive recipient LAARC

Digital Contents "Stratigraphic","Survey"

Digital Media available "GIS","Images raster / digital photography","Survey","Text"

Paper Archive LAARC



recipient

Paper Contents "Stratigraphic", "Survey"

Paper Media available "Context sheet", "Correspondence", "Diary", "Drawing", "Map", "Matrices", "Notebook - Excavation", "Research", "General Notes", "Photograph", "Plan"

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title C263 ARCHAEOLOGY LATE EAST Fieldwork Report Archaeological Watching Brief on Utility Diversions at Victoria Dock Portal (XSX11)

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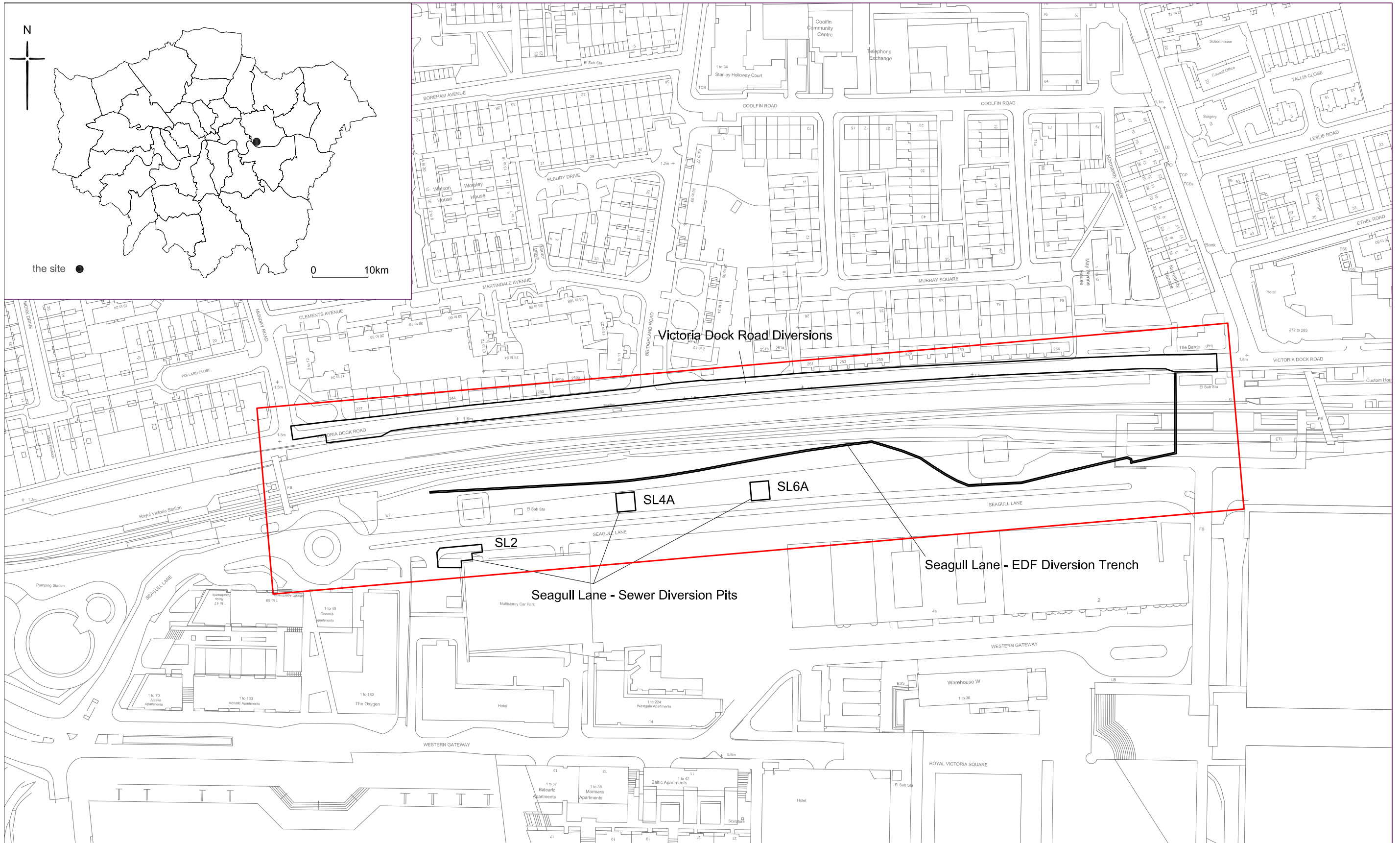


Fig 1 Location of utility diversions on Victoria Dock Road and Seagull Lane

- Site outline
- Trench edge

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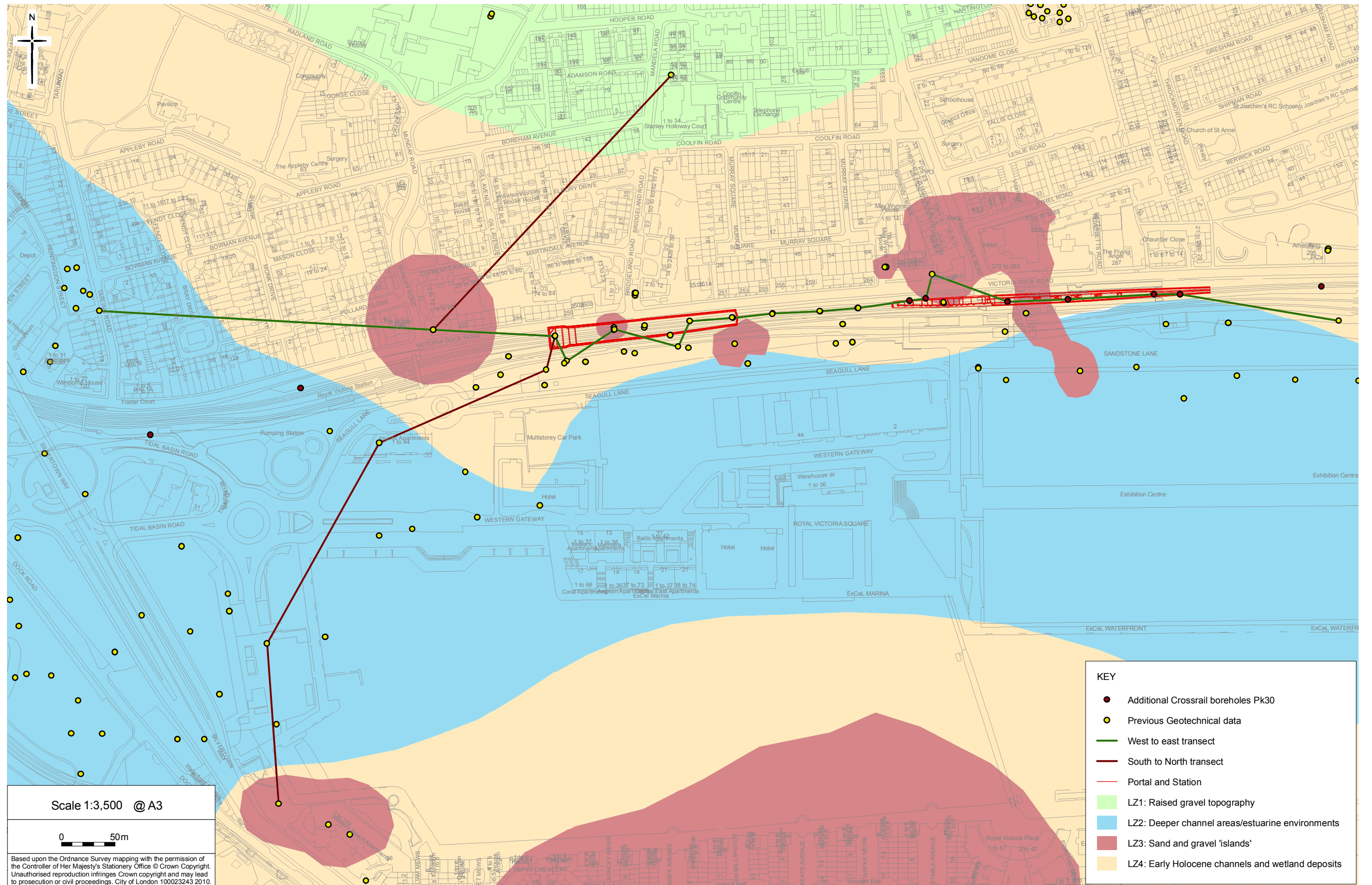


Fig 2: Landscape Zones