

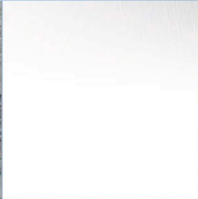
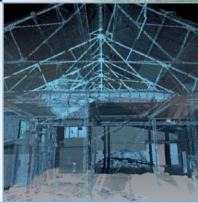
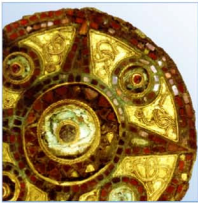
Napier Lines Site, Woolwich, London Borough of Greenwich An Archaeological Watching Brief Report

National Grid Reference: 542629 177911

AOC Project Number: 30782

Site Code: NAR10

Date: July 2010



ARCHAEOLOGY

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CONSERVATION

Napier Lines Site, Woolwich, London Borough of Greenwich: An Archaeological Watching Brief Report

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Non-Technical Summary

An archaeological watching brief was undertaken by AOC Archaeology Group on geotechnical site investigation works at the Napier Lines site, Woolwich, London Borough of Greenwich between the 12th and 14th July 2010. The watching brief was undertaken on soak-away test pits at the site and window slots on the site. The results of the watching brief indicated that significant horizontal truncation had taken place across the full area of the site, with only limited areas where possible in situ soil horizons remained. Subsequently, two phases of made ground deposition had taken place. The first phase was localised made ground deposition associated with 19th century military use of the site, and the second phase attributed to 20th century landscaping of the site. The only feature of archaeological interest identified was a possible 19th or 20th century brick culvert located in the central area of the site.

1. Introduction

1.1 Site Location

1.1.1 The site is located at the Napier Lines site in Woolwich, London Borough of Greenwich. The site is bounded to the north by Repository Woods, to the east by Repository Road and Green Hill, to the south by buildings associated with the current military usage of the site and to the west by Charlton Cemetery. The site is centred on National Grid Reference (NGR) 542629, 177911 (Figures 1 & 2). The area of the site measures approximately 2ha.

1.2 Planning Background

1.2.1 The planning background to the site has been reported on by RPS (RPS 2010a, 2010b). The following summary of the planning background to the site has derived from these previous reports.

1.2.2 The site is located within the Woolwich Common Conservation Area designated as the Greenwich UDP (2006). The site is not located within a designated Area of Archaeological Potential. Proposed changes to Repository Wood to the north of the Napier Lines site are considered to be significant as a consultation has been undertaken as to whether to include Repository Woods on the English Heritage List of Registered Parks and Gardens. Proposals have also been made for Repository Woods to be subject to a scheduling order under the Ancient Monuments and Archaeological Areas Act 1979.

1.2.3 The Napier Lines site forms the focus of a planning application for the relocation of The King's Troop, Royal Horse Artillery from St John's Wood to Woolwich. Any proposed changes to the setting of the Rotunda on the site are considered to be significant as are any proposed changes on or near earthworks, extant or otherwise, relating to the 19th century fortifications that were aligned along the eastern side of the Napier Lines site.

1.2.4 Geotechnical works, including three soak-away test pits, 10 windows sample boreholes and four cable percussion boreholes, were proposed. An archaeological watching-brief was carried out on these works in order to assess the potential for archaeological remains on the site. In accordance with Planning Policy Statement 5 (DCLG 2010), the results of the watching may help inform an archaeological planning response should the proposed development site receive a planning consent from the London Borough of Greenwich.

1.2.5 A written scheme of investigation (WSI) was produced by RPS on behalf of Morgan Sindall prior to the works (RPS 2010a) and provided a detailed archaeological project design for this stage of works.

1.3 Geology and Topography

1.3.1 The British Geological Survey (1998) indicates that the underlying geology of the site is Harwich Formation sand with black flint (RPS 2010a).

1.3.2 A topographic survey indicates that the southern limit of the site is at 44.0m OD. The site slopes down to c.43.0m OD towards the north. It is likely that the site has been subjected to significant levelling and earth movement, although it is not clear when this may have occurred (RPS 2010a).

1.3.3 Early topographical maps of the site suggest a landscape consisting of a plateau to the south with valleys and ravines dropping towards the north. This topography appealed as a location for military

training and can be visible in the sharp drop from the site to the Repository Woods to the north (RPS 2010a).

- 1.3.4 Details on the geology of the site and phases of made ground have been previously identified through window investigations undertaken in 2007 (RPS 2010a, 3).

2. Archaeological and Historical Background

2.0.1 The following information is drawn from the archaeological desk-based assessment undertaken by RPS (RPS 2010a, 2010b). The site has been under military control since the Royal Military Repository took possession of the land during the 1700's (Newsome et al. 2009, 4). Subsequent restrictions in access to the site have resulted in limited previous knowledge of the archaeological remains at the site (Newsome et al. 2009, 4).

2.0.2 No specific Greater London Historic Environment Record entry exists for the Napier Lines site. The archaeological background to the site has been dominated by the Repository Woods to the north of the site, which were surveyed by English Heritage's Archaeological Survey and Investigation Team in 2008 (RPS 2010a, 2010b; Newsome et al. 2009).

2.1 The Prehistoric Period (c. 500,000 BP – AD 43)

2.1.1 No previous archaeological finds from the site are known from the Prehistoric period.

2.2 The Roman Period (AD 43 – 410)

2.2.1 No previous archaeological finds from the site are known the Roman period.

2.3 The Early Medieval (AD 410-1066)

2.3.1 No previous archaeological finds from the site are known the Early Medieval period.

2.4 The Later Medieval (AD 1066 – AD 1536)

2.4.1 No previous archaeological finds from the site are known the Later Medieval period.

2.5 Post-Medieval (c. AD 1550 – 1900) and Modern (AD 1900 – Present) Periods

2.5.1 The Repository Woods was established as a military training ground in the early 19th century. Military use of the site has continued to the present day. The GLHER record for Repository Woods (MLO76195) has identified early features of the site identified through earthworks. In particular, the Napier Line itself is a linear fortification identified by documentary evidence. A linear earthwork on the site may be associated with the Napier Line, comprising of a 366m long linear earthwork that appears to define the eastern boundary of the compound. Bastion sections with associated scarps, the brick wall defining the Rotunda compound (MLO82965), revetments, a 4m wide ditch and bank are features associated with this linear earthwork. A 30m long trench located to the west of three ponds also dates from the 19th century and was known to have been used for training purposes (GLHER MLO76195). An additional 19th century irregular mound and possible track have also been identified. The mound has been identified in photographs being used by soldiers for parbuckling exercises where a canon is lowered down a steep slope (GLHER MLO76195).

2.5.2 A number of tracks and paths across the site are evident. A training battery dating from the 1840s also appears to be indicated by earthworks across the site. Remains of two 19th century ponds are

known together with evidence for tree planting and two rectangular, level platforms to the east of the large pond. These may represent areas of recreational activity and are marked on the Bayly map of 1867 as a "Croquet Ground" (GLHER MLO76195). A parish boundary to the south of the site, dating from 1827, is located near to a watercourse that has become culverted, indicating drainage of the site and a small well house may be associated with this (GLHER MLO76195).

- 2.5.3 The northern area of Napier Lines site was not associated with military training but housed allotments and the earthworks of a piggery are evident. Extensive 20th century earthworks (GLHER MLO76195) linked to military practise are also known across the site cited (Blatherwick 2010a, 6).
- 2.5.4 A cluster of trenches to the southern and western boundary of the site appear to date from the period of the First World War. Other buildings evidence relates to the Second World War. Four to five storage buildings are likely to date to between 1939 and 1951. The centre of the site contains a Rifle Range evident as a large earthwork, constructed between 1916 and 1945.
- 2.5.5 The site contains several listed buildings, including: the Woolwich Rotunda (Grade II* 200360), Royal Artillery Institute Observatory (Grade II 200361), Repository gatehouse (Grade II 200508) and northern boundary wall (Grade II 200407) (Newsome et al. 2009, 4).
- 2.5.6 Details of modern land truncation and levelling have been reported on by RPS (2010a, 6-7). Modern truncation and levelling of the site is expected to have impacted significantly on the potential survival of below ground archaeological remains (RPS 2010a, 7).

3. Strategy

3.1 Aims of the Investigation

3.1.1 The original aims of the watching brief were to:

- To establish the presence/absence of archaeological remains within the site.
- To determine the extent, condition, nature, character, quality and date of any archaeological remains encountered.
- To record and sample excavate any archaeological remains encountered.
- To assess the ecofactual and environmental potential of any archaeological features and deposits.
- To determine the extent of previous truncations of the archaeological deposits.
- To make available to interested parties the results of the investigation in order to inform the mitigation strategy as part of the planning process.

3.1.2 The specific aims of the watching brief were:

- To determine the potential for surviving evidence of buildings of the Royal Military Repository on the site.
- To determined if there is any evidence for remains of the 19th century defensive fortifications, and in particular of the North Bastion, on the site.
- To determine if 20th century construction activity has removed the archaeological potential of the site.
- To determine if 18th and 19th century archaeological remains are present.

- To enable the London Borough of Greenwich's Archaeological Advisor to make an informed decision on the status of the condition on the planning permission, and any possible requirement for further work in order to satisfy that condition.
- The final aim was to make public the results of the investigation, subject to any confidentiality restrictions.

4. Methodology

- 4.1 The geotechnical site investigation works consisted of three soak-away test pits, 10 window sample boreholes and four cable percussion boreholes (Figure 2). The archaeological watching brief was required on the soak-aways in order to examine the potential archaeological stratigraphy that may have survived on the site. The location of the test pits had to move from the position stated in the WSI for practical considerations.
- 4.2 A detailed method statement for the works was prepared by RPS (2010a) and was followed on site. The soak-aways were machine excavated to a depth of up to 3m. All excavations were monitored by professional archaeologists.
- 4.3 Fieldwork procedures followed the Museum of London Archaeological Site Manual (3rd Edition) (MoL 1994).
- 4.4 The excavation, recording and reporting conformed to current best archaeological practice and local and national standards and guidelines:
- English Heritage – Management of Archaeological Projects (EH 1991).
 - English Heritage – Archaeological Guidance Paper 3: Standards and Practices in Archaeological Fieldwork (EH 1998).
 - English Heritage – Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation (EH 2002).
 - Institute for Archaeologists – Standards and Guidance and Guidelines for Finds Work (IfA 2008).
 - Institute for Archaeologists – Standard and Guidance for Archaeological Watching Briefs (IfA 2008).
 - Institute for Archaeologists – Code of Conduct (IfA 2010).
 - Rescue/United Kingdom Institute for Conservation – First Aid for Finds (Second Edition) (CBA 1998).
 - United Kingdom Institute for Conservation – Conservation Guidelines No.2 (UKIC 1983).
 - United Kingdom Institute for Conservation – Guidance for Archaeological Conservation Practice (UKIC 1990).
- 4.5 A unique site code (NAR10) was acquired for the project from the Museum of London prior to the commencement of works on site.

4.6 The watching brief was undertaken by Paul Fitz, Project Officer, under the overall direction of Melissa Melikian; General Manager, AOC Archaeology Group and monitored by Simon Blatherwick, RPS on behalf of Morgan Sindall.

5. Results

5.1 Soakaway Trench 1

5.1.1 Surface of Trench = 44.45m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.45-44.35m	0.00m	(101)	Topsoil. Soft, dark grey, clayey sand silts.
44.35-44.00m	0.10m	(102)	Made Ground. Compact gravel. Frequent modern debris.
44.00-43.60m	0.45m	(103)	Made Ground. Dark brown, sandy silt gravel. Buried plant remains.
43.60-43.10m	0.85m	(104)	Made Ground. Dark greyish brown, sandy silt, CBM and timber fragments.
43.10m (NFE)	1.35m	(105)	Natural. Compacted, mid greyish brown, gravely sandy silt.

5.1.2 The earliest deposit recorded was a compacted, mid greyish brown, natural sandy silt gravel (105) recorded at a height of 43.10m AOD. Overlying the natural was a series of three distinct made ground deposits. Immediately above the natural deposit (105) was a dark greyish brown, sandy silt made ground deposit (104) which contained small fragments of ceramic building material (CBM) and wood, and was recorded as measuring up to 0.50m thick. Deposited above made ground (104) was additional made ground material consisting of a dark brown, sandy silt gravel (103) which was 0.40m thick, with fragments of plant remains located within the context. The most recent of the made ground deposits, overlying context (103), was recorded as a compact gravel deposit (102), 0.35m thick, containing frequent modern debris such as plastic, CBM and glass. The upper horizon of the made ground was located at 44.35m AOD. Sealing the sequence of deposits was layer of soft, dark grey, clayey sand silt topsoil (101) 0.10m thick.

5.2 Soakaway Trench 2

5.2.1 Surface of Trench = 43.20m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
43.20-42.90m	0.00m	(201)	Topsoil. Soft, dark grey, clayey sand silts.
42.90-42.50m	0.30m	(202)	Made Ground. Firm, dark brownish grey, sandy silt. Glass and metal debris.
42.50-42.35m	0.70m	(203)	Made Ground. Dump of roofing slate.
42.35m (NFE)	0.85m	(204)	Natural. Compact, mid greyish brown, silty sand gravel.

5.2.2 The earliest deposit observed in Soakaway Trench 2 was a compact, mid greyish brown, silty sand gravel (204) which appeared to represent the localised natural deposit. The natural was recorded at

its highest at 42.35m AOD. Deposited above the natural (204) was a 0.15m thick dump layer primarily consisting of fragmentary waste roofing slate (203) which contained occasional fragments of small glass vessels possibly associated with a medical function. Overlying dump layer (202) was a more substantial layer of firm, dark brownish grey, sandy silt made ground (202), which measured up to 0.40m thick and contained 19th or 20th century glass and metal debris. Made ground (202) was located at a height of 42.90m AOD. The latest deposit in the sequence was a layer of dark grey, clayey sand silt topsoil (201) which measured up to 0.30m thick.

5.3 Soakaway Trench 3

5.3.1 Surface of Trench = 43.14m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
43.14-42.64m	0.00m	(301)	Topsoil. Soft, dark grey, clayey sand silts.
42.64m (NFE)	0.50m	(302)	Made Ground. Dump of glass medical waste.

5.3.2 The earliest deposit encountered was a dump layer (302) predominately consisting of glass phials believed to contain medicinal liquids. The surface of dump layer (302) was recorded at 42.64m AOD. Due to the possibility of contamination the excavation of Soakaway Trench 3 was halted at this depth. Sealing layer (302) was a clayey sand silt topsoil deposit (301) 0.50m thick.

5.4 Soakaway Trench 4

5.4.1 Surface of Trench = 42.27m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
42.27-42.12m	0.00m	(401)	Topsoil. Soft, greyish brown, sandy silt.
42.12-42.07m	0.15m	(402)	Made Ground. Re-deposited layer of soft, yellow, sand.
42.07-41.92m	0.20m	(403)	Natural (?). Light grey, gravely silty sand.
41.92m (NFE)	0.35m	(404)	Natural. Compact, mid yellowish brown, sandy gravel.

5.4.2 The earliest deposit recorded was a natural formation of compact, mid yellowish-brown, sandy gravel (404), observed at a height of 41.92m AOD. The natural was overlain by a layer of light grey, sandy gravel (403), which contained reddish brown sandy lenses, reaching a thickness of 0.15m at a height of 42.07m AOD. An aspect of disturbance was recorded associated with layer (403) preventing a definitive interpretation of its status as a natural deposit. A layer of re-deposited sandy made ground (402), 50mm thick, was located above sandy deposit (403) reaching a maximum height of 42.12m AOD. Sealing the sequence of deposits in Soakaway Trench 4 was a 0.15m thick layer of sandy silt topsoil (401).

5.5 Window Sample 1

5.5.1 Surface of Window Sample = 44.00m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.00-43.86m	0.00m	(501)	Concrete Slab.
43.86-43.41m	0.14m	(502)	Modern Formation Deposit.
43.41-43.26m	0.59m	(503)	Soil Horizon. Dark greyish brown, clayey sand silt.
43.26-42.96m	0.74m	(504)	Soil Horizon. Dark greyish brown, clayey sand silt.
42.96-42.51m (NFE)	1.04m	(505)	Natural. Compacted, mid brownish grey, silty sand gravel.

5.5.2 The earliest deposit encountered in Window Sample 1 was a compact, mid brownish grey, natural silty sand gravel deposit (505) surviving to a height of 42.96m AOD. A sequence consisting of two individual soil horizons overlay the natural deposit (505). The first of the two soil horizons was a dark greyish brown, clayey sand silt deposit (504) with recorded inclusions of occasional fragments of 20th century pottery and window glass, charcoal flecks and moderate small stones. Layer (504) measured up to 0.30m thick. The second soil horizon (503) deposited above layer (504) was very similar in character, although the inclusions were limited to occasional sherds of late 19th or 20th century pottery and fragments of CBM. Layer (503) was limited to a thickness of 0.15m, reaching a maximum height of 43.41m AOD. Sealing soil horizon (503) was a layer of modern aggregate (502) facilitating the laying of concrete slab (501), which together measured 0.60m thick.

5.6 Window Sample 2 (Figure 3)

5.6.1 Surface of Window Sample = 44.77m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.77-44.62m	0.00m	(601)	Topsoil. Soft, dark greyish brown, sandy silt.
44.62-44.10m	0.15m	(602)	Made Ground. Firm, yellowish brown, sandy silt. Mixed pockets of sand and gravel.
44.10-44.00m	0.67m	(603)	Made Ground. Loose, black, ashy silt layer.
44.00-43.78m	0.77m	(604)	Natural (?). Loose, dark yellowish brown, fine silty sand gravel.
43.78-43.66m	0.99m	(605)	Natural (?). Soft, dark reddish brown, sandy silt.
43.66-41.77m (NFE)	1.11-3.00m	(606)	Natural. Compact, dark orangey brown, sandy gravel.

5.6.2 The earliest deposit observed was a compact, dark orangey brown, natural sandy gravel (606), recorded at a height of 43.66m AOD. Overlying natural gravel (606) was a soft, dark reddish brown, sandy silt deposit (605) measuring up to 0.12m thick. Due to the limited exposure of this deposit it is not possible to conclusively interpret this layer as naturally deposited. A further layer of loose, dark yellowish brown, fine silty sand gravel (604) 0.20m thick, was observed above layer (605). It was also not possible to fully define this layer as naturally deposited. Situated above layer (604) was a loose, black ashy silt deposit (603) measuring up to 0.10m thick, which was in turn overlain by a more substantial mixed deposit of yellowish brown, sandy silt made ground (602) 0.30m thick. This

upper made ground horizon was recorded at a level of 44.62m AOD. The sequence was sealed by a dark greyish brown, sandy silt topsoil (601) 0.15m thick.

5.7 Window Sample 3 (Figure 3)

5.7.1 Surface of Window Sample = 44.30m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.30-44.12m	0.00m	(701)	Paving stones and associated formation deposit.
44.12-43.82m	0.18m	(702)	Made Ground. Compact, grey, mixed course sandy silt gravelly.
43.82-43.69m	0.48m	(703)	Made Ground. Compact, greyish brown, clay. CBM and wood content.
43.69-43.49m	0.61m	(704)	Soil Horizon (?). Dark brown, stony clayey silt.
43.49-43.00m	0.71m	(705)	Disturbed Natural. Light yellowish grey, sandy gravelly. Occasional finds recovered.
43.00m (NFE)	1.30m	(706)	Natural. Loose, light greyish brown, sandy gravel.

5.7.2 The earliest deposit observed in Window Sample 3 was a loose, light greyish brown, natural sandy gravel (706), recorded at a height of 43.00m AOD. A substantial layer of yellowish grey, sandy gravel (705), up to 0.50m thick, overlay natural (706). This layer appears to be a disturbed natural deposit from which several finds were recovered. These finds include a small lead weight and ceramic tile fragment. Immediately above disturbed natural (705) was a possible soil horizon (704) recorded as a dark brown, stony clayey silt deposit measuring up to 0.20m thick. Deposited above layer (704) was a made ground deposit consisting of a compact, greyish brown, clay (703) from which several fragments of CBM and wood were recovered. Made ground (704) was 0.15m thick at 43.82m AOD. Sealing made ground (704) was a substantial layer of compact gravel (702) acting as a consolidation layer for paving surface (702) which together measured 0.50m thick.

5.8 Window Sample 4 (Figure 3)

5.8.1 Surface of Window Sample = 44.53m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.53-44.41m	0.00m	(801)	Paving stones and associated sandy formation deposit.
44.41-44.11m	0.12m	(802)	Made Ground. Compact, brown, stony silt. Occasional CBM material.
44.11-43.94m	0.42m	(803)	Made Ground. Compact, grey, concrete and stone.
43.94-43.84m	0.59m	(804)	Made Ground. Mid yellowish brown, fine sandy silt gravel.
43.84-43.66m	0.69m	(805)	Soil Horizon (?). Mid brown, clayey sandy silt.
43.66-43.54m	0.79m	(806)	Disturbed Natural. Orange, sandy gravel.
43.54-43.39m	0.91m	(807)	Disturbed Natural. Light yellow, stony sand.
43.39-43.24m	1.06m	(808)	Natural (?). Mid brown, sand.
43.24-42.53m (NFE)	1.21-2.00m	(809)	Natural. Yellowish brown, sand.

5.8.2 The earliest deposit encountered was a yellow brown natural sand (809) at a height of 43.24m AOD. This was overlain by a 0.10m thick darker sandy layer (808) which was also thought to be natural in origin, but too little was observed to be certain. Sequentially, further deposits of a yellow, stony sand (807) and orange sandy gravel (806), together 0.40m thick, were recorded over laying layer (808) which appeared to be layers of previously disturbed natural deposits. Lying over disturbed natural (806) was a possible brown, clayey sand silt soil horizon (805) measuring up to 0.20m and containing charcoal and CBM inclusions. A thin, 0.10m thick layer of sandy silt gravel made ground (804) was deposited above soil horizon (805), at 43.94m AOD. Above made ground (804) was a 0.20m thick modern levelling layer (803) constructed from stone and concrete followed in sequence by a 0.30m thick layer of a mixed stony silt material (802) consolidating the ground prior to the laying of modern paving surface (801).

5.9 Window Sample 5 (Figure 3)

5.9.1 Surface of Window Sample = 44.81m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.81-44.69m	0.00m	(901)	Paving stones and associated sand formation deposit.
44.69-44.57m	0.12m	(902)	Made Ground. Compact, dark greyish brown, sandy clay silt. Occasional stone and CBM fragments.
44.57-44.15m	0.24m	(903)	Made Ground. Dark greyish brown, clayey sand silt. Occasional CBM fragments.
44.15-43.58m	0.66m	(904)	Soil Horizon (?). Dark greyish brown, clayey sand silt.
43.58-43.81m (NFE)	1.23-1.40m	(905)	Natural. Loose, orange, sandy gravel.

5.9.2 The earliest deposit recorded was a loose, orange, natural sandy gravel (905) at a height of 43.58m AOD. This was overlain by a possible soil horizon (904) described as a dark greyish brown, clayey sand silt layer measuring up to 0.60m thick. Deposited over layer (904) was a dark greyish brown, clayey sand silt made ground deposit (903) which contained occasional CBM fragments and was up to 0.40m thick. The upper limit of made ground (903) was recorded at a height of 44.57m AOD. Sealing made ground (903) was a 0.12m thick layer of compact, dark greyish brown, sandy clay silt (902) material, deposited to level the ground to facilitate the laying of a modern stone paving surface (901).

5.10 Window Sample 6 (Figure 3)

5.10.1 Surface of Window Sample = 44.37m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.37-44.22m	0.00m	(1001)	Paving stones and associated sand formation deposit.
44.22-44.16m	0.15m	(1002)	Made Ground. Compact, dark greyish brown, sandy clay silt. Occasional stone and CBM

			fragments.
44.16-44.05m	0.21m	(1003)	Made Ground. Dark greyish brown, clayey sand silt. Occasional CBM fragments.
44.05-44.00m	0.32m	(1004)	Made Ground. Loose, black, ashy silt deposit.
44.00-43.92m	0.37m	(1005)	Made Ground. Dark brownish grey, sandy silt. Moderate stony inclusions.
43.92-43.66m	0.45m	[1006]	Red brick structure.
43.66-42.93m	0.71m	(1007)	Made Ground. Firm, dark brown, clayey sand silt. Small stony inclusions.
42.93-42.78m (NFE)	1.44- 1.59m	(1008)	Natural. Yellow, sandy gravel.

5.10.2 The earliest deposit recorded in Window Sample 6 was a yellow, natural sandy gravel (1008) which was located at a height of 42.93m AOD. Lying immediately above the natural was a made ground deposit (1007) consisting of a firm, dark brown, clayey sand silt material, with moderate small rounded stony inclusions. Made ground (1007) was recorded as up to 0.60m thick. Sealing this layer of made ground was a red brick structure [1006] consisting of two courses bonded together using a cement mortar. The nature of the brickwork would suggest brick structure [1006] is part of the roof capping for a 19th or 20th century culvert. The brick structure was recorded at a height of 43.92m AOD. Made ground (1005) was deposited following the construction of brick structure [1006] and was recorded as a dark brownish grey, sandy silt deposit, containing small stony inclusions, measuring up to 0.10m thick. Overlying made ground (1005) was a distinct, 50mm thick dump layer, of loose ashy silt (1004). Further made ground deposits overlay layer (1004) consisting of a dark greyish brown, clayey sand silt deposit up to 0.10m thick, containing occasional CBM fragments. The upper level of this made ground horizon was observed at 44.16m AOD. Sealing made ground (1003) was a layer of compact, dark greyish brown, sandy clay silt (1002) material 60mm thick, deposited with as a bedding layer for the construction of a modern stone paving surface (1001), which itself was up to 0.15m thick.

5.11 Window Sample 7 (Figures 3 & 4)

5.11.1 Surface of Window Sample = 44.61m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
44.61-43.91m	0.00m	(1101)	Topsoil. Soft, dark greyish brown, sandy silt.
43.91-43.01m	0.70m	(1102)	Made Ground. Re-deposited sandy silt gravels.
43.01-42.51m (NFE)	1.60- 2.10m	(1103)	Natural. Yellow, sandy gravel.

5.11.2 The earliest deposit recorded in Window Sample 7 was a yellow, natural sandy gravel (1103), observed at a height of 43.01m AOD. The natural was overlain by a substantial layer of made ground (1102) 0.90m thick, consisting of re-deposited sandy gravels, which contained lenses of ashy material. Made ground deposit (1102) was sealed by a layer of sandy silt topsoil (1101) up to 0.70m thick.

5.12 Window Sample 8 (Figure 4)

5.12.1 Surface of Window Sample = 43.73m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
43.73-43.63m	0.00m	(1201)	Paving stones and associated sand formation deposit.
43.63-43.13m	0.10m	(1202)	Made Ground. Brown, fine sandy gravel. Occasional CBM fragments.
43.13-42.53m (NFE)	0.60-1.20m	(1203)	Natural. Orangey brown, sandy gravel.

5.12.1 The earliest deposit observed was an orangey brown, natural sandy gravel (1203), recorded at a height of 43.13m. Deposited directly over natural (1203) was a mid brown, fine sandy gravel made ground deposit (1202) which contained occasional brick fragments, reaching a thickness of 0.50m. Made ground (1202) was sealed by a 0.10m thick layer of stone paving slabs and associated formation material (1201).

5.13 Window Sample 9 (Figure 4)

5.13.1 Surface of Window Sample = 43.48m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
43.48-43.33m	0.00m	(1301)	Topsoil. Soft, dark greyish brown, sandy silt.
43.33-42.98m	0.15m	(1302)	Made Ground. Compact, dark greyish brown, sandy clay silt. Frequent modern debris.
42.98-42.63m	0.50m	(1303)	Soil Horizon (?). Dark brown, clayey silt. Occasional CBM fragments.
42.63-42.53m	0.85m	(1304)	Made Ground. Orange, sandy silt.
42.53-42.18m	0.95m	(1305)	Made Ground. Light yellow, re-deposited sandy gravel.
42.18-41.98m	1.30m	(1306)	Soil Horizon (?). Dark brown, clayey silt. Moderate stony inclusions.
41.98-41.38m (NFE)	1.50-2.10m	(1307)	Natural. Firm, orange, sandy gravel.

5.13.2 The earliest deposit observed was a firm, orange, natural sandy gravel (1307), identified at a maximum height of 41.98m AOD. Overlying the natural was a 0.20m thick dark brown, clayey silt deposit (1306) thought to be a possible soil horizon. Subsequently, layer (1306) was sealed beneath a layer of a 0.35m thick layer of made ground (1305) consisting of re-deposited sandy gravel. Overlying made ground (1305) was further artificially deposited material in the form of an orange, sandy silt horizon (1304) measuring 0.10m thick. A possible soil horizon (1303) was located above made ground (1304) which consisted of a dark brown, clayey silt deposit containing occasional small CBM inclusions. Soil horizon was recorded as up to 0.35m thick, reaching a maximum level of 42.98m AOD. A similar depth of sandy clay silt made ground (1302) containing frequent modern debris was deposited above layer (1303), which in turn was sealed by a 0.15m thick layer of sandy silt topsoil (1301).

5.14 Window Sample 10 (Figure 4)

5.14.1 Surface of Window Sample = 42.31m AOD

Level (AOD)	Depth BGL	Context Number	Description/Interpretation
42.31-41.96m	0.00m	(1401)	Topsoil. Soft, dark greyish brown, sandy silt.
41.96-41.61m	0.35m	(1402)	Made Ground. Dark greyish brown, sandy silt. Frequent stony inclusions.
41.61-41.41m	0.70m	(1403)	Natural. Light greyish brown, fine sandy silt gravel.
41.41-41.31m (NFE)	0.90-1.00m	(1404)	Natural. Orange, fine sandy gravel.

5.14.2 The earliest deposit recorded in Window Sample 10 was an orange, natural fine sandy gravel (1404) which was overlain by a 0.20m thick further band of greyish brown, natural sandy gravel (1403). Natural deposits were observed at their highest at a level of 41.61m AOD. Sealing the natural was a dark greyish brown, sandy silt made ground deposit (1402) with frequent stony inclusions measuring up to 0.35m thick. Made ground (1402) reached a maximum height of 41.96m AOD. Overlying the made ground was a layer of sandy silt topsoil (1401) up to 0.15m thick.

6. Finds

6.1 A limited assemblage of finds were recovered during the course of the watching brief on site. These were restricted to two sherds of late 19th or 20th century pottery from context (103), and two sherds of 20th century pottery and a fragment of reinforced window glass from context (104).

7. Conclusions

7.1 During the course of the watching brief on site the nature and extent of the archaeological potential was observed, in addition to the associated disturbance of this potential. A full sequence of deposits was recorded across the full area of the site.

7.2 Natural deposits were identified in all but one of the geotechnical investigation holes examined, ranging in height between 41.92m AOD and 43.66m AOD. The natural deposit was consistently recorded as sandy gravels across the full area of the site, with only minor variations in character represented by patches of either natural sandy silt gravels or pure sandy deposits.

7.3 Only one archaeological feature was observed during the geotechnical works on site, represented by a brick structure [1006] in Window Sample 6 in the central area of the site. The character of the brick work suggests it may have been part of a roof for a brick culvert, or a structure similar, constructed during the 19th or 20th century. The made ground deposit (1007) identified as sealed by brick structure [1006] may potentially be the material which accumulated inside the feature after its construction.

7.4 In general, the deposits recorded across the site are highly variable, represented by variable sequences consisting of made ground, possible soil horizons, topsoil and modern ground surfaces (Figures 3 & 4). The overall effect has been to produce soil profiles with a limited degree of consistency across the full area of the site.

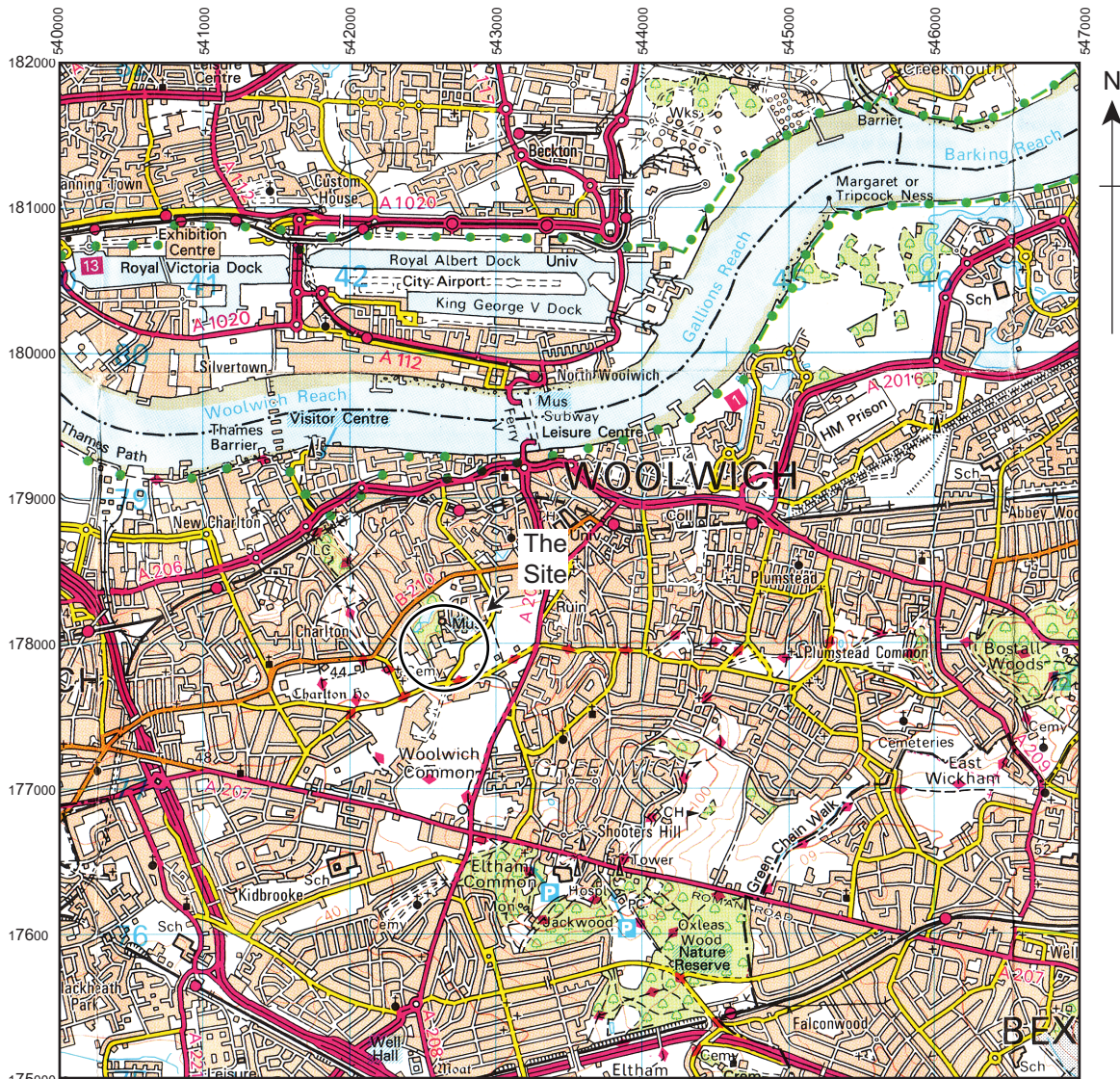
- 7.5 A degree of consistency is present though in the earliest elements of the stratigraphy sequence where natural gravels have been primarily directly overlain by made ground deposits suggesting that significant horizontal truncation of deposits has occurred in the past. In Soakaway Trench 4, and Window Samples 2 and 4, what has been interpreted as disturbed natural deposits were also observed, supporting the interpretation that some level of human activity has occurred at this level. In Window Samples 1, 3, 4 and 9 traces of a possible *in-situ* soil horizon were recorded as overlying the natural implying that horizontal truncation deposits might not have occurred in all areas. The depth of soil horizons in Window Sample 1 is up to 0.45m indicating disturbance in this area is limited, although in the Window Samples 3, 4 and 9 the soil horizons survive to a maximum thickness of 0.20m suggesting a level of disturbance has also occurred limiting the depth of the soil horizons present. Topographically the location of these four window samples is diverse with the samples located to the northeast, northwest and central areas of the site. The only location where a possible concentration of surviving soil horizons could be identified is in the central area of site where Window Samples 3 and 4 are located adjacent to one another. Studying the deposit models appears that the general level of the truncated natural is consistent with the modern site topography (Figures 3 & 4). This indicates that activity to develop the site associated with the raising of the localised ground level has been roughly uniform throughout the course of the sites development.
- 7.6 Made ground deposits were identified in all 14 geotechnical holes monitored. The material varied greatly from re-deposited sands and gravels to dumps of building material, waste glass and ashy waste. Two clear phases of made ground deposition have occurred. The first pre-dating the 20th century, most likely associated 19th century military use of the site; the second phase 20th century in date developing the modern form of the site. The greatest variation in material used derives from this first phase where up to 1m of made ground material has been deposited across site in an apparent ad-hoc fashion as part of immediate localised landscaping. The second phase of made ground deposition appears to be more regimented with between 0.20m and 0.70m of more uniform material being deposited, facilitating the creation of both established paved and grassed areas. Such 20th century landscaping probably occurred in order to create an even ground surface to utilise, as can be seen in the soil profiles (Figures 3 & 4), and to create a more formal environment on site.
- 7.7 Overall, it appears that significant horizontal truncation of natural deposits has occurred in the past, most likely associated with the 19th century military use of the site, with only a few restricted areas where pre-existing soil horizons may survive. This level of horizontal truncation may have potentially removed any archaeological features which may have pre-dated the 19th century military use of the site. Where pre-existing soil horizons are present there is potential for earlier features to survive. This phase of horizontal truncation was followed by two phases of made ground deposition; the first associated with the 19th century activity on site; with the second attributed to 20th century co-ordinated landscaping. The only feature of archaeological interest observed was a possible 19th or 20th century brick culvert identified in the central area of the site.

8. Publication and Archive Deposition

- 8.1 Due to the nature of the project, publication will be restricted to a summary of results in the London Archaeological Round Up, and via the Archaeological Data Service (ADS) (Appendix B).
- 8.2 The archive, consisting of paper records, drawings, and digital photographs will be deposited with the London Archaeological Archive and Research Centre.

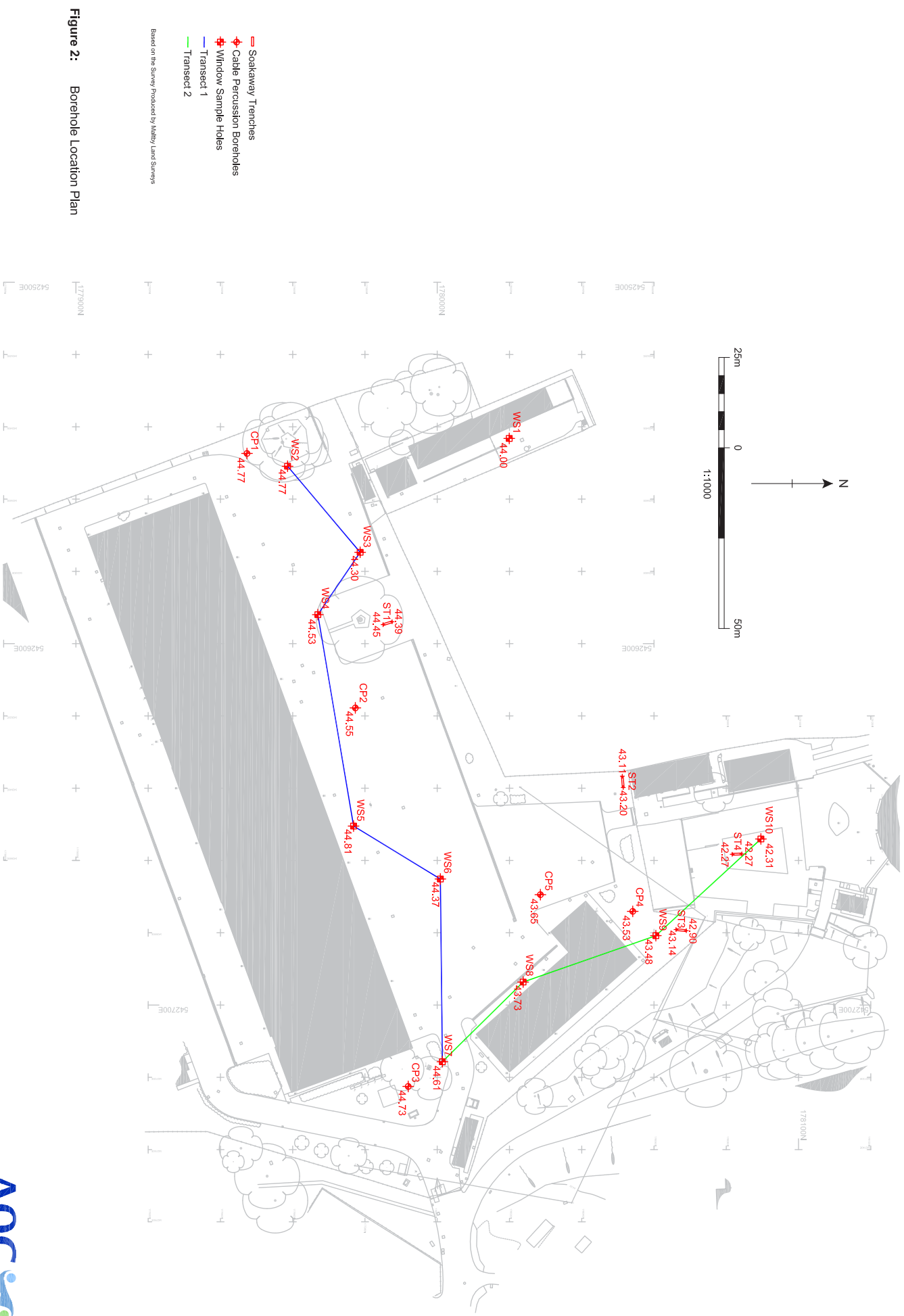
9. Bibliography

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- Newsome S, Millward J, Cocroft W. (2009). *Repository Woods Woolwich, Greater London. An Archaeological Survey of the Royal Military Repository Training Grounds. Survey Report. English Heritage Archaeological Survey and Investigation.* Research Department Report Series 14-2009.



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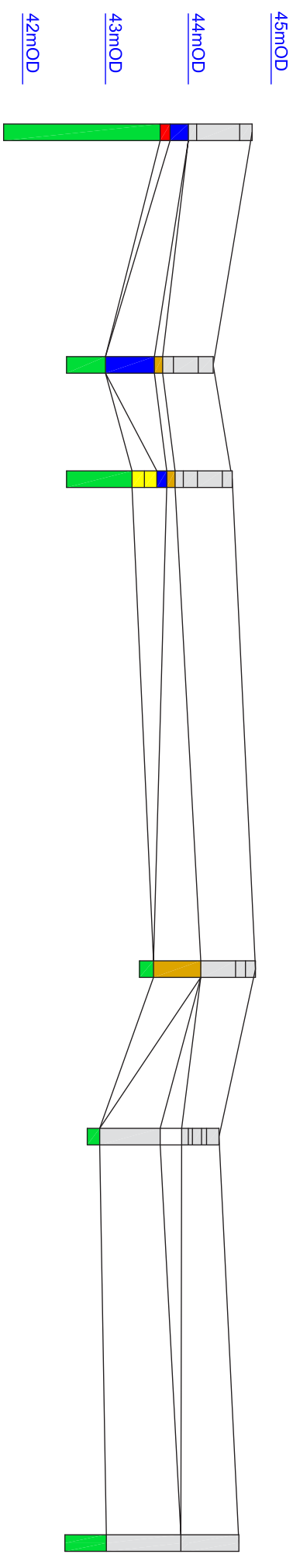
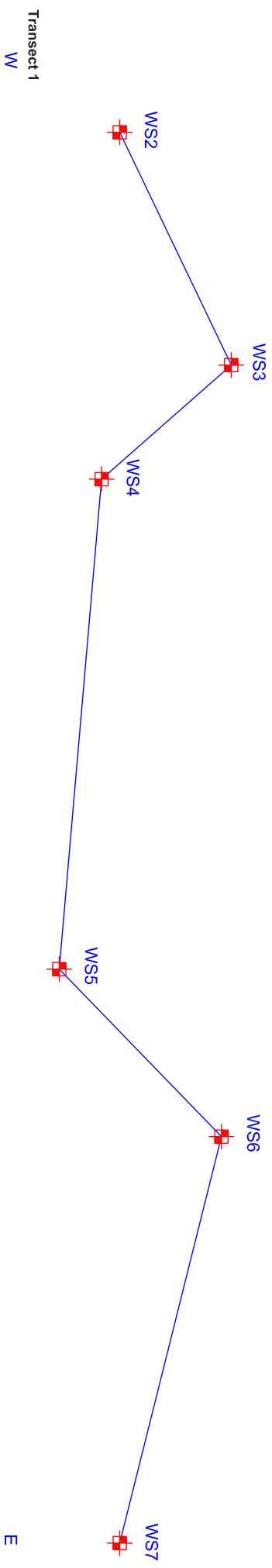
Figure 1: Site Location



Based on the Survey Produced by Malloy Land Surveys

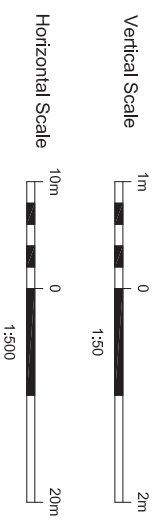
Figure 2: Borehole Location Plan

Window Sample Hole Locations in Plan



- Made Ground
- Natural
- Silt
- Gravel
- Sand
- Structure
- Buried Soil

Figure 3: Transect 1



Window Sample Hole Locations in Plan

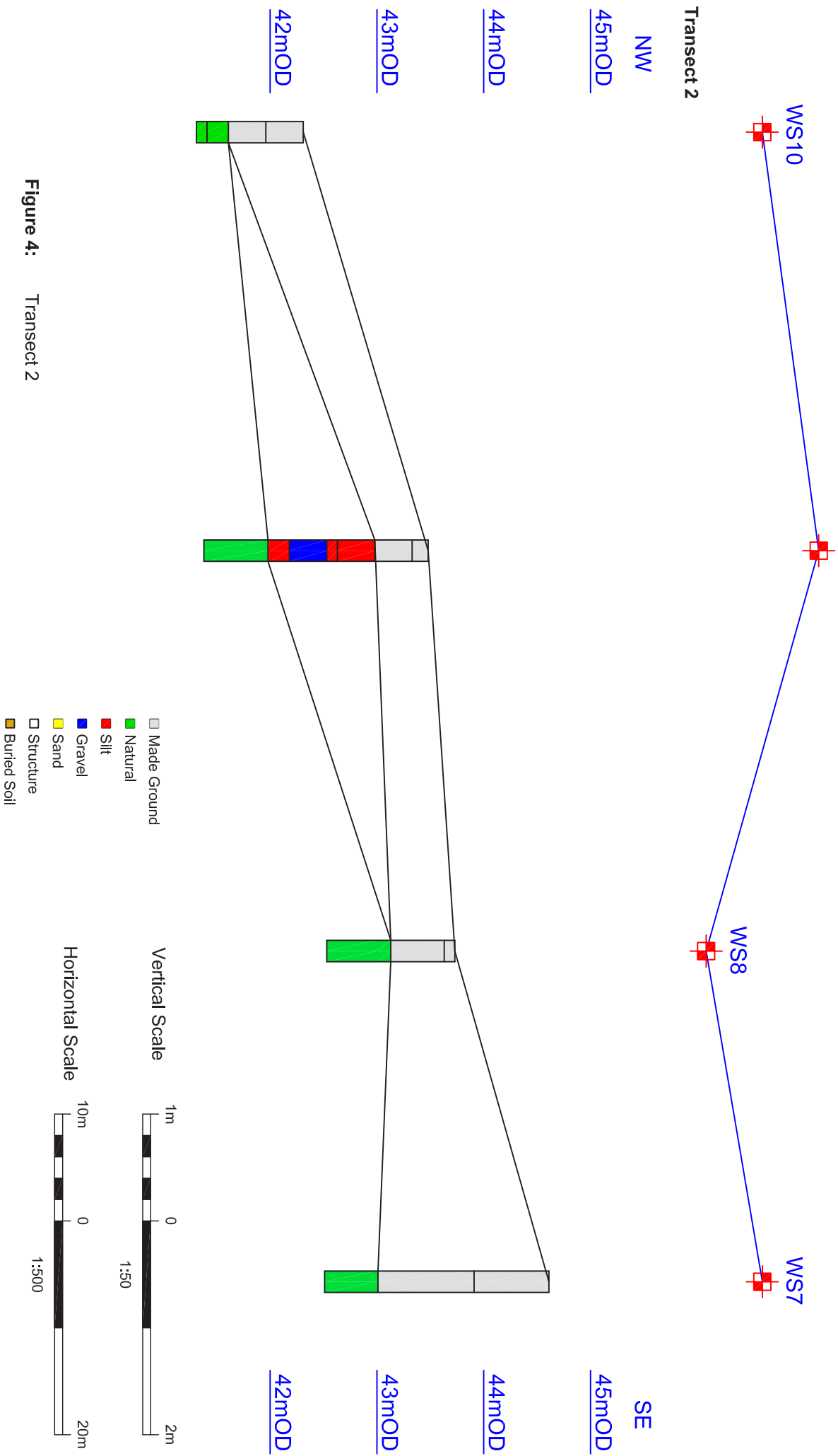


Figure 4: Transect 2



Appendices

Appendix A – Context Register

Context No.	Context Description	Length	Width	Depth
101	Topsoil	3.00m	1.00m	0.10m
102	Made Ground	3.00m	1.00m	0.35m
103	Made Ground	3.00m	1.00m	0.40m
104	Made Ground	3.00m	1.00m	0.50m
105	Natural	3.00m	1.00m	0.10m+
201	Topsoil	3.00m	1.00m	0.30m
202	Made Ground	3.00m	1.00m	0.40m
203	Made Ground	3.00m	1.00m	0.15m
204	Natural	3.00m	1.00m	0.10m+
301	Topsoil	3.00m	1.00m	0.50m
302	Made Ground	3.00m	1.00m	0.10m+
401	Topsoil	3.00m	1.00m	0.15m
402	Made Ground	3.00m	1.00m	0.05m
403	Made Ground	3.00m	1.00m	0.15m
404	Natural	3.00m	1.00m	0.10m+
501	Concrete	0.30m	0.30m	0.14m
502	Formation Deposit	0.30m	0.30m	0.45m
503	Soil Horizon	0.30m	0.30m	0.15m
504	Soil Horizon	0.30m	0.30m	0.30m
505	Natural	0.30m	0.30m	0.10m+
601	Topsoil	0.30m	0.30m	0.15m
602	Made Ground	0.30m	0.30m	0.52m
603	Made Ground	0.30m	0.30m	0.10m
604	Natural (?)	0.30m	0.30m	0.22m
605	Natural (?)	0.30m	0.30m	0.12m
606	Natural	0.30m	0.30m	0.10m+
701	Paving Slabs	0.30m	0.30m	0.18m
702	Made Ground	0.30m	0.30m	0.30m
703	Made Ground	0.30m	0.30m	0.13m
704	Soil Horizon (?)	0.30m	0.30m	0.20m
705	Disturbed Natural	0.30m	0.30m	0.49m
706	Natural	0.30m	0.30m	0.10m+
801	Paving Slabs	0.30m	0.30m	0.12m

802	Made Ground	0.30m	0.30m	0.30m
803	Made Ground	0.30m	0.30m	0.17m
804	Made Ground	0.30m	0.30m	0.10m
805	Soil Horizon (?)	0.30m	0.30m	0.18m
806	Disturbed Natural	0.30m	0.30m	0.12m
807	Disturbed Natural	0.30m	0.30m	0.15m
808	Natural (?)	0.30m	0.30m	0.15m
809	Natural	0.30m	0.30m	0.10m+
901	Paving Slabs	0.30m	0.30m	0.12m
902	Made Ground	0.30m	0.30m	0.12m
903	Made Ground	0.30m	0.30m	0.39m
904	Made Ground	0.30m	0.30m	0.03m
905	Soil Horizon (?)	0.30m	0.30m	0.57m
906	Natural	0.30m	0.30m	0.10m+
1001	Paving Slabs	0.30m	0.30m	0.15m
1002	Made Ground	0.30m	0.30m	0.06m
1003	Made Ground	0.30m	0.30m	0.11m
1004	Made Ground	0.30m	0.30m	0.05m
1005	Made Ground	0.30m	0.30m	0.08m
1006	Brick Structure	0.30m	0.30m	0.26m
1007	Made Ground	0.30m	0.30m	0.73m
1008	Natural	0.30m	0.30m	0.15m+
1101	Topsoil	0.30m	0.30m	0.70m
1102	Made Ground	0.30m	0.30m	0.90m
1103	Natural	0.30m	0.30m	0.10m+
1201	Paving Slab	0.30m	0.30m	0.10m
1202	Made Ground	0.30m	0.30m	0.50m
1203	Natural	0.30m	0.30m	0.10m+
1301	Topsoil	0.30m	0.30m	0.15m
1302	Made Ground	0.30m	0.30m	0.35m
1303	Soil Horizon (?)	0.30m	0.30m	0.35m
1304	Made Ground	0.30m	0.30m	0.10m
1305	Made Ground	0.30m	0.30m	0.35m
1306	Soil Horizon (?)	0.30m	0.30m	0.20m
1307	Natural	0.30m	0.30m	0.60m+
1401	Topsoil	0.30m	0.30m	0.35m
1402	Made Ground	0.30m	0.30m	0.35m

1403	Natural	0.30m	0.30m	0.20m
1404	Natural	0.30m	0.30m	0.10m+

Appendix B – Oasis Form

OASIS ID: aocarcha1-80363

Project details

Project name	Napier Lines Site, Woolwich, London Borough of Greenwich
Short description of the project	An archaeological watching brief was undertaken by AOC Archaeology Group on geo-technical site investigation works at the Napier Lines site, Woolwich, London Borough of Greenwich between the 12th and 14th July 2010. The watching brief was undertaken on soak-away test pits at the site and window slots on the site. The results of the watching brief indicated that significant horizontal truncation had taken place across the full area of the site, with only limited areas where possible in-situ soil horizons remained. Subsequently, two phases of made ground deposition had taken place. The first phased in associated with localised made ground deposition associated with 19th century military use of the site, while the second phase attributed to 20th century landscaping of the site. The only feature of archaeological interest identified was a possible 19th or 20th century brick culvert located in the central area of the site.
Project dates	Start: 12-07-2010 End: 14-07-2010
Previous/future work	No / Not known
Any associated project reference codes	30782 - Contracting Unit No.
Any associated project reference codes	NAR10 - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Other 15 - Other
Monument type	CULVERT Modern
Significant Finds	POTTERY Modern
Investigation type	'Watching Brief'
Prompt	Direction from Local Planning Authority - PPG16

Project location

Country	England
Site location	GREATER LONDON GREENWICH WOOLWICH Napier Lines Site, Woolwich, London Borough of Greenwich
Study area	2.00 Hectares
Site coordinates	TQ 4262 7791 51.4816324518 0.05413773432290 51 28 53 N 000 03 14 E Point
Height OD / Depth	Min: 41.92m Max: 43.66m

Project creators

Name of Organisation	AOC Archaeology
Project brief originator	Local Planning Authority (with/without advice from County/District Archaeologist)
Project design originator	RPS
Project director/manager	Melissa Melikian
Project supervisor	Paul Fitz
Type of sponsor/funding body	Developer

Project archives

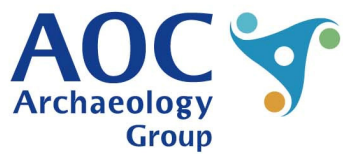
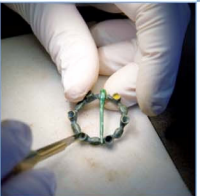
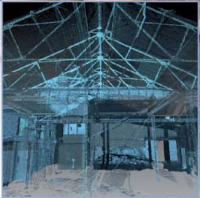
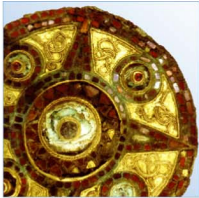
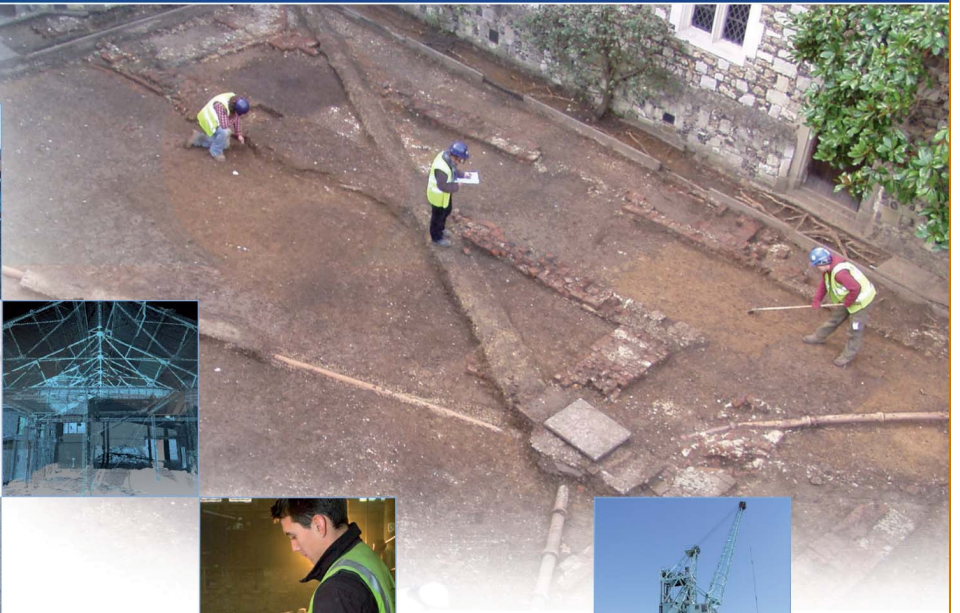
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Digital Archive recipient	LAARC
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Digital Media available	'Images raster / digital photography','Text'
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Paper Archive ID	NAR10
Paper Contents	'Ceramics','Glass'
Paper Media available	'Context sheet','Report','Section'
Paper Archive notes	To be held at AOC until ready to archive.

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	NAPIER LINES SITE, WOOLWICH: AN ARCHAEOLOGICAL WATCHING BRIEF REPORT
Author(s)/Editor(s)	Ives, R. and Clarke, C.
Date	2010
Issuer or publisher	AOC Archaeology
Place of issue or publication	London
Description	A4 text, 4 illustrations, 27 pages bound between plastic covers

Entered by Chris Clarke (chris.clarke@aocarchaeology.com)
Entered on 29 July 2010



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