

An Archaeological Evaluation at Pimlico School, Lupus Street, Pimlico

Site Code: PIM 08

Central National Grid Reference: TQ 2945 7819

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Pre-Construct Archaeology Limited, May 2008

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CONTENTS

1	ABSTRACT	1
2	INTRODUCTION	2
3	PLANNING BACKGROUND	5
4	GEOLOGY AND TOPOGRAPHY	6
5	ARCHAEOLOGICAL AND HISTORICAL BACKGROUND	7
6	ARCHAEOLOGICAL METHODOLOGY.....	8
7	ARCHAEOLOGICAL PHASE DISCUSSION	9
8	INTERPRETATIONS AND CONCLUSIONS.....	18
9	ACKNOWLEDGEMENTS.....	19
10	BIBLIOGRAPHY	20

Appendices

Appendix 1	Context Index	21
Appendix 2	Site Matrix	24
Appendix 3	Oasis Data Collection Form	25
Appendix 4	Finds Assessment-Pottery, Glass and Clay Tobacco Pipe	28
Appendix 5	<i>Pimlico School, Geoarchaeological Assessment Report, C.P. Green ArchaeoScape</i>	34

Illustrations

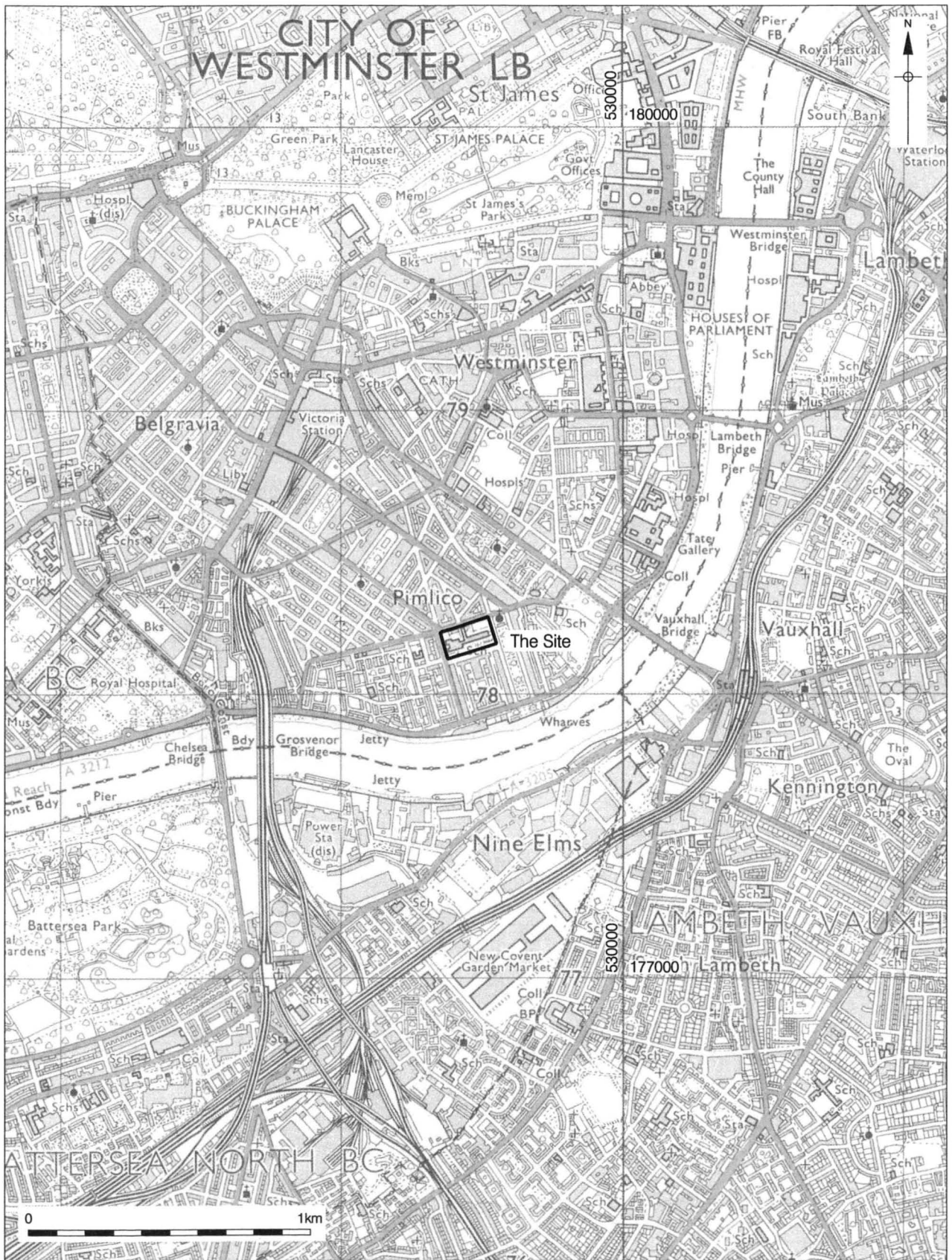
Figure 1	Site Location
Figure 2	Trench Locations
Figure 3	Trench 1 Plan
Figure 4	Trench 2 Plan
Figure 5	Trench 3 Plan
Figure 6	Trench 4 Plan
Figure 7	Sections 3, 4, 7 and 10
Figure 8	Section 9

1 ABSTRACT

- 1.1 This report details the results of an archaeological evaluation at Pimlico School, Lupus Street, Westminster City Council, undertaken by Pre-Construct Archaeology Ltd. on behalf of Bouygues UK. The project was managed by Helen Clough and supervised by Rebecca Lythe, both of Pre-Construct Archaeology Ltd., and monitored by Diane Walls of English Heritage (GLAAS) on behalf of Westminster Council.
- 1.2 Four trenches were opened during the evaluation. Tarmac formed the modern ground surface in the locations of Trenches 1, 3 and 4, whilst Trench 2 was situated in a grassed area.
- 1.3 Laminated sand and gravel forming part of the Kempton Park Sequence was observed in the base of all four trenches. A layer of natural silty clay "brickearth", probably forming part of the Langley Silts, sealed this, which had in turn been truncated by a number of natural features in Trenches 1 and 2. A layer, initially interpreted as bioturbated alluvium during the evaluation, sealed the natural features in Trenches 2, 3 and 4. A borehole survey, undertaken by ArchaeoScape of Royal Holloway University, later suggested the deposit represents an episode of soil formation in the form of a bioturbated, truncated B-horizon. An 18th century post-medieval ground-raising layer, observed in all four trenches, was seen above. 18th to 19th century archaeological features, indicative of nearby occupation, truncated the dump layer in Trenches 1 and 4.

2 INTRODUCTION

- 2.1 Pre-Construct Archaeology Ltd. conducted an archaeological evaluation within the grounds of Pimlico School, Lupus Street, City of Westminster, in advance of redevelopment of the school. The evaluation was conducted between 3rd and 28th January 2008 on behalf of Bouygues UK.
- 2.2 The site is bounded to the north by Lupus Street, to the south by Chichester Street, to the east by George's Square and to the west by Claverton Street.
- 2.3 The National Grid Reference of the site is TQ 2945 7819.
- 2.4 The site was given the code PIM 08
- 2.5 The project was monitored by Diane Walls of English Heritage, project managed by Helen Clough and supervised by the author.



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Figure 1
 Site Location
 1:20,000 at A4

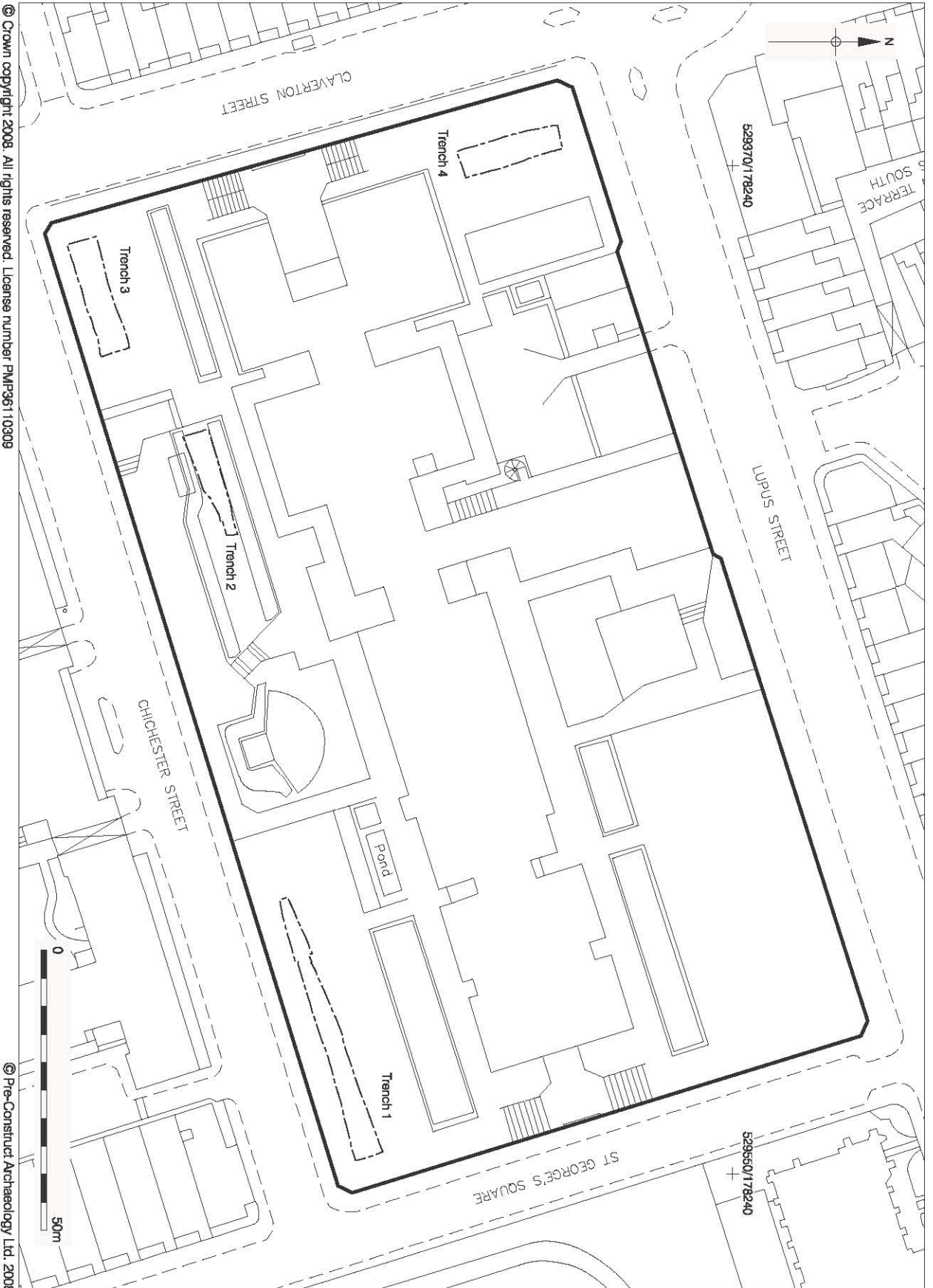


Figure 2
Trench Location
1:1,000 at A4

3 PLANNING BACKGROUND

- 3.1 In November 1990 the Department of the Environment issued Planning Policy Guidance Note 16 (PPG16) "Archaeology and Planning", providing guidance for planning authorities, property owners, developers and others on the preservation and investigation of archaeological remains.
- 3.2 In short, government policies provide a framework which:
- Protect Scheduled Ancient Monuments
 - Protect the settings of these sites
 - Protect nationally important un-scheduled ancient monuments
 - Has a presumption in favour of in situ preservation
 - In appropriate circumstances, requires adequate information (from field evaluation) to enable informed decisions
 - Provides for the excavation and investigation of sites not important enough to merit *in situ* preservation
- 3.3 In considering any proposal for development, the local planning authority will be mindful of the policy framework set by government guidance, in this instance PPG16, of existing development plan policy and of other material considerations.
- 3.4 Chapter 9 of The Westminster City Council's Unitary Development Plan (UDP) contains several clauses in relation to archaeological practice within the Borough. This includes the following:

12 Archaeology: policy DES 11

12a Developments in an Area of Special Archaeological Priority:

What measures are proposed:

To preserve *in situ* all archaeological remains of national importance

To properly evaluate, and where practicable preserve *in situ* remains of local archaeological value

For those archaeological remains for which *in situ* preservation is inappropriate, full investigation, recording and an appropriate level of publication by a reputable investigating body

- 3.5 In accordance with the conditions laid down in the Westminster City Council's UDP, a programme of evaluation by trial trenching was designed¹ and carried out in consultation with Diane Walls of English Heritage.

¹Clough H., 2007.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

4.1.1 According to the British Geological Survey of England and Wales, the site is located on Kempton Park Gravel, a Thames terrace deposit created during the Devensian Glaciation. A geotechnical investigation undertaken in January 2007 by Robinson Geo-Engineering confirmed this, concluding that a well-developed, weathered clayey silt (henceforth termed "brickearth") sealed the gravel. It probably forms part of the Langley Silt, a partially water-lain, partially wind-blown sediment (Green, 2008, this report). The results of this report suggest that the upper portion of the layer subsequently formed a palaeo-land surface, hence the presence of a possible soil horizon. This may have formed during the early to mid Holocene, when the site was located on a dry island within a braided river system formed by the Thames and its tributaries. Over time, the river regressed to its current position and the Pimlico area was reclaimed from the marsh through artificial ground raising and consolidation (Clough 2007).

4.2 Topography

4.2.1 Pimlico School is set in a large, 3m deep cut, created specifically for the construction of the building. Despite the presence of such a deep truncation, the geotechnical survey suggested the underlying "brickearth" had not been disturbed. The results of the archaeological fieldwork confirmed this, the only exception being Trench 2, where the bulk of the underlying stratigraphy had been destroyed by a 20th century concrete intrusion. Only a small, un-truncated section was found in the western end, which measured 1.8m north-south by 2m east-west.

4.2.2 The base of the construction cut for the school is generally flat, with the exception of access routes in the form of stairs and ramps, and a grassed area to the south, landscaped at some point after the building's construction. The grassed area, where Trench 2 was located, slopes steeply from south to north. Trenches 1, 3 and 4 were all situated on tarmac playgrounds, which were virtually flat.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 Unless referenced otherwise, the archaeological and historical background information cited below was obtained from the Archaeological Data Service's online search (<http://ads.ahds.ac.uk/catalogue/search>).

5.2 PREHISTORIC

5.2.1 A Mesolithic tranchet axe was recovered from the River Thames in Pimlico.

5.2.2 Prehistoric remains of unspecified date were unearthed during excavations at Vauxhall Bridge Road, to the south of the site. At Warwick Way, just over half a kilometre northwest, flint artefacts, including a flint axe, were recovered. A flint artefact was also found at Elverton Street, just under 1 kilometre to the northeast.

5.2.3 Bronze Age remains were unearthed during excavations at Rochester Row Police Station.

5.3 ROMAN

5.3.1 A Roman potsherd was found during an archaeological investigation at 1 Elverton Street, along with further Roman remains at Assets House, 17 Elverton Street. Evidence for Roman occupation in the area is otherwise lacking.

5.4 SAXON & MEDIEVAL

5.4.1 Some evidence of Saxon occupation has been found in the vicinity. This includes the remains of a Saxon bridge at Warwick Way and the remnants of a beacon at Regency Place.

5.4.2 Archaeological evidence of medieval activity was found at Vincent Square. A medieval animal burial was unearthed during excavations at 1 Elverton Street, along with a medieval midden. During an investigation at Assets House, a medieval pit was found, along with several animal burials, some of which contained the articulated remains of dogs and horses.

5.4.3 The earliest phase of Neyte Manor House, situated at the junction of Warwick Way and Alderney Street is also medieval in date, later phases being added during the post-medieval period.

5.5 POST-MEDIEVAL

5.5.1 Post-medieval dumping and demolition deposits were found at 1 Elverton Street, along with the remains of a post-medieval plough soil, midden and ditch. A palaeochannel, in-filled during the post-medieval period, was found at Westminster Under School, Vincent Square, along with dump layers of similar date. Post-medieval plough soil was also found during an archaeological evaluation at 60 Vauxhall Bridge Road, along with the remains of a post-medieval building. At Assets House, evidence of post-medieval quarrying and dumping was recorded, along with the foundations of a contemporary wall and sand pit.

5.5.2 Late post-medieval residences form the bulk of extant buildings in the immediate vicinity of the site, the majority of which are listed on the Greater London Sites and Monuments Record. They are too numerous to cite here, the majority being residential, predominantly terraced houses of 18th to 19th century date. Other buildings of particular note include churches on St Georges Square, Rochester Row, Vauxhall Bridge Road and Warwick Square, a military battery and exhibition hall on Vincent Square, a public house located at 1 Lupus Street, a police station and magistrates court at Rochester Row and piers leading into the River Thames at Page Street.

5.5.3 18th and 19th century industrial remains were found during archaeological work conducted at 1-6 Gillingham Mews, 119-128 Wilton Road. This included part of the 18th century Chelsea Waterworks Canal and a 19th century osier bed.

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 In accordance with the Written Scheme of Investigation (Clough 2007), the trenches were arranged to fully investigate the underlying drift geology and the presence or absence of significant archaeological remains across the site.
- 6.2 A total of four archaeological trial trenches were excavated, the dimensions of which, at ground level, were:
- | | |
|----------|----------------------------------|
| Trench 1 | 5m north-south x 45m east-west |
| Trench 2 | 5m north-south x 20m east-west |
| Trench 3 | 5m north-south x 20m east-west |
| Trench 4 | 18.5m north-south x 5m east-west |
- 6.3 The trenches were machine excavated to a depth of 1.2m below the current ground surface, at which point they were stepped in by 1.5m and a 1.8m wide slot dug along the base to a maximum total depth of 2.4m. Stepping was necessary for health and safety reasons in order to enable safe access to the potential buried archaeological horizons, located at an approximate depth of 2m below modern ground level. Sondages over 1.2m in depth were not entered and backfilled immediately after recording.
- 6.4 Tarmac formed the modern ground surface in the location of Trenches 1, 3 and 4, which were initially opened using a 360 mechanical excavator fitted with a breaker. Once the tarmac had been penetrated, the breaker was replaced with a ditching bucket and excavation continued in spits through the 19th century made ground until natural sediment was reached. Trench 2 was located in a grassed area, and as a consequence the ditching bucket could be used from the outset. All machining was conducted under the supervision of the attendant archaeologist.
- 6.5 One or more representative sample sections, each 2.5m wide, were cleaned and recorded in each trench. The base of each trench was also hand-cleaned before recording, along with any archaeological features. The latter were half sectioned or slotted in order to obtain dating evidence prior to recording.
- 6.6 The recording systems employed during the evaluation were fully compatible with those most widely used elsewhere in London, that is those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeology Service (MoLAS 1994). Individual descriptions of all archaeological strata and features excavated and exposed were entered onto pro-forma recording sheets. All plans and sections of archaeological deposits were recorded on polyester based drawing film, the plans being drawn at a scale of 1:20 or 1:50 and the sections at 1:10. The OD heights of all principal strata were calculated and indicated on the appropriate plans and sections. A full photographic record of the investigation was prepared, including both black and white prints and colour transparencies on 35mm film.
- 6.7 Levels were taken from three Temporary Bench Marks (TBMs 1 to 3) established on the site, the first of which had a value of 2.87m OD, the second a value of 4.04m OD and the third a value of 2.68m OD. The TBMs were all traversed from an Ordnance Survey benchmark on the northern side of Dolphin Square between Rodney House and Duncan House on the southern side Chichester Street. The benchmark had a value of 5.44m OD. TBM 1 was located to the immediate east of Trench 2, on top of a bench. It was used to take levels on Trenches 2 and 3. TBM 2 was located on a wall in the southeast corner of the playground in the southwest corner of the school grounds and used to level Trench 1. TBM 3 was located to the immediate west of Trench 4 and used to take levels on it. The trenches were located using a total station and tied into the Ordnance Survey grid.

7 ARCHAEOLOGICAL PHASE DISCUSSION

7.1 Phase 1 – Quaternary Thames Terrace Deposits

7.1.1 The earliest deposit encountered in all four trenches consisted of a layer of gravel, termed context [25] / [31] / [33] / [32] in Trench 1, [20] in Trench 2, [8] in Trench 3 and [67] in Trench 4. The gravel was found in the base of deeper sondages, excavated in one end of each trench (see Figure 3), and also in several places along the length of Trench 1, where the overlying “brickearth” was thinner. The layer consisted of loose, mid reddish yellow silty sand, clast supported by very frequent inclusions of sub-angular to sub-rounded flint pebbles. Its coarse, well-sorted nature suggests accumulation in a high-energy fluvial facies and it was therefore interpreted as a deposit of Kempton Park Terrace gravel, presumably laid down by the Thames during the Devensian Glaciation. The layer was found at a maximum height of 1.55m in Trench 1, 0.92m OD in Trench 4, 0.83m OD in Trench 3 and 0.14m OD in Trench 2. This suggests the site's palaeo-topography sloped towards the south-central portion, where Trench 2 was located, perhaps due to the subsequent presence of a later channel of the River Thames responsible for sculpting the layer during a later period. The area in the vicinity of Trench 1 would therefore have been relatively elevated, forming a possible gravel eyot within the river.

7.1.2 Sealing the gravel in Trench 1 was a deposit of fine-grained sandy silt, termed context [24]. Its fine-grained nature suggested a considerable drop in the fluvial system's energy levels, sufficient to enable fine sand and silt particles to settle out of solution. It is therefore indicative of a lower energy fluvial system, indicating a drop in the rate of flow of the Thames. A similar layer, context [7], was observed in Trench 3 and is presumed to have formed in the same way. In Trench 1, a layer of laminated silty sand, termed context [23], sealed the clayey silt. This suggests an increase in the rate of flow, sufficient to enable the transport of coarser sand-sized particles, indicating a successive increase in the energy levels of the fluvial system. The layers were also interpreted as forming part of the Kempton Park Gravel.

7.1.3 The deposits described above were sealed by mid brownish yellow sandy clayey silt in all four trenches, termed context [22] in Trench 1, [19] in Trench 2, [13] in Trench 3 and [58] in Trench 4. The layer was a maximum of 0.65m thick in Trench 2 and a minimum of 0.40m thick in Trench 1. It was interpreted as a deposit of “brickearth”, probably representing Langley Silt, a heterogeneous deposit of water laid and windblown sediment. The top of the layer was observed at a height of 2.05m OD in Trench 1, 1.40m OD in Trench 4, 1.30m in Trench 3 and 0.81m OD in Trench 2, suggesting the palaeo-topography sloped downwards towards the south-central portion of the site.

7.2 Phase 2- Undated Natural Features and Layers

7.2.1 An undated linear feature, termed context [29], was unearthed in the eastern end of Trench 1, truncating the “brickearth”. The dimensions of the feature were 1.65m north-south by 1.40m east-west, with a depth of 0.41m. It was filled by a deposit of light greyish blue silty clay, which probably accumulated as a result of natural in-washing. The feature was interpreted as a probable natural gully that in-filled as a result of natural processes.

7.2.2 A circular feature, context [34], was also noted in the western end of Trench 1. The feature was 0.40m in diameter and 0.40m deep, and had been backfilled with a humic deposit of light greyish brown silty clay, context [35]. Excavation revealed a highly irregular base indicative of root action. It was therefore interpreted as the product of bioturbation and was not deemed to be archaeologically significant.

7.2.3 An irregular feature, termed context [9], was investigated in Trench 3. The feature was 1.52m north-south by 0.59m east-west, having been truncated to the west by a modern intrusion, and was 1.04m deep. It had been backfilled with a deposit of dark grey sandy clay, which most-likely accumulated as a result of gradual in-washing. The feature was deemed to be a probable natural undulation, possibly representing a gully or tree-throw.

- 7.2.4** A layer of mid bluish grey clayey silt, context [18], was observed in the base of a sondage excavated in the western end of Trench 2. It was 0.51m thick, the top being at a level of 1.28m OD. During the evaluation, the deposit was initially interpreted as a layer of bioturbated alluvium, indicative of encroachment by the River Thames. The presence of such a thick layer of potential alluvium in this location was not surprising given the fact that the palaeo-topography of the site sloped downwards towards the trench. It could not be sampled for health and safety reasons as there was not enough space to step the sides of the trench to a sufficient depth given the frequency of modern concrete intrusions. Consequently, a borehole survey was requested by the Archaeological Advisor (see Appendix 5). A similar though relatively thin layer of mid bluish grey clayey silt with occasional mid brownish-yellow mottles was also observed in Trenches 3 and 4. It was respectively termed contexts [12] / [2] / [15] in the former and [63] in the latter. The deposit was 0.20m thick in Trench 3, where it was observed at a height of 1.60m OD, and 0.30m thick in Trench 4, where it was found at a level of 1.67m OD. It was also initially interpreted as being of possible alluvial origin during the evaluation.
- 7.2.5** The results of the borehole survey, undertaken by ArchaeoScape of Royal Holloway University (Appendix 5), suggest the deposits described above are best interpreted as the remnants of a possible soil horizon, indicative of a once stable land surface (Green, 2008, this report). This suggests the site may therefore have once formed part of an elevated gravel eyot within the Thames during the early to mid Holocene. This would have created a relatively stable land surface within an otherwise marshy or alluvial environment, enabling the evolution of a soil profile.
- 7.2.6 Phase 3- 18th Century Ground Consolidation**
- 7.2.7** The naturally created deposits described previously were all sealed by a thick layer of mid to dark grey sandy silt, which contained occasional inclusions of 18th century pottery, clay pipe and animal bone. The layer was termed [21] in Trench 1, [17] in Trench 2, [1] / [11] / [14] in Trench 3 and [57] in Trench 4 and is presumed to underlie the entire site. It was a maximum of 1.23m thick in Trench 2 and a minimum of 0.46m thick in Trench 4, the top of the deposit being observed at a maximum height of 2.90m OD in Trench 1 and a minimum level of 2.31m OD in Trench 4. It was interpreted as a ground consolidation, raising and levelling layer, dumped during the 18th century in order to reclaim land from the marshy environment created by the nearby Thames.
- 7.3 Phase 4- Late Post-Medieval Occupation Activity**
- 7.3.1** After the land around the site had been reclaimed from the river, a phase of archeological activity ensued. A number of apparently disparate posts, postholes and small pits were observed within Trenches 1 and 4. In Trench 1, three driven stakes with diameters of 0.20m to 0.30m were observed, termed contexts [26], [42] and [39], the latter being within rectangular post-pit [28]. A similar rectangular posthole, context [36], was also observed to the west, which may be related to [28]. In Trench 4, a small ovoid pit, context [54], was observed, which measured 1.35m north-south by 0.49m east-west and was 0.30m deep. A small circular pit, context [56], was present to the south. It had a diameter of 0.55m and a depth of 0.21m. A similarly sized rectangular pit, context [60], was also observed to the north. The majority of the features cited above contained dating evidence in the form of pottery and clay pipe fragments, indicative of an 18th century date. They did not form obvious alignments and their functions were therefore difficult to ascertain. They may have formed parts of fence-lines or timber outhouses, an interpretation that is pure speculation given the nature of the evidence.
- 7.3.2** In the southern end of Trench 4, a row of three potential postholes on a north-south alignment was observed. The postholes were termed [73], [75] and [77] and had been respectively in-filled with humic rich, silty clay fills [74], [76] and [78]. Each was 0.15m in diameter and 0.15m to 0.08m deep. It is possible that they may represent the remains of a structure such as a fence-line. However, the ephemeral nature of the features suggests they could be natural in origin, perhaps representing root holes; their apparent alignment may be coincidental.

- 7.3.3 A timber construction, termed structure [79], was observed in the northern section of Trench 4, truncating ground consolidation layer [21]. The structure had been partially truncated by a modern intrusion to the south, a later ditch to the north and a construction cut for a wall to the east. Its dimensions as seen were 3.75m north-south by 0.51m east-west, the top of the timbers being observed at a height of 1.46m OD. It consisted of a rectangular construction cut, context [52], which contained two wooden planks, contexts [61] and [62], set "on-edge", over-lapping each other by 20 mm. They were supported by a row of four regularly spaced driven stakes, contexts [68], [69], [70], [71] and [72], which had diameters of 0.15m. The structure was interpreted as a timber lined drain. It presumably dates to the 18th century, as it truncates an 18th century dump layer and is truncated by a ditch of probable 18th century date.
- 7.3.4 Truncating timber drain [79] to the north was ditch [44], cut from a height of 2.26m OD through ground consolidation layer [21]. It was 1.84m wide, 1.27m deep and orientated east-west, continuing beyond the western limit of excavation to the west and being truncated by a later construction cut to the east. The feature had been backfilled with a dumped deposit of dark grey sandy silt, context [43], that contained occasional pottery, clay pipe and CBM indicative of an 18th century date. It ran parallel with modern-day Lupus Street to the north and was therefore interpreted as an 18th century ditch forming a land boundary, perhaps representing a property division.
- 7.3.5 The ditch had been partially truncated to the north by a large circular pit, context [46]. It was 2.02m in diameter and 0.54m deep and contained backfill [45], a deposit of sandy silt with occasional inclusions of 18th century pottery, clay pipe and animal bone. It is possible that the feature may have functioned as a rubbish pit for the disposal of domestic waste.
- 7.3.6 Ditch [44] was also truncated by construction cut [49] to the east. This construction cut was over 0.35m wide and had been created in order to build masonry wall [47], revealed in the west facing section of Trench 4. The wall was orientated north-south within cut [49], continuing beyond the limit of excavation to the north and the eastern limit of excavation to the south (see Figure 3), the top being at a height of 1.92m OD. The lower three courses at the northern end were constructed from yellow and purple fabric bricks indicative of an 18th to 19th century date and the upper three courses constructed from squared limestone and sandstone blocks, whilst the southern end was constructed entirely from bricks. Identical mortar was used throughout suggesting the stone and brick portions were built in one phase. The structure was interpreted as a foundation for the outer wall of an 18th to 19th century residence.
- 7.3.7 The upper courses of the wall foundation were presumably robbed away after the structure fell out of use, hence the presence of probable robber cut [80]. Backfills [65], [64] and [66] were then respectively dumped upon one another within the rob cut. These contexts were observed in the west-facing section of Trench 1 only, the rob cut being over 2.5m long, continuing beyond the limits of excavation to the north and south and 0.25m to 0.40m deep. The top was observed at a level of 2.02m OD.
- 7.3.8 A yellow fabric brick culvert, context [38], was observed, running east-west across the centre of Trench 1, continuing beyond the northern and southern limits of excavation. It was 1.10m wide and over 0.40m deep, the top being at a height of 1.53m OD. The construction cut, context [41], was 1.25m wide, cut from a level of 2.75m OD, and had been backfilled with [40], a deposit of mid reddish yellow silty clay with lenses of dark grey silt, thought to represent redeposited "brickearth" mixed with dump layer [21]. The drain itself was deemed to be 18th to 19th century in date on account of the bricks used in its construction. It therefore seems probable that the structure serviced contemporary 18th to 19th century residences.

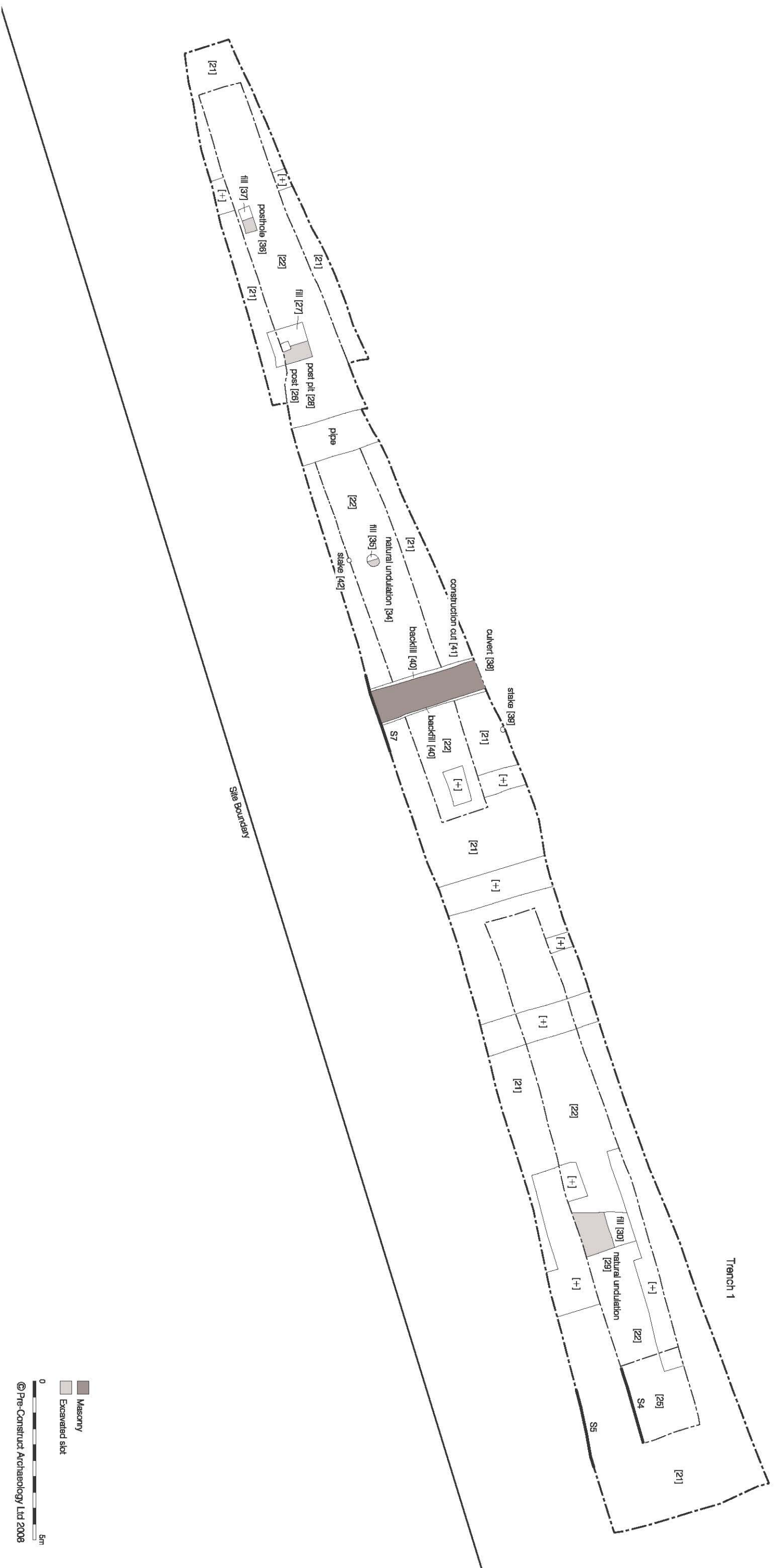
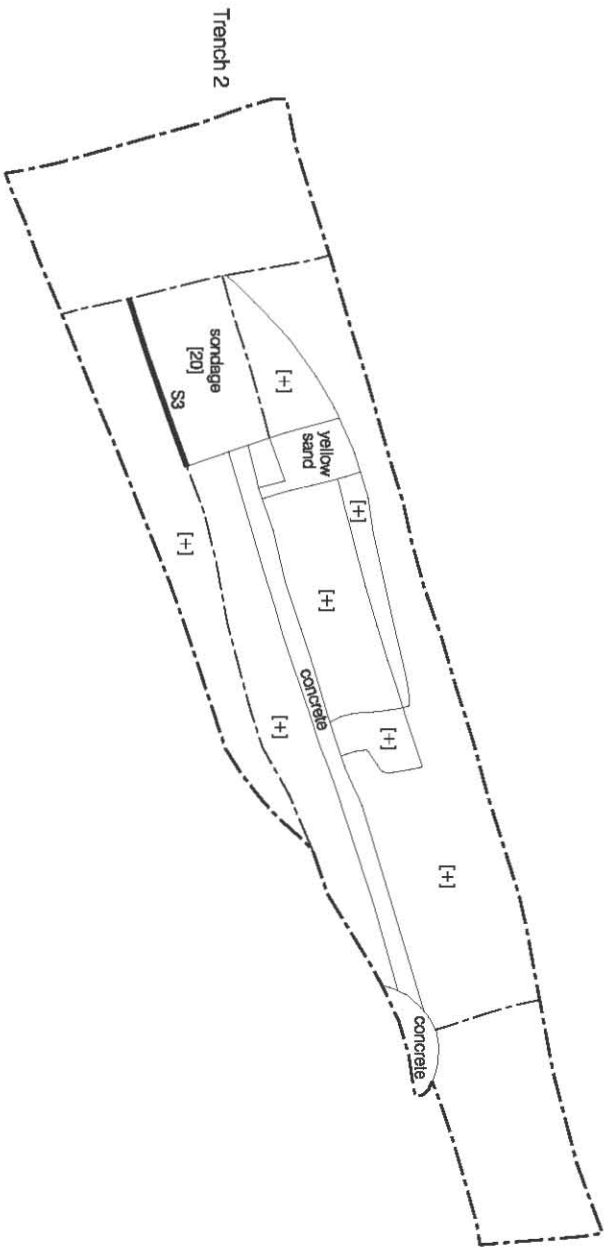
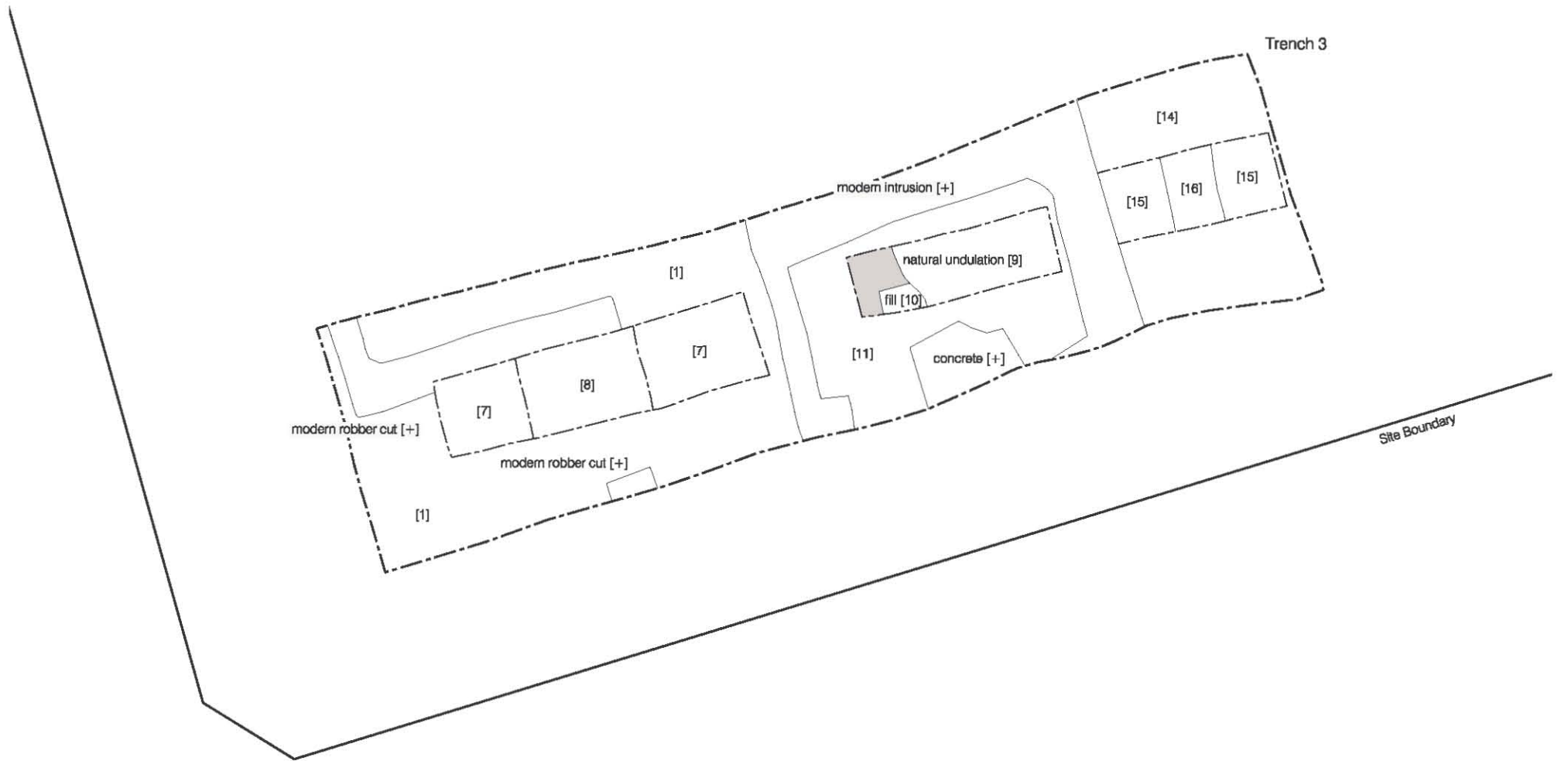


Figure 3
Trench 1
1:125 at A4



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Figure 4
Trench 2
1:125 at A4



■ Excavated slot

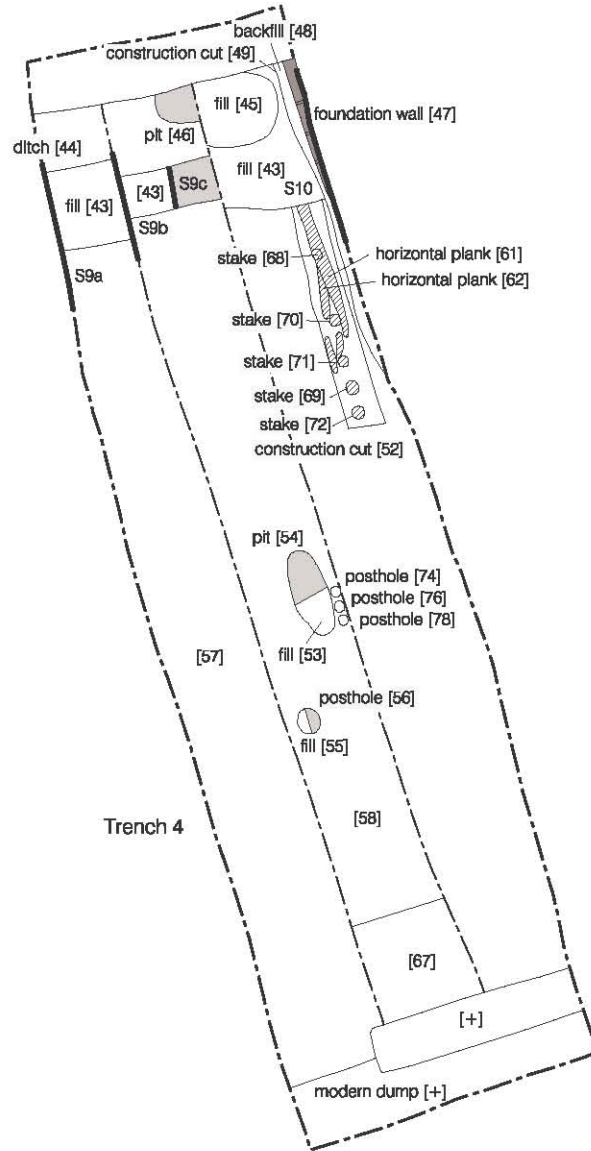
0 5m


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Figure 5
Trench 3
1:125 at A4



Site Boundary



-  Timber
-  Masonry
-  Excavated slot

0 5m

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Figure 6
Trench 4
1:125 at A4

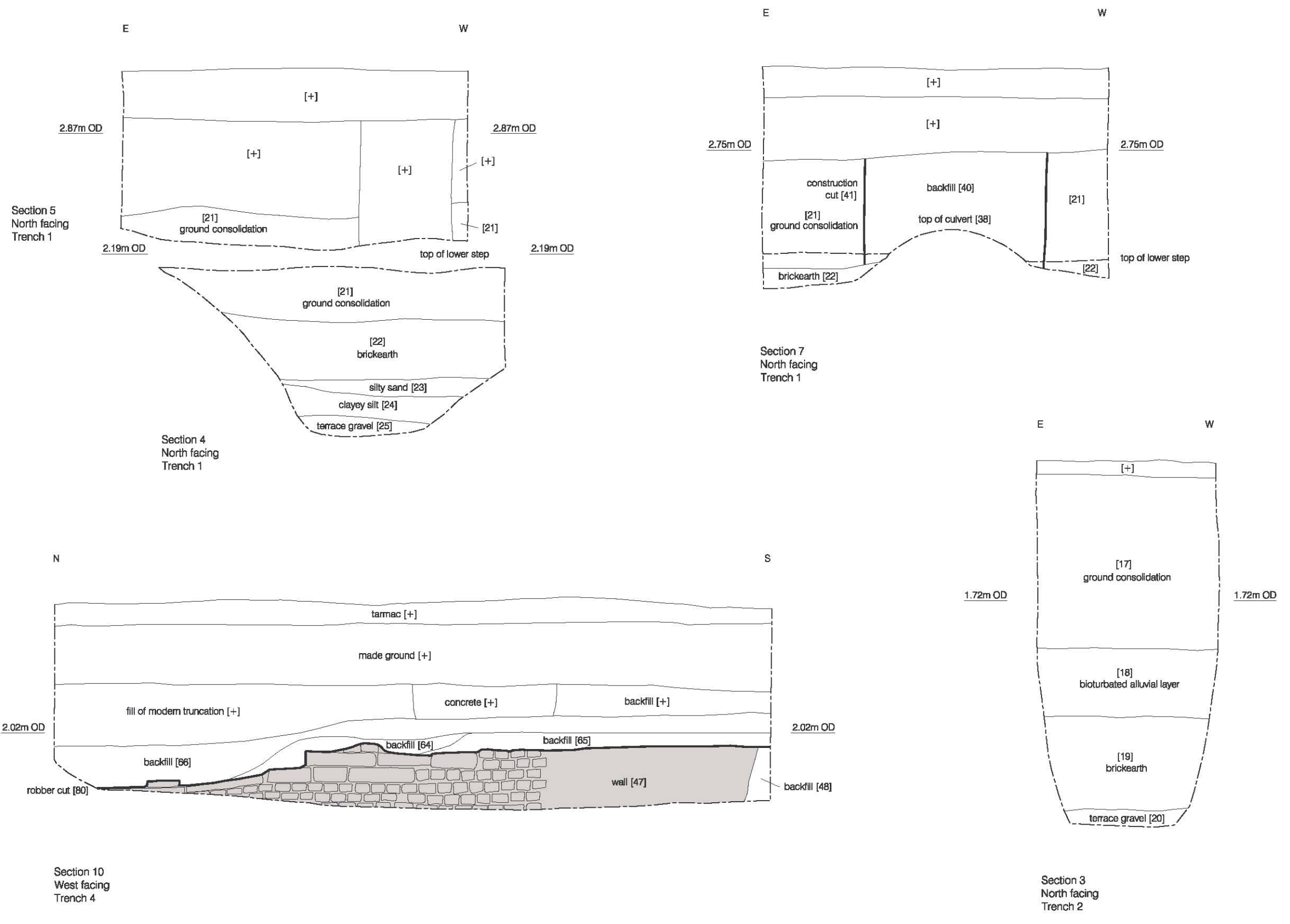
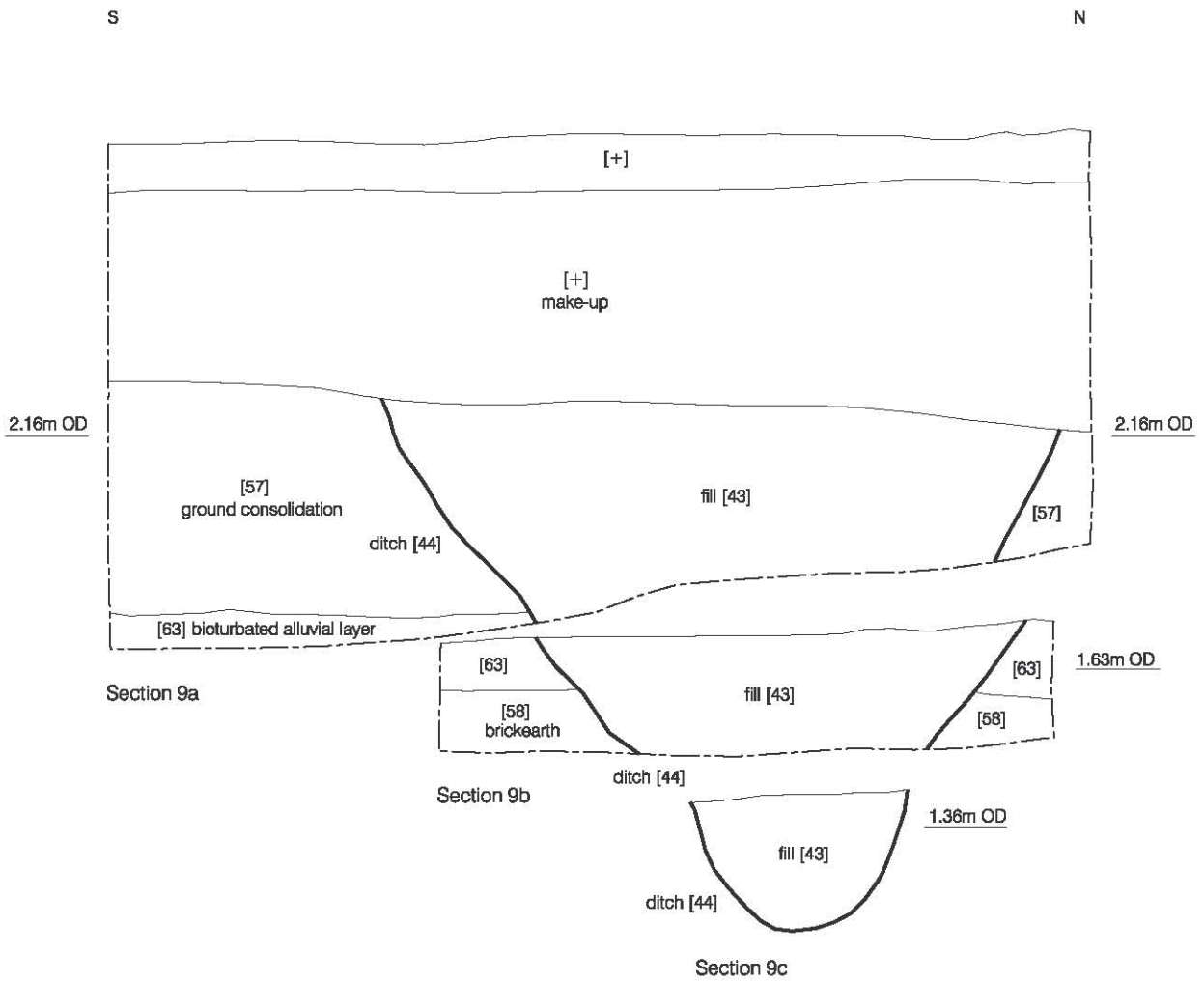


Figure 7
 Sections 3, 4, 7 & 10
 1:30 at A3



Section 9
East facing
Trench 4



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Figure 8
Section 9
1:20 at A4

8 INTERPRETATIONS AND CONCLUSIONS

- 8.1 The principal objectives of the archaeological evaluation were to assess the nature of the underlying drift geology and to determine the presence or absence of archaeological activity of any period. These objectives were achieved and the results are summarised below.
- 8.2 A deposit of natural terrace gravel, forming part of the Kempton Park sequence, was found in all four trenches and is therefore assumed to underlie the entire site. A thick layer of weathered "brickearth", probably representing Langley Silts, sealed it. This was truncated by a number of natural features, which were in turn sealed by the remnants of a possible soil horizon, indicative of a once stable land surface. These layers probably formed part of a gravel island within a braided river system during the early to mid Holocene period.
- 8.3 The natural deposits were sealed by an 18th century dump layer, observed in all four trenches. The dump layer probably represents a ground-raising episode, undertaken in order to reclaim land from the marshy, waterlogged environment created by the nearby river. After the ground surface had been artificially raised, creating a dry surface, a phase of archaeological activity ensued. Dating evidence recovered suggests this activity dates to the 18th century or later.
- 8.4 A number of 18th century posts, postholes and post pits were recorded in Trenches 1 and 4. Most did not appear to form alignments or structures, with the exception of two rows of postholes. The first consisted of three "postholes" on a north-south alignment in the south-central portion of Trench 4. Whilst they may have formed part of a structure such as a fence line, their small, shallow nature suggested creation by tree roots. The second consisted of five postholes, also on a north-south alignment in the northeast section of the same trench, which formed part of a timber drain (Structure 79). They supported two horizontal planks, which formed the sides of the drain. Two small pits of unknown function were also uncovered in Trench 4.
- 8.5 An 18th to 19th century brick culvert was observed in the central portion of Trench 1, on a north-south alignment. The culvert presumably formed part of a drain, which probably serviced 18th to 19th century residences.
- 8.6 An 18th century ditch, orientated east-west, was observed in the northern end of Trench 4, running parallel with modern-day Lupus Street. The feature may form part of an old land boundary.
- 8.7 The ditch was truncated to the north by a large circular pit. The pit contained pottery suggestive of an 18th to 19th century date, accompanied by clay pipe and animal bone. It is possible that the feature may represent a rubbish pit backfilled with domestic waste.
- 8.8 The ditch was also truncated by the construction cut for a wall. The wall was orientated north-south and was observed in the east-facing section of Trench 4. It presumably formed part of a foundation for an 18th century building. The upper part had been robbed away after the building fell out of use.
- 8.9 No evidence of human activity pre-dating the 18th century was observed.

9 ACKNOWLEDGEMENTS

- 9.1 Pre-Construct Archaeology Ltd would like to thank Bouygues UK for commissioning the work and Diane Walls for monitoring the evaluation on behalf of English Heritage and Westminster City Council.
- 9.2 The author would like to thank Helen Clough for her project management and editing, Hayley Baxter for the illustrations and Jennie Fiddes and Chris Rees for their hard work and assistance with the fieldwork. The author would also like to thank Jem Rogers for the surveying and Rob Nicolson and Lisa Lonsdale for technical and logistical support.

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Westminster Council Unitary Development Plan

<http://www.westminster.gov.uk/environment/planning/unitarydevelopmentplan>

Appendix 1- Context Index

Context No.	Plan	Trench No.	Section / Elevation	Type	Description	Date	M OD Highest	M OD Lowest	Phase
1	Tr 3	Tr 3	1	Layer	Ground Consolidation Layer	18th Century	2.53	2.39	3
2	Tr 3	Tr 3	1	Layer	Bioturbated Layer	Natural	1.66	1.5	2
3	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
7	Tr 3	Tr 3	1	Layer	Silty Sand	Natural	1.75	1.56	1
8	Tr 3	Tr 3	1	Layer	Terrace Gravel	Natural	0.83	0.68	1
9	Tr 3	Tr 3	2	Cut	Cut of Natural Undulation	Natural	0.99	0.8	2
10	Tr 3	Tr 3	2	Fill	Fill of [9]	Natural	0.99	0.99	2
11	Tr 3	Tr 3	N/A	Layer	Ground Consolidation Layer	18th Century	2.52	1.84	3
12	Tr 3	Tr 3	N/A	Layer	Bioturbated Layer	Natural	1.6	1.6	2
13	Tr 3	Tr 3	N/A	Layer	Brickearth	Natural	1.3	1.25	1
14	Tr 3	Tr 3	N/A	Layer	Ground Consolidation Layer	18th Century	2.51	1.7	3
15	Tr 3	Tr 3	N/A	Layer	Bioturbated Layer	Natural	1.61	1.6	2
16	Tr 3	Tr 3	N/A	Layer	Brickearth	Natural	1.3	1.24	1
17	Tr 2	Tr 2	3	Layer	Ground Consolidation Layer	18th Century	2.63	2.6	3
18	Tr 2	Tr 2	3	Layer	Bioturbated Layer	Natural	1.28	1.27	2
19	Tr 2	Tr 2	3	Layer	Brickearth	Natural	0.81	0.81	1
20	Tr 2	Tr 2	3	Layer	Terrace Gravel	Natural	0.14	0.14	1
21	Tr 1	Tr 1	5	Layer	Ground Consolidation Layer	18th Century	2.9	2.85	3
22	Tr 1	Tr 1	5	Layer	Brickearth	Natural	2.05	1.89	1
23	Tr 1	N/A	4	Layer	Silty Sand	Natural	1.29	1.28	1
24	Tr 1	N/A	4	Layer	Clayey Silt	Natural	1.25	1.15	1
25	Tr 1	Tr 1	4	Layer	Terrace Gravel	Natural	1.03	1	1
26	Tr 1	Tr 1	6	Layer	Vertically Driven Stake	Timber	1.69	1.69	4
27	Tr 1	Tr 1	6	Fill	Fill of [28]	Late Post-Med	1.69	1.69	4
28	Tr 1	Tr 1	6	Cut	Cut of Post-Pit	Late Post-Med	1.69	1.12	4
29	Tr 1	Tr 1	8	Cut	Cut of Natural Undulation	Natural	1.55	1.42	2

Context No.	Plan	Trench No.	Section / Elevation	Type	Description	Date	M OD Highest	M OD Lowest	Phase
30	Tr 1	Tr 1	8	Fill	Fill of [29]	Natural	1.55	1.55	2
31	Tr 1	Tr 1	N/A	Layer	Terrace Gravel	Natural	1.03	1.03	1
32	Tr 1	Tr 1	N/A	Layer	Terrace Gravel	Natural	1.55	1	1
33	Tr 1	Tr 1	N/A	Layer	Terrace Gravel	Natural	1.36	1.36	1
34	Tr 1	Tr 1	N/A	Cut	Cut of Natural Undulation	Natural	1.53	1.44	2
35	Tr 1	Tr 1	N/A	Fill	Fill of [34]	Natural	1.53	1.53	2
36	Tr 1	Tr 1	N/A	Cut	Posthole	Late Post-Med	1.95	1.78	4
37	Tr 1	Tr 1	N/A	Fill	Fill of [37]	Late Post-Med	1.95	1.95	4
38	Tr 1	Tr 1	7	Masonry	Culvert	Late Post-Med	2.28	1.53	4
39	Tr 1	Tr 1	N/A	Timber	Vertically Driven Stake	Late Post-Med	1.52	1.52	4
40	Tr 1	Tr 1	7	Fill	Fill of [41]	Late Post-Med	2.75	2.7	4
41	Tr 1	Tr 1	7	Cut	Construction Cut for [38]	Late Post-Med	2.75	1.53	4
42	Tr 1	Tr 1	N/A	Timber	Vertically Driven Stake	Late Post-Med	2.06	2.06	4
43	Tr 4	Tr 4	9	Fill	Fill of [45]	Late Post-Med	2.26	2.26	4
44	Tr 4	Tr 4	9	Cut	Boundary Ditch	Late Post-Med	2.26	1.09	4
45	Tr 4	Tr 4	N/A	Fill	Fill of [46]	Late Post-Med	1.63	1.63	4
46	Tr 4	Tr 4	N/A	Cut	Rubbish Pit	Late Post-Med	1.63	1.09	4
47	Tr 4	Tr 4	10	Masonry	Wall Foundation	Late Post-Med	1.92	1.92	4
48	Tr 4	Tr 4	10	Fill	Fill of [49]	Late Post-Med	1.92	1.92	4
49	Tr 4	Tr 4	10	Cut	Construction Cut for [48]	Late Post-Med	1.92	1.63	4
50	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
51	Tr 4	Tr 4	N/A	Fill	Fill of [52]	Late Post-Med	1.46	1.46	4
52	Tr 4	Tr 4	N/A	Cut	Cut for Structure 79	Late Post-Med	1.46	1.21	4
53	Tr 4	Tr 4	12	Fill	Fill of [54]	Late Post-Med	1.35	1.35	4
54	Tr 4	Tr 4	12	Cut	Pit	Late Post-Med	1.35	1.16	4
55	Tr 4	Tr 4	11	Fill	Fill of [56]	Late Post-Med	1.54	1.54	4
56	Tr 4	Tr 4	11	Cut	Posthole	Late Post-Med	1.54	1.39	4

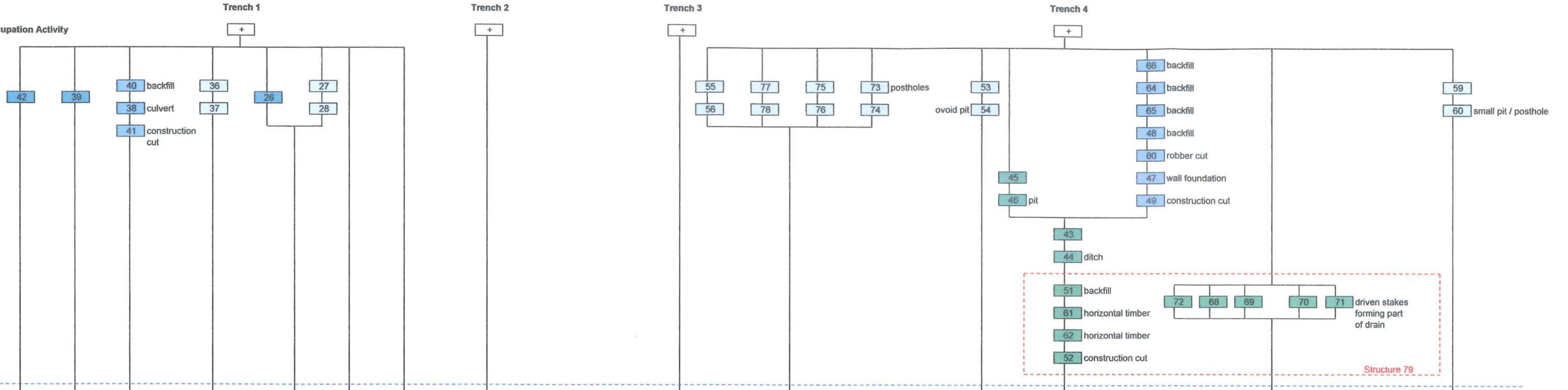
Context No.	Plan	Trench No.	Section / Elevation	Type	Description	Date	M OD Highest	M OD Lowest	Phase
57	Tr 4	Tr 4	9, 13	Layer	Ground Consolidation Layer	Late Post-Med	2.31	2.31	3
58	Tr 4	Tr 4	9, 13	Layer	Brickearth	Late Post-Med	1.4	1.4	1
59	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
60	N/A	N/A	N/A	N/A	NOT USED	N/A	N/A	N/A	N/A
61	Tr 4	Tr 4	N/A	Timber	Horizontal Plank	Late Post-Med	1.31	1.31	4
62	Tr 4	Tr 4	N/A	Timber	Horizontal Plank	Late Post-Med	1.21	1.21	4
63	Tr 4	Tr 4	9, 13	Layer	Bioturbated Layer	Natural	1.67	1.67	2
64	Tr 4	N/A	10	Fill	Fill of [80]	Late Post-Med	2.02	1.67	4
65	Tr 4	N/A	10	Fill	Fill of [80]	Late Post-Med	2.02	1.86	4
66	Tr 4	N/A	10	Fill	Fill of [80]	Late Post-Med	2.17	1.64	4
67	Tr 4	Tr 4	13	Layer	Terrace Gravel	Natural	0.92	0.92	1
68	Tr 4	Tr 4	N/A	Timber	Vertically Driven Stake	Late Post-Med	1.46	1.46	4
69	Tr 4	Tr 4	N/A	Timber	Vertically Driven Stake	Late Post-Med	1.46	1.46	4
70	Tr 4	Tr 4	N/A	Timber	Vertically Driven Stake	Late Post-Med	1.46	1.46	4
71	Tr 4	Tr 4	N/A	Timber	Vertically Driven Stake	Late Post-Med	1.46	1.46	4
72	Tr 4	Tr 4	N/A	Timber	Vertically Driven Stake	Late Post-Med	1.46	1.46	4
73	Tr 4	Tr 4	N/A	Fill	Fill of [74]	Late Post-Med	1.35	1.35	4
74	Tr 4	Tr 4	N/A	Cut	Posthole	Late Post-Med	1.35	1.25	4
75	Tr 4	Tr 4	N/A	Fill	Fill of [76]	Late Post-Med	1.35	1.35	4
76	Tr 4	Tr 4	N/A	Cut	Posthole	Late Post-Med	1.35	1.2	4
77	Tr 4	Tr 4	N/A	Fill	Fill of [78]	Late Post-Med	1.35	1.35	4
78	Tr 4	Tr 4	N/A	Cut	Posthole	Late Post-Med	1.35	1.27	4
79	Tr 4	Tr 4	N/A	Structure	Timber Drain	Late Post-Med	1.46	1.21	4
80	Tr 4	Tr 4	10	Cut	Robber Cut	Late Post-Med	2.17	1.62	4

Appendix 2- Site Matrix

Phase 4 Late Post-Medieval Occupation Activity

KEY

Post-Med Masonry
Post-Med Posthole / Stakehole / Small Pit
Driven Stake / Post
Post-Med Ditch / Large Pit
Timber Drain (Structure 79)



Phase 3 18th Century Ground Consolidation

KEY

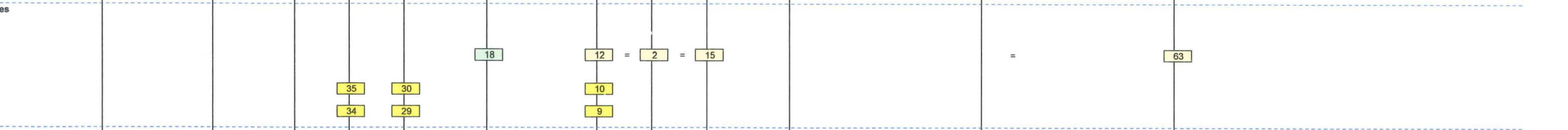
made ground



Phase 2 Undated Natural Features

KEY

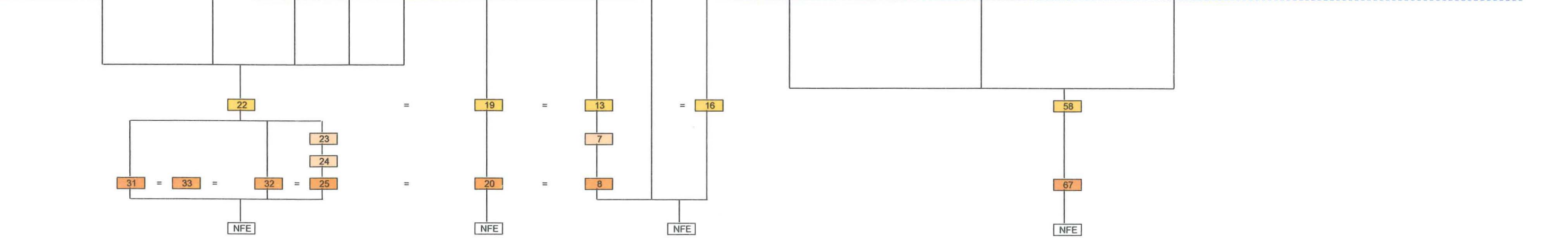
possible remnants of paleosol
natural features



Phase 1: Natural

KEY

Natural "brickearth" (Langley Silt)
Natural sandy silt (Kempton Park Gravel)
Natural gravel (Kempton Park Gravel)



Appendix 3 OASIS Form

Project details

Project name	An Archaeological Evaluation At Pimlico School, Lupus Street, Westminster City Council
Short description of the project	An archaeological evaluation was undertaken at Pimlico School, Lupus Street, Westminster City Council. Four archaeological trial trenches were created, in advance of redevelopment work. Natural stratigraphy in the form of terrace gravel sealed by brickearth was unearthed in each trench, sealed in turn by a late post-medieval dump layer, truncated by 18th to 19th century archaeological features.
Project dates	Start: 03-01-2008 End: 28-01-2008
Previous/future work	No / Yes
Type of project	Field evaluation
Site status	None
Current Land use	Community Service 1 - Community Buildings
Monument type	POSTHOLES Post Medieval
Monument type	CULVERT Post Medieval
Monument type	BOUNDARY DITCH Post Medieval
Monument type	PITS Post Medieval
Monument type	WALL Post Medieval
Significant Finds	POTTERY Post Medieval
Significant Finds	CLAY PIPES (SMOKING) Post Medieval
Significant Finds	ANIMAL BONE Post Medieval
Significant Finds	BRICK Post Medieval
Methods &	'Sample Trenches'

techniques

Development type Public building (e.g. school, church, hospital, medical centre, law courts etc.)

Prompt Direction from Local Planning Authority - PPG16

Position in the planning process After full determination (eg. As a condition)

Project location

Country England

Site location GREATER LONDON CITY OF WESTMINSTER WESTMINSTER
Pimlico School, Lupus Street

Postcode SW1V 3XX

Study area 17500.00 Square metres

Site coordinates TQ 2945 7819 51.4873240715 -0.135332030267 51 29 14 N 000
08 07 W Point

Height OD Min: 0.14m Max: 1.55m

Project creators

Name of Organisation Pre-Construct Archaeology Ltd

Project brief originator Pre-Construct Archaeology Ltd

Project design originator Helen Clough

Project director/manager Helen Clough

Project supervisor Rebecca Lythe

Type of sponsor/funding body Developer

Name of sponsor/funding body	Bouygues UK
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Evaluation at Pimlico School, Lupus Street, Westminster City Council
Author(s)/Editor(s)	Lythe, R
Date	2008
Issuer or publisher	Pre-Construct Archaeology
Place of issue or publication	Brockley, London
Description	A4 ring-bound report with a blue cover
Entered by	Rebecca Lythe (rlythe@pre-construct.com)
Entered on	1 February 2008

Appendix 4 Finds Assessments

Glass Assessment (PIM08)

Chris Jarrett

Introduction

A small sized assemblage of glass (five fragments and none are unstratified) was recovered from the excavation. The assemblage contains unabraded, fragmentary items and probably represents secondary and tertiary deposition conditions. The forms could be identified and date to between the mid 17th and 19th centuries. The information was entered onto an Access database.

Vessel types

Bottle

One fragment of dark green glass, kicked base probably from a mallet type wine bottle dated to the mid 18th century.

Bowl or lid

One fragment of pale green/clear glass, with a rolled rim dated to the 17th century.

Window glass

One fragment of pale green window glass, ?17th century.

Two fragments of pale greenish blue window glass, 19th-20th century.

Distribution

Table 3 shows the contexts the glass was found in, the number of fragments and a spot date for the deposit.

Context	Fragment count	Vessel types	Spot date
1	2	Window glass	19 th -20 th century
43	1	Bowl or lid	?17 th century
47		Wine bottle (?mallet), window glass	Mid 18 th century

Table 3: OL-08107. Glass spot dating index.

Significance, potential, research questions and recommendations for further work

The glass has little significance at a local level, but the mid 17th century bowl or lid is an uncommon find. The glass has some potential to date the features it was found in. None of the glass requires illustration. There are no research questions or recommendations for further work.

ASSESSMENT OF THE CLAY TOBACCO PIPES (PIM 08)

Chris Jarrett

Introduction

A small sized assemblage of clay tobacco pipes was recovered from the site (1 box). Most fragments are in a fairly good condition, indicating that they had not been subject to much redeposition or were deposited soon after breakage. Clay tobacco pipes occur in nine contexts as small groups (under 30 fragments) in contexts.

All the clay tobacco pipes (70 fragments, of which none are unstratified) were recorded in an ACCESS database and classified by Atkinson and Oswald's (1969) typology (AO) and 18th-century examples by Oswald's (1975) typology and prefixed OS. The pipes are further coded by decoration and quantified by fragment count. The degree of milling has been noted and recorded in quarters, besides the quality of finish. The tobacco pipes are discussed by their types and distribution.

THE CLAY TOBACCO PIPE TYPES

The clay tobacco pipe assemblage from the site consists of 14 bowls, 55 stems and one nib or mouthpart. The clay tobacco pipe bowl types range in date between 1640 and 1740.

1640-60

AO9: one spurred bowl with a missing rim and fair finish.

1660-80

AO13: one heeled bowl with complete rim milling and of a fair quality finish and slightly more bulbous than the norm.

AO18: three straight-sided, heeled bowls of a fair or good finish and two undamaged examples have full milling of the rim.

1680-1710

AO22: two heeled bowls with a rounded profile of a fair quality. One bowl has full milling of the rim, whilst the other bowl has a quarter milling, which is more typical.

1700-40

OS10: two bowls, and one is marked ? S, the first name being illegible.

Undetermined types

There are five bowls that are represented only by their heels, but one may date to between c.1680-1740.

DISTRIBUTION

Table 1 shows the distribution of the clay tobacco pipes, showing the number of fragments, the date range of the types and the latest bowl, the types of bowls present, together with a spot date for each context tobacco pipes occur in. The clay tobacco pipes are found in phases 1 to 3.

Context	No. Of fragments	Date range of bowl types	Latest dated bowl type	Bowl types (and makers)	Spot date
1	11	1660-1740	1700-1740	X1 AO18, x1 OS10	1700-1740
11	3			Stems	1580-1910
21	12	1660-1680	1660-1680	X1 AO13	1660-1680
27	6			Stems	1580-1910
37	3			Stems	1580-1910
43	9	1660-1680	1660-1680	X1 AO18	1660-1680
47	19	1640-1740	1700-1740	X1 AO9, x1 AO20, x1 OS10 (? S)	1700-1740
55	1			Stem	1580-1910
57	6	1660-1710	1680-1710	X1 AO18, x1 AO20	1680-1710

Table 1. PIM08. Distribution of clay tobacco pipes. A spot date of 1580-1910 indicates that only stems were present in the context

SIGNIFICANCE OF THE COLLECTION

The clay tobacco pipes are of significance at a local level for showing what types were being produced or marketed to the area. There is no evidence for clay tobacco pipe production amongst the assemblage.

POTENTIAL

The clay tobacco pipes have the potential to date the contexts they were found in. None of the pipes require illustration. There is some evidence for the typological development of the different type of bowls in the site stratigraphy.

RESEARCH AIMS

No research aims are suggested for further avenues of research.

RECOMMENDATIONS FOR FURTHER WORK

There are no recommendations for further work. If a publication is required, then information should be taken from this report.

BIBLIOGRAPHY

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POST-ROMAN POTTERY ASSESSMENT (PIM 08)

Chris Jarrett

Introduction

A small sized assemblage of pottery was recovered from the site (one box). Very few sherds show evidence for abrasion, but the assemblage is mostly fragmentary and therefore secondary and tertiary deposition is probably represented. Despite the fragmentary nature of the pottery there are identifiable forms, but few with complete profiles and only one intact vessel, a flowerpot. Pottery was recovered from ten contexts and individual deposits produced small groups of pottery (under 30 sherds).

All the pottery (56 sherds and none are unstratified) was examined macroscopically and microscopically using a binocular microscope (x20), and recorded in an ACCESS database, by fabric, form, decoration, sherd count and estimated number of vessels. The classification of the pottery types is according to the Museum of London Archaeological Service. All the pottery is post-medieval in date and is discussed by types and its distribution.

THE POTTERY TYPES

Surrey-Hampshire Border wares

Surrey-Hampshire border whiteware with green glaze (BORDG), 1550-1700, three sherds, forms: dish.

Surrey-Hampshire border whiteware with clear (yellow) glaze (BORDY), 1550-1700, one sherd, form: unidentified.

Surrey-Hampshire border redware (RBOR), 1550-1900, two sherds, form: jar; rounded.

Surrey-Hampshire border redware with brown-glaze (RBORB), 1580-1800, five sherds, form: candlestick; upright.

Surrey-Hampshire border redware with green glaze (RBORG), 1580-1800, four sherds, form: bowl; carinated, candlestick.

Local coarse red earthenware

London-area post-medieval redware (PMR), 1580-1900, ten sherds, forms: colander, dish, flowerpot, jar; rounded.

Essex fine red earthenwares

Post-medieval fine redware (PMFR), 1580-1700, one sherd, form: unidentified.

Delftware

English tin-glazed ware (TGW), 1570-1846, two sherds, forms: bowl, cup.

Tin-glazed ware with external lead glaze/Wan Li/blue/yellow decoration (Orton type A: TGW A), 1612-50, one sherd, form: charger.

Tin-glazed ware with plain white glaze (Orton type C; TGW C), 1630-1846, two sherds, form: chamber pot.

Tin-glazed ware with external lead glaze/polychrome painted (Orton type D: TGW D), 1630-80, two sherds, form: charger.

Tin-glazed ware with pale blue glaze and dark blue decoration (Orton style H: TGW D), 1680-1800, two sherds: form: plate.

Tin-glazed ware with plain pale-blue glaze (TGW BLUE), 1630-1846, one sherd, form: unidentified.

Non-local earthenwares

Midlands orange ware (MORAN), 1480-1820, four sherds, form: butter pot.

Stonewares

English stoneware (ENGS), 1700-1900, one sherd, form: bottle.
London stoneware (LONS), 1670-1926, two sherds, form: tankard.
White salt-glazed stoneware (SWSG), 1720-1780, two sherds, form: cup.
Dipped white salt-glazed stoneware (SWSL), 1710-1760, one sherd, form: tankard.

Industrial finewares

Developed Creamware (CREA DEV), 1765-1830, three sherds, form: plate.
Plain refined white earthenware (REFW), 1800-1900, one sherd, form: plate.
Transfer-printed refined whiteware (TPW), 1780-1900, six sherds, forms: bowl, plate, teacup.
Refined red earthenware tile (XX), late 20th century.

Imports

Chinese porcelain with blue and white decoration (CHPO BW), three sherds, forms: bowl: rounded, jar.
German Frechen stoneware (FREC), 1550-1700, four sherds, forms: jug; bartman, rounded.
North Italian marbled slipware (NIMS), 1600-1750, four sherds, form, bowl rounded.

DISTRIBUTION

The distribution of the pottery is shown in table 1.

Context	No. of Sherds	Date range of Pottery types	Latest pottery type date range	Pottery types present	Spot Date
1	10	1480-1900	1805-1900	BORDY, CREA DEV, MORAN, PMR, REFW, TGW BLUE, TPW.	1780-1820
11	3	1720-1900	1780-1900	SWSG, TPW	1780-1900
21	3	1590-1900	1765-1830	CHPO BW, CREA DEV, TGW A	1765-1830
27	2	1550-1830	1765-1830	BORDG, CREA DEV	1765-1830
37	1	1480-1820	1480-1820	MORAN	1480-1820
43	9	1550-1900	1630-1900	FREC, NIMS BICR, PMFR, PMR, TGW C, TGW D	1630-1680
45	1	1580-1900	1580-1900	PMR	1580-1900
47	19	1480-1930	1780-1930	BORDG, CHPO BW, LONS, MORAN, PMR, RBOR, SWSL, TGW, TGW C, TGW H, TPW	1710-1760
55	1	1570-1846	1570-1846	TGW	1780-1846
57	7	1550-1900	1780-1900	ENGS, FREC, PMR, RBOR, TPW	1780-1900

Table 1. PIM08, distribution of pottery showing the number of sherds, date range of the pottery types, the pottery types present and the suggested deposition spot date for the context.

SIGNIFICANCE OF THE COLLECTION

The pottery is of little significance at a local and national level. The ceramics were derived from probable on site activity. The pottery also reflects the post-medieval ceramic trend for London.

Potential

The pottery has the potential to date the features in which it was found and to provide a sequence for them. None of the vessels merit photographing or illustration.

Research aims

No research aims are suggested as avenues for further research.

Recommendations for further work

There are no recommendations for further work. If the evaluation of PIM08 should go to further excavation, then this part of the site assemblage should be reviewed in the light of future finds of pottery on the site.

Appendix 5

PIMLICO SCHOOL, LUPUS STREET, PIMLICO, LONDON BOROUGH OF WESTMINSTER: GEOARCHAEOLOGICAL ASSESSMENT REPORT (SITE CODE: PIM08)

C.P. Green

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INTRODUCTION

This report summarises the findings arising out of the geoarchaeological assessment undertaken by *ArchaeoScape* in connection with the proposed development at Pimlico School, Lupus Street, Pimlico, London Borough of Westminster (Site Code: PIM08; National Grid Reference: TQ 2945 7819). During the recent archaeological evaluation at the site undertaken by Pre-Construct Archaeology Limited, four trenches were excavated. In Trench 2 (towards the centre of the site) ca. 0.50m of bluish grey clayey silt (context (18)), thought to resemble early to middle Holocene (Phase 3) alluvial deposition from the River Thames, was recorded above the Brickearth (Lythe, 2008). In the remaining three trenches, a relatively thin layer of bioturbated silty clay (contexts (2), (12), (15) and (63)) was recorded. *ArchaeoScape* obtained core samples from three boreholes for geoarchaeological assessment, and possible radiocarbon dating and bioarchaeological assessment: <BH1> located alongside Trench 2, and <BH2> and <BH3> situated alongside Trench 3. The aim of geoarchaeological assessment was to establish whether the clayey silt deposit recorded during the archaeological evaluation was indeed alluvium and, if so, to assess its potential for reconstructing the environmental history of the site and its environs. In order to achieve this aim, the geoarchaeological assessment consisted of recording the lithostratigraphy (all borehole core samples) to provide a preliminary reconstruction of the sedimentary history.

GEOLOGICAL CONTEXT

The Lupus Road site lies on the northern edge of a small area occupied by the Kempton Park terrace deposits of the British Geological Survey (1:50,000 Sheet 270 South London 1998). The stratigraphy recorded in the trenches (Lythe, 2008) strongly suggests that for much of the Holocene this small area of terrace deposits formed an upstanding 'island' surrounded by lower lying areas of alluvial accumulation. The upstanding area appears to consist largely of gravel overlain by a thin veneer of fine-grained material termed 'brickearth' by Lythe, 2008.

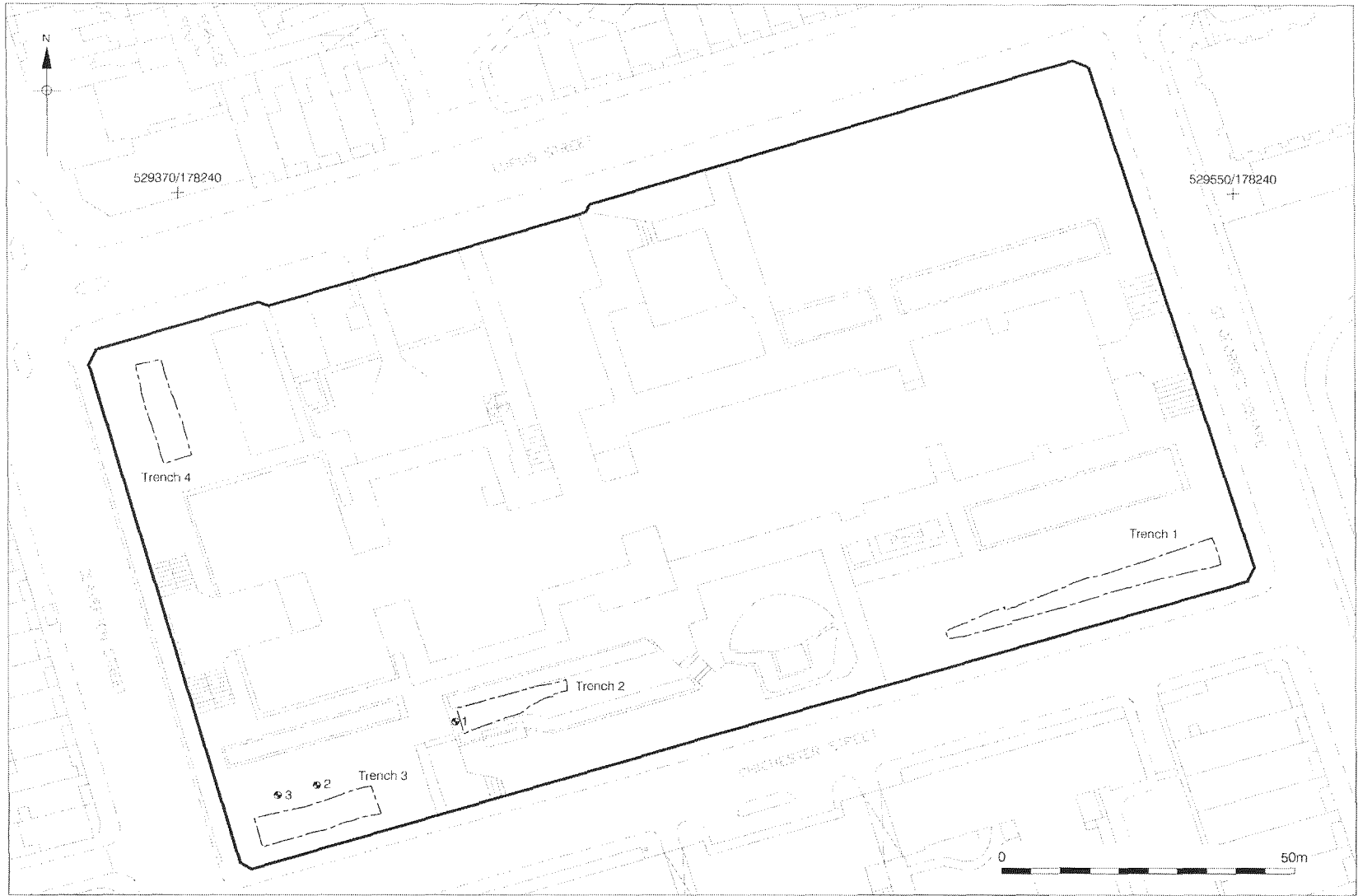
The gravel of the Kempton Park Terrace is generally thought to have been deposited in the Middle to Late Devensian cold stage. The isolation of this area of gravel to form an 'island' is probably the result of dissection during the latter part of the Devensian. The veneer of finer-grained material that immediately overlies the gravel and drapes the contours of the 'island' must have been emplaced during or after this phase of erosion. It may represent remnants of the Langley Silt, which is widely present overlying the Kempton Park Terrace to the south of the Pimlico site and the River Thames, underlying large parts of Battersea. The Langley silt probably incorporates some windblown material but is, in part at least, water-laid.

The mid bluish grey clayey silt recorded as overlying the 'brickearth' may form part of the Staines Alluvial Deposits of Holocene age described in the Pimlico area by Gibbard (1985). Gibbard records 4.5m of 'organic clay and peat' to the north of the present site near Victoria Station (TQ289790) and 3.0m of 'similar sediments' between Victoria Station and the present site at TQ 295 786. These substantial thicknesses of Holocene alluvium reflect the infilling of a complex of deep channels created late in the Devensian and responsible for the dissection of the Kempton Park Terrace. The whole of the area immediately to the south of Westminster and around the Lupus Road site remained wet marshland at least until the early years of the 18th century (Barton, 1992) and it is probable that the lower course of the Tyburn crossed this marshland immediately to the east of the present site, until the 13th or 14th century. The alluvial deposits recorded as overlying the 'brickearth' at the Lupus Road site may therefore represent a relatively late stage in the Holocene infilling of this marshy area, a process that was brought to an unnatural conclusion by land-raising operations in the 18th century.

METHODS

Field investigations

Borehole <BH1> was located alongside Trench 2 at its western end and about 0.3m above the level of the top of the trench. Boreholes <BH2> and <BH3> were taken alongside Trench 3 to the north of the trench (Figure 1). The OD heights at the top of the boreholes and the context numbers attached to borehole <BH1> have been estimated from the archaeological sections. The continuous borehole core samples were retrieved using an Atlas Copco 2-stroke percussion engine, Eijkelkamp gouge set and Stitz piston corer.



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Figure 1: Location of boreholes <BH1>, <BH2> and <BH3>, Pimlico School, Lupus Street, Pimlico, London Borough of Westminster (PIM08)

Lithostratigraphic descriptions

The lithostratigraphy of the borehole core samples was described in the laboratory using standard procedures for recording unconsolidated sediment and organic sediments, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts). The procedure involved: (1) cleaning the samples with a spatula or scalpel blade and distilled water to remove surface contaminants; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition e.g. gravel, fine sand, silt and clay, and (4) recording the unit boundaries e.g. sharp or diffuse. The results are displayed in Tables 1 to 3.

RESULTS AND INTERPRETATION OF THE LITHOLOGICAL ASSESSMENT

In the upper part of all three boreholes, Made Ground is present. In borehole <BH1> the Made Ground rests with a very sharp contact on a mottled horizon (Unit 5) with evidence of pedological processes in the form of mottling and root penetration. In borehole <BH2> the undoubted Made Ground passes down into structure-less gritty clay (Unit 5) contaminated with charcoal - possibly also Made Ground. In borehole <BH3> the undoubted Made Ground rests on charcoal-rich, gravelly and severely compacted units (respectively Units 9, 8 and 7), all of which may also be Made Ground. The levels of the base of the Made Ground in borehole <BH1> and the base of the ?Made Ground in boreholes <BH2> and <BH3> (respectively Unit 5 and Unit 7) are all within 0.15m of a level 0.75m OD, which appears to represent the level of the top of undisturbed natural deposits. In borehole <BH2>, immediately below this level there is evidence of pedological processes very similar to the features seen at this level in borehole <BH1> (mottling and root penetration). In borehole <BH2>, these features affect gravelly sediments and the lower part of the borehole was entirely in sand and gravel. In borehole <BH3>, the compacted unit (Unit 7) rests directly on gravelly sediment, which occupies the whole of the lower part of the borehole. There is evidence of root penetration in Unit 2, a sandy horizon within the gravelly sediments. In borehole <BH1>, the pedological processes affect sandy sediments that pass down into sand and gravel.

All of the sediments underlying the Made Ground in boreholes <BH1>, <BH2> and <BH3> are more or less sandy and pass down without any obvious unconformity into sand and gravel. They seem most likely to represent part of the Kempton Park Gravel, which is shown by the British Geological Survey (1:50,000 Sheet 270 south London 1998) to underlie the site. Some of the fine-grained sediment immediately underlying the Made Ground in boreholes <BH1> and <BH2> may represent remnants of the Langley Silt which overlies the Kempton Park Gravel in many places. There is evidence of soil development, probably a

truncated B horizon, in the upper part of the natural sequence in borehole <BH1>, in Units 4 and 5, equivalent to archaeological context (18). Similar features are present in borehole <BH2> in Units 2, 3 and 4 and there is root penetration in Unit 2 of borehole <BH3>. These features suggest that the contact with the Made Ground at ca. 0.75m OD is probably not far removed from the level of the natural ground surface. None of the sediments seen in the boreholes resembles the typical fine-grained, predominantly silty, floodplain alluvium of the River Thames and its tributaries.

Table 1: Lithostratigraphic description of <BH1>, alongside Trench 2, Pimlico School, Lupus Street, Pimlico, London Borough of Westminster (PIM08)

Depth (m OD)	Unit number	Context number	Phase number	Description
3.02 to 2.62	9	17	4	Dark greyish brown; soil heavily contaminated with CBM, mortar, concrete; sharp contact with:
2.62 to 2.02	8	17	4	Broken concrete and CBM (up to 70mm)
2.02 to 1.02	7	17	4	Black; poorly sorted gritty clayey silt with flint clasts (up to 15mm); crumby; CBM; bone
1.02 to 0.74	6	17	4	Black, poorly sorted gritty clayey silt, becoming increasingly sandy downward with flint clasts (up to 15mm); crumby; charcoal; CBM; coal; very sharp contact with:
0.74 to 0.59	5	18	3	10YR4/4 dark yellowish brown with 5YR5/8 yellowish red mottles; moderately sorted clayey silt with quartz sand grains and a few quartz and flint granules; massive; occasional root channels with Fe coating; well marked transition to:
0.59 to 0.40	4	18	3	2.5Y5/2 greyish brown with diffuse 10YR5/8 yellowish brown mottles; moderately sorted sandy clay with a few quartz and flint granules; massive; gradual transition to:
0.40 to -0.08	3	19	1	7.5YR4/4 dark brown; moderately well sorted sandy clay/clayey sand; massive
-0.08 to -0.26	2	19	1	2.5Y5/4 light olive brown; moderately sorted clayey sand becoming more sandy downward; massive; very sharp contact with:
-0.26 to -0.98	1	20	1	Brown to reddish brown; sandy gravel.

Table 2: Lithostratigraphic description of <BH2>, alongside Trench 3, Pimlico School, Lupus Street, Pimlico, London Borough of Westminster (PIM08)

Depth (m OD)	Unit number	Description
2.53 to 2.41	8	Loose mixture of chalk and flint clasts in sparse remains of dark brown soil; sharp contact with:
2.41 to 1.53	7	Black; poorly sorted gritty clayey silt with flint clasts (up to 20mm); crumby; charcoal; CBM; window glass; coal; piece of shelly limestone (64mm).
1.53 to 1.27	6	10YR3/1 dark grey; very poorly sorted gritty/gravelly silty clay with flint clasts (up to 20mm); crumby; charcoal, CBM; mortar; gradual transition to:
1.27 to 0.80	5	10YR5/2 greyish brown; poorly sorted gritty/sandy silty clay; massive; charcoal; gradual transition to
0.80 to 0.71	4	10YR5/2 greyish brown; moderately sorted silty/clayey sand; massive; gradual transition to:
0.71 to 0.53	3	10YR5/4 yellowish brown and 7.5YR5/6 reddish brown; moderately sorted sandy silt becoming more sandy downward; crude horizontal bedding
0.53 to 0.29	2	10YR5/4 yellowish brown; moderately sorted sandy silt passing down to silty gravel with flint clasts (up to 10mm); massive; root channels with Fe coating; gradual transition to:
0.29 to - 0.47	1	10YR5/8 yellowish brown; poorly sorted gravelly sand with flint clasts (up to 25mm).

Table 3: Lithostratigraphic description of <BH3>, alongside Trench 3, Pimlico School, Lupus Street, Pimlico, London Borough of Westminster (PIM08)

Depth (m OD)	Unit number	Description
2.53 to 2.33	11	10YR3/2 very dark greyish brown; very poorly sorted gritty clayey/silty fine gravel (up to 5mm); crumby; charcoal; CBM; mortar; well-marked transition to:
2.33 to 1.46	10	Black; poorly sorted gritty clayey silt with flint clasts (up to 15mm); crumby; charcoal; coal CBM; mortar; bone (50mm)
1.46 to 1.41	9	10YR5/3 brown; well sorted silty sand; massive; charcoal; well-marked transition to:
1.41 to 1.26	8	10YR5/3 brown; poorly sorted silty clayey gravel with clasts up to 50mm; crudely bedded; well-marked transition to:
1.26 to 0.90	7	10YR5/3 brown; moderately sorted silty clayey sand; massive and very compact; occasional root channels with Fe coating; sharp contact with:
0.90 to 0.53	6	10YR5/6 yellowish brown; clayey sandy gravel becoming more sandy downward; crudely bedded
0.53 to 0.31	5	10YR5/6 yellowish brown passing down to 5YR5/8 yellowish red; poorly sorted sandy gravel; massive; sharp contact with:
0.31 to 0.23	4	10YR7/4 very pale brown; well sorted medium sand; massive; sharp contact with:
0.23 to 0.01	3	10YR7/4 very pale brown passing down to 10YR6/4 light yellowish brown; poorly sorted sandy gravel/gravelly sand; massive; sharp contact with:
0.01 to -0.12	2	10YR6/4 light yellowish brown passing down to 10YR4/4 dark yellowish brown; well sorted slightly silty fine sand passing down to silty fine sand; massive and very compact; root channels with occasional root remains; sharp contact with:
-0.12 to -0.47	1	7.5YR5/4 brown; poorly sorted silty sandy gravel; massive.

CONCLUSIONS AND RECOMMENDATIONS

The archaeological evaluation undertaken by Pre-Construct Archaeology Ltd revealed sediment with the appearance of alluvium in Trench 2 with an upper surface at 1.28m OD. Borehole <BH1> was put down alongside Trench 2 and passed with a very sharp contact from Made Ground into the natural at 0.75m OD. The upper part of the natural is a sandy silty clayey sediment with evidence of soil formation, probably the lower part of a B horizon.

The borehole record strongly suggests that the site is located on an 'island' of Kempton Park Gravel. None of the sediments recorded in the laboratory are interpreted as Holocene alluvium. No further environmental archaeological assessment of the borehole core samples is recommended from the deposits recovered from Pimlico School.

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