

**THE SANCTUARY,
WESTMINSTER ABBEY,
CITY OF WESTMINSTER**

**AN ARCHAEOLOGICAL WATCHING
BRIEF DURING DRAINAGE REPAIR
WORKS**

SEPTEMBER 2008

DOCUMENT VERIFICATION

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CITY OF WESTMINSTER**

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DURING DRAINAGE REPAIR WORKS**

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**An Archaeological Watching Brief During Drainage Repair
Works at the Sanctuary, Westminster Abbey, City of
Westminster, London**

Site Code: TSA 08

Central National Grid Reference: TQ 2997 7948

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September 2008**

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1 ABSTRACT

- 1.1 This report details the results and working methods of an archaeological watching brief during drainage repair works at the Sanctuary, Westminster Abbey, City of Westminster, SW1P 3PA. West One Infrastructure Services commissioned the watching brief on behalf of Westminster City Council. The project took place between 4th February and 16th April, 2008.

- 1.2 According to the Method Statement for the watching brief (Mayo 2008), a single shaft measuring 3.0m by 3.0m would be excavated to a depth of approximately 5.0m, at which point a header would be tunnelled in a north north-easterly direction for a distance of approximately 48.5m in order to repair a collapsed sewer running along Broad Sanctuary and Victoria Street. However, due to obstruction by underground services the header could not be completed. Another access shaft measuring 2.1m by 2.5m was excavated to a depth of 4.30m in a second attempt to repair the main sewer. Pre-Construct Archaeology monitored the excavations of both shafts as well as the headers as specified in the Method Statement.

- 1.3 During the watching brief medieval walls presumably associated with the Chapter Clerks dwelling and the Bishop of London's Prison were recorded in Trench 1. Additional archaeological features including several pits dating to the medieval period and a construction cut likely associated with the abbey precinct wall were also identified and recorded during the excavation of the header. During the excavation of Trench 2 several post-medieval gravel road surfaces and a medieval paleochannel were recorded.

2 INTRODUCTION

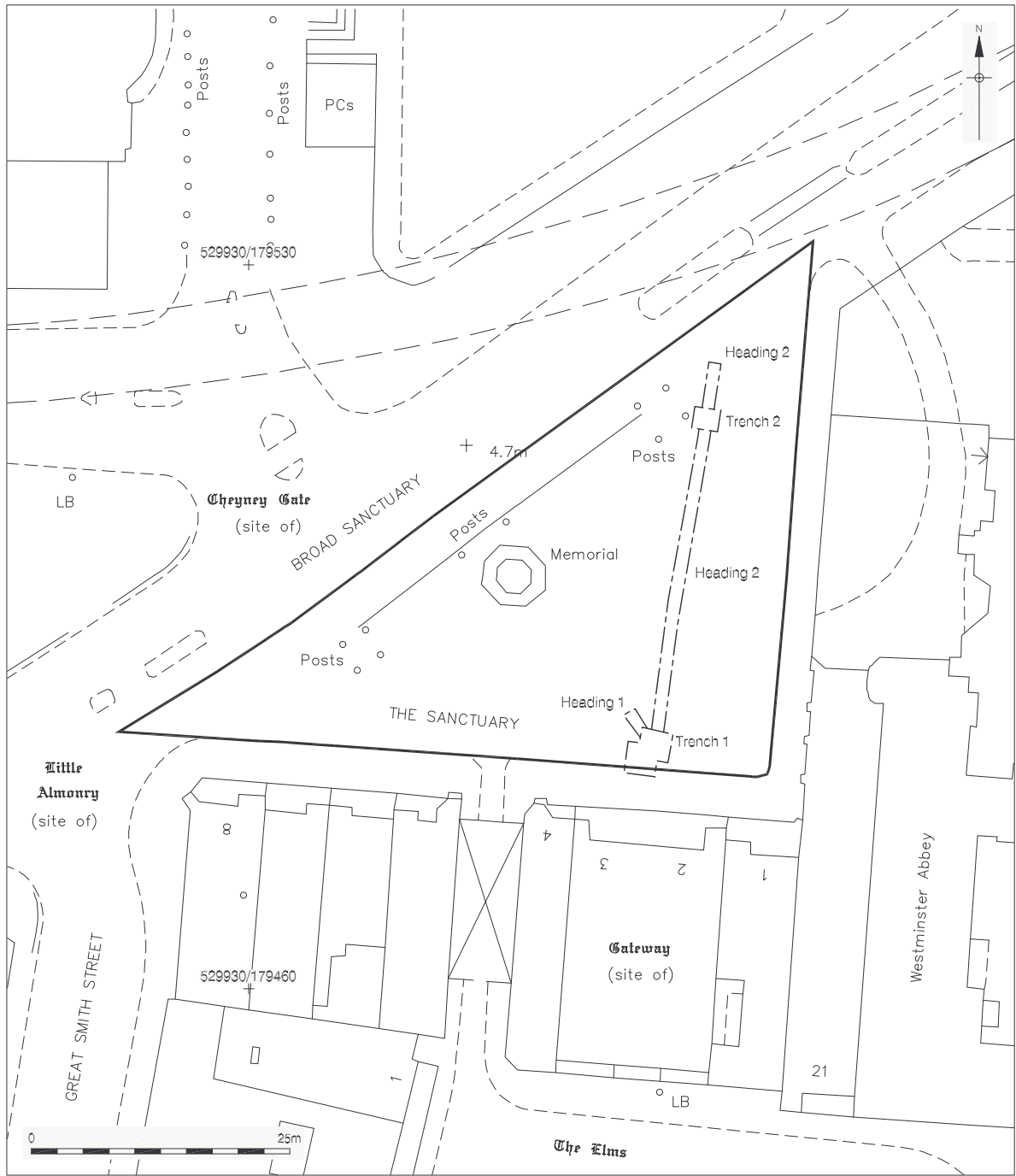
- 2.1 This report details the results and working methods of an archaeological watching brief during drainage repair works at The Sanctuary, Westminster Abbey, City of Westminster, SW1P 3PA (Figure 1). West One Infrastructure Services commissioned the watching brief on behalf of Westminster City Council. The project was managed for Pre-Construct Archaeology by Chris Mayo and supervised by the author.
- 2.2 The archaeological watching brief was undertaken discontinuously between 4th of February and 16th April 2008. The scope of the project included monitoring the excavation of two trenches or access shafts as well as two headers excavated in an attempt to repair a collapsed main sewer running along Broad Sanctuary and Victoria Street (Figure 2).
- 2.3 The site is located within The Sanctuary, Westminster Abbey, in the City of Westminster, London. Westminster Abbey lies immediately to the east of the site and 5-8 The Sanctuary building stands to the south. Broad Sanctuary borders the site to the north.
- 2.4 The site is located at central National Grid Reference TQ 2997 7948.
- 2.5 The maximum depth of ground reduction was 4.40m below current ground level. All archaeological deposits were recorded and are discussed later in this report.
- 2.6 The site was assigned the code TSA 08. Westminster Abbey, along with Westminster Palace and St Margaret's Church, is a World Heritage Site (number 426, designated inscription in 1987).



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Figure 1
Site Location
1:20,000 at A4



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Figure 2
Trench Location
1:625 at A4

3 PLANNING BACKGROUND

- 3.1 The study aims to satisfy the objectives of the City of Westminster, which fully recognises the importance of the buried heritage for which they are the custodians. In November 1990 the Department of the Environment issued Planning Policy Guidance Note 16 (PPG16) 'Archaeology and Planning'. It provides guidance for planning authorities, property owners, developers and others on the preservation and investigation of archaeological remains.
- 3.2 The site is located within the World Heritage Site of the Palace of Westminster and Westminster Abbey including St. Margaret's Church (number 426, designated inscription in 1987).
- 3.3 The Council's Archaeology Policy, as defined in the City of Westminster's Unitary Development Plan adopted 24 January 2007, is as follows:

DES 16: WORLD HERITAGE SITE

Aim

10.188 To safeguard the World Heritage Site.

POLICY DES 16: WORLD HERITAGE SITE

Permission will only be granted for developments that protect and conserve the character, appearance, setting and ecological value of the World Heritage Site

Policy application

10.189 Although no additional statutory controls follow from the designation of a World Heritage Site, PPG15: Planning and the Historic Environment states, in paragraph 2.22, that the designation highlights the outstanding international importance of the site which should be a key material consideration to take into account when determining planning and listed building consent applications. Great weight is placed upon the need to protect them for future generations. Development proposals affecting these sites or their settings need to be compatible with this objective and require careful scrutiny, often by way of formal environmental assessments, to ensure that their immediate and long term impact are fully evaluated.

Chapter 10: Urban Design and Conservation

City of Westminster **552** Unitary Development Plan adopted 24 January 2007

Reason

10.190 The member states of United Nations Educational Scientific and Cultural Organisation UNESCO adopted the Convention concerning the Protection of World Cultural and Natural Heritage in 1972. This Convention provided for the creation of the World Heritage Committee which, in 1987, inscribed the area formed by the Palace of Westminster, St Margaret's and Westminster Abbey as a World Heritage Site, now one of twenty six in the United Kingdom. This area has thus been recognised as being of 'outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view'.

4 GEOLOGY AND TOPOGRAPHY

- 4.1 Topographically there is little variance within the site. It slopes gently from the north towards the south. The current ground surface in the northern extreme of the site is measured 4.31m above Ordnance Datum (OD) while the southernmost part of the site was measured at an elevation of 4.11m OD.

- 4.2 The study site is located on what used to be Thorney Island, the largest and probably the highest of the islands within the Tyburn delta. The island was located at the confluence of the Tyburn and the Thames rivers. Geologically Thorney Island consisted primarily of sand and gravel overlying London Clay (Thomas *et al* 2006).

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 The Mesolithic to Early-Middle Bronze Age

5.1.1 It is believed that Thorney Island formed as a result of the Thames depositing sands that in some places eventually became isolated islands, probably through a combination of processes including erosion, scouring, and preferential sand deposition. Radiocarbon dating of material recovered from the sands of the island suggests that the sand was accreting in the mid- to late Neolithic period (Thomas *et al* 2006).

5.1.2 By the end of the Neolithic period the island would have developed from one of many bars into a fixed focal raised position in the floodplain. Analyses of environmental samples extracted during previous archaeological work on Thorney Island suggest that the island was sparsely vegetated during this period. Furthermore the analyses suggest that the vegetational cover that did exist largely comprised oak woodland (Thomas *et al* 2006).

5.1.3 A number of structures dating to the Mesolithic or early-middle bronze age have been identified during previous archaeological work on Thorney Island suggesting at least ephemeral use of the area throughout these periods (Thomas *et al* 2006).

5.2 Late Bronze Age and Iron Age

5.2.1 Little evidence of Iron Age occupation of Thorney Island exists. It has been hypothesised that this may be due to the major flooding episode that occurred during the middle of the 11th century, which removed the foreshore deposits and deposited some silts on the higher ground (Thomas *et al* 2006).

5.3 Roman

5.3.1 Previous archaeological excavations carried out on Thorney Island have failed to identify any definite Roman features. However, Roman artefacts have been recovered during most of archaeological work carried out on the former island (Thomas *et al* 2006).

5.4 Saxon

5.4.1 According to John Stow in his Survey of London (1598) King Sebert (d. ca. 615 AD) granted the privilege of sanctuary within the precinct of Westminster. This privilege was purportedly increased by King Edgar and renewed and confirmed by Edward the Confessor. The claim that the roots of Westminster Abbey predate the age of King Edgar largely rely on a charter of Offa of Mercia dated to 785 granting land and

privileges to the church of St. Peter on Thorney Island. However, various 20th century scholars have questioned the authenticity of the document.

5.4.2 It is believed that the foundation of the abbey dates to the reign of King Edgar (AD 959-75) who granted a foundation charter to St. Dunstan. The church founded by St. Dunstan was described as a monasterium, or little monastery, and was inhabited by an abbot and 12 monks (Thomas *et al* 2006).

5.5 Medieval

5.5.1 The history of Westminster Abbey has been detailed in numerous volumes and it is therefore felt that the focus of the historic background research included in this report should be on the Sanctuary rather than on the Abbey itself.

5.5.2 The right of sanctuary likely dates back at least as far as the Saxon period. It gave people the right to seek asylum and protection from persecution by entering consecrated ground. It operated on the belief that upon entering a holy establishment the individual would assume the holiness of the place. The right of sanctuary was therefore considered inviolable and those individuals violating this right by forcibly removing persons under the protection of the church would be excommunicated. At Westminster the entire abbey precinct was considered sacred ground and therefore the area of sanctuary encompassed the entire precinct (Besant 1895).

5.5.3 In 1245, the monks at Westminster received a charter from King Henry III allowing them to hold a three-day fair twice a year. Three years later the king decreed that the October Fair at Westminster be extended from three to 15 days during which time all other fairs in England were to be suspended and the shops in London remain closed. By the end of the 13th century the October Fair had been extended to a full month (Prestwich 2005).

5.5.4 During the late 13th century “fair houses” were erected within the Sanctuary to accommodate traders at the international fair held there. Following the decline of the October Fair in the late 14th century The Sanctuary became almost entirely built up of permanent domestic and commercial buildings. By 1400 the houses in the sanctuary were worth upwards of £80 in rents. Throughout the second half of the 14th century several shops were constructed in the cemetery of St. Margaret’s Church and by the northern gate of the precinct (Rosser 1989).

5.5.5 The mid- to late 14th century also saw the beginning of commercial development along the eastern part of Tothill Street. It began in 1358 by the construction of three shops outside the sanctuary west gate. The shops shared the site with a common privy standing partially over the waters of Long Ditch (Rosser 1989). Westminster Abbey

Muniments show that in the years 1364-66, “on account of the stench of the public latrine,” it was almost impossible to let the smallest of these shops (WAM 18993).

5.5.6 Major rebuilding was carried out in the mid-late 14th century on the claustral buildings. The rebuilding included the building of the abbot’s house to the southwest of the cloister. This consisted of a range of buildings fronting a walled courtyard (The Elms and later named Dean’s Yard) to the west. The northern wall of the courtyard extended west from the north-western corner of the building (Thomas *et al* 2006).

5.5.7 In the reign of King Edward III (reigned 1327-77), Walter Warfield, cellarer of the monastery, oversaw the construction a gatehouse comprising two gates; one leading from Tothill Street to the sanctuary, the second leading from College Court (now Great Dean’s Yard) to the sanctuary. The east part of the gatehouse served as the Bishop of London’s Prison for religious offenders while the west portion of the gatehouse (over Tothill Street) served as a general prison (Thomas 1842).

5.6 Post-Medieval

5.6.1 During the dissolution of the monasteries (1536-1540) by Henry VIII several statutes were passed to regulate, limit, and partially abolish the privilege of sanctuary (Thornbury 1878). In 1623, James I abolished sanctuary for crime throughout England, although at Westminster the practice was partially maintained in civil cases until the “The Escape from Prison Act” of 1697. The Sanctuary at Westminster was partially demolished during the 17th century, but the final remains of the building were not cleared until the mid-18th century (Besant 1895).

5.6.2 Westminster Abbey was surrendered to Henry VIII on January 16, 1540 following an assembly in the Chapter House. The document surrendering the abbey to “the most excellent prince, the Lord King Henry” was signed “unanimously and of their own free will” by the abbot William Boston and 26 monks. Letters patent were issued in December 1540 to convert the abbey into a cathedral (Field 1996).

5.6.3 Mary I re-established the monastery at Westminster in charter dated November 10, 1556. Benedictine possession of the abbey lasted for three years before the final dissolution of the monastery in 1559 by Elizabeth I, who re-established it as a *royal peculiar* and made it the Collegiate Church of St. Peter (Field 1996).

5.6.4 Whilst the political structure of the abbey underwent drastic changes throughout the 16th century several attempts were made to revitalise the area surrounding the church and inner precinct. Because the right of sanctuary was still somewhat in effect at Westminster until the end of the 17th century the area attracted individuals seeking protection from crimes committed. Several unsuccessful attempts were made

throughout the 16th and 17th centuries to gain incorporation for the town and thus discontinue clerical authority and thereby the right of sanctuary (Merritt 2005).

5.6.5 Mid-18th century maps identify a range of buildings north of Deans Yard as the Chapter Clerk's house and the Bishop of London's Prison.

5.6.6 By the late 18th century the gatehouses spanning Tothill Street (containing the public prison) and the entrance to College Court (used as the Bishop of London's prison) had fallen into disrepair and the Tothill portion of the gatehouse was demolished in 1776 (Pratt 1914). The part of the gatehouse spanning the entrance to College Court survived at least until 1808 when it was depicted on a drawing by William Capon (Thomas *et al* 2006). Antonio Canaletto's 1749 painting Westminster Abbey with a Procession of the Knights of the Bath shows a crenelated wall extending west from the northwest corner of the Jerusalem Chamber.

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 The scope of the watching brief was to monitor the excavation work associated with drainage repair works at The Sanctuary, Westminster Abbey. This included monitoring the excavation of two trenches within the limits of the sanctuary. The trenches were positioned in the southern (Trench 1) and northern (Trench 2) portions of the sanctuary and measured 3.00m east-west x 3.00m north-south and 2.58m east-west x 2.00m north-south respectively. Trench 1 was excavated to a depth of 4.40m (-0.29m OD) and Trench 2 to 4.30m (+0.01m OD). During the excavation of Trench 1 the trench was relocated slightly to the northeast in order to avoid impact to medieval structural remains.
- 6.2 The watching brief also monitored the excavation of two header shafts. The first, Heading 1, was the intended course of the initial project design but had to be abandoned after only 2.0m. Therefore a second heading, Heading 2, was excavated on a NNE-SSW alignment. This heading measured approximately 36.0m long. The top of Heading 2 was at +1.09m OD and the base at -0.09m OD.
- 6.3 Individual descriptions of all archaeological strata and features excavated and/or 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 and the sections at 1:10. The recording system used was "single context".
- 6.4 All finds retrieval policies of the Museum of London will be adopted and all identified finds and artefacts will be retained according to the stated selection retention and retrieval policy appropriate to the material type and date. No finds will be discarded without the prior approval of the nominated representative of the LPA and with the agreement of the Dean and Chapter's Consultant Archaeologist.
- 6.5 OD levels were measured and temporary bench marks (TBMs) were established along the top of the trench. The depths of the archaeological features identified during the investigation were measured from the ground surface and then deducted from the nearest TBM.

7 SUMMARY OF THE ARCHAEOLOGICAL SEQUENCE

7.1 Natural Sequence (Phase 1)

7.1.1 The natural sequence is represented in Trench 1 by two deposits of brickearth ([11] and [12]) and in Trench 2 by a single deposit of brickearth, [34] (same as [11]) overlain by a gravel streambed [33].

7.1.2 Brickearth deposit [12] comprised light brownish yellow fine sand with sub-rounded particle shape (Kania 2008). The deposit continued vertically beyond the base of the excavation and was observed at a maximum height of +0.31m OD. Deposit [12] was overlain by another brickearth deposit, [11], which was observed at a maximum height of +1.06m OD. This deposit comprised firm to stiff light brownish yellow very sandy clay with occasionally occurring inclusions of reddish brown organic matter (Kania 2008). Deposit [34] was observed in Trench 2 at a maximum height of +1.71m OD. The deposit displayed identical characteristics to [11] and it is probable that they are part of the same deposit.

7.1.3 Overlying deposit [34] was a gravel deposit [33] measuring 0.90m north-south with a maximum thickness of 0.10m. The top of the deposit sloped from +1.61m OD in the north to +1.31m OD towards the south where it extended beyond the limit of excavation. The gravel deposit probably represented the streambed of a palaeochannel.

7.2 Medieval Period (Phase 2)

7.2.1 Several archaeological features that dated to the medieval period were recorded during the watching brief. Phase 2 was represented, in Trench 2, by an organic deposit [32] filling the aforementioned paleochannel. Two samples were extracted from [32]: one bulk sample and one 1m column sample. The column sample extended into deposits [30] and [31] above [32] and deposit [34] below. Both samples were analysed by ArchaeoScape, who recorded the lithostratigraphy of the column sample and also assessed the vegetation history; the preservation and concentration of diatom frustules; and the preservation and concentration of macroscopic plant remains. The results of the analyses are summarised in Chapter 8 of this report and the full results of this undertaking are presented in Appendix 3.

7.2.2 A layer of made ground [31] comprised primarily of mortar overlaid the organic horizon [32]. This layer was presumably installed in order to raise and level the ground level in preparation for the widening of Tothill Street. Spot dating of the pottery recovered from this deposit dates the layer to some time between 1240 and 1400. In addition to the pottery, a few CBM fragments were also recovered from this deposit. At up to 0.40m thick this context was recorded at a maximum height of +2.61m OD.

7.2.3 In Trench 1 the natural sequence was directly overlain by stone walls belonging to a former basemented building dating to the medieval period (Figures 4 and 5). Square-hewn Kentish ragstone blocks laid in regular courses and bonded with light yellowish grey to greyish yellow coarse sandy mortar were used in the construction of wall [2]. The wall was observed at a maximum height of +3.82m OD, extended to a maximum depth of +1.07m OD and measured at least 1.10m in width. Due to the fact that the wall extended beyond the confines of Trench 1 its full width of it could not be determined. The wall consisted of two wall segments joined in the southwest corner of the trench to form the corner of a building. In this southwest corner of the trench substantial truncation of the wall segments had occurred to a maximum height of +2.91m OD. It is possible that this occurred when the building was demolished, presumably in the early to mid 19th century. At a level of +2.77m OD the wall was stepped to the east creating a 0.19m wide offset running along the north-south aligned portion of the wall. It is possible that this offset was created in order to support a timber floor.

7.2.4 Several layers of redeposited material filled the basement of the building. The earliest of these fill episodes [10] measured 1.10m in thickness and was first observed at a height of +2.16m OD. Context [10] comprised very dark greyish brown sandy clay containing occasional inclusions of rounded to sub-rounded small to medium sized pebbles and very occasional inclusions of fragmented CBM. Sealing deposit [10] was another layer of backfill [7] consisting of dark brown sandy clay measuring 0.35m in thickness at a maximum height of +2.51m OD. Temporally diagnostic pottery recovered from [7] dated the deposit to between 1400 and 1500 suggesting that the basement had been at least partially filled in sometime during the 15th century. In addition to the pottery a few fragmented animal bones, CBM fragments, and worked chalk fragments were also recovered from [7].

7.2.5 In Heading 2 three features were directly overlying the natural sequence. These were a ditch [20] and two pits ([15] and [17]) dating to the medieval period (Figure 6). Ditch [20] was aligned east-west and measured 2.30m north-south by at least 1.00m east-west by 0.85m deep. The ditch was observed at a maximum height of +1.09m OD. The fill of ditch [20] (context [19]) yielded a few CBM fragments, shell fragments, and sherds of pottery. Spot dating of the artefacts recovered from the fill suggests that the ditch was filled in some time between 1080 and 1150. Pit [15] measured 1.40m north-south by 0.45m deep, and was first observed at a maximum height of +1.09m OD. Filling pit [15] was [14], a dark brown to yellowish brown fill composed of very sand clay with occasional pebble inclusions. A small number of animal bone fragments and pottery sherds were recovered from the fill. Dating of the pottery sherds revealed that the pit had been backfilled between 1140 and 1220. The second pit [17] was observed in the northern section of the header just south of ditch [20]. It had been backfilled by deposit [16], which consisted of dark yellowish brown sandy clay containing very occasional

inclusions of pottery dating from 1050 to 1150 and very occasional CBM fragments. Only the basal portion of the pit was recorded as the sides extended above the excavation limit. The observed portion of the pit measured 0.70m north-south by approximately 0.35m deep.

7.2.6 Because of its position, shape, and alignment, cut [13] was interpreted as the construction cut for the abbey precinct wall. It measured 1.82m north-south by at least 1.00m east-west by 0.28m deep. The construction cut was also first observed at a maximum height of +1.09m OD. It extended up beyond the level of the roof of the header and also to the east and west beyond the limit of excavation. The cut was filled by [18] which comprised light yellowish brown sandy mortar with frequent inclusions of chalk fragments and 13th to 14th century tiles. Several larger ragstone and chalk blocks were observed at top of the cut extending above the upper limit of excavation. These chalk blocks appeared to be forming an east-west aligned line which may represent the base of the foundation of the precinct wall itself.

7.3 Post-Medieval Period (Phase 3)

7.3.1 In the southeast corner of Trench 1 two courses of brickwork [1] overlaid the medieval stone walls [2]. Orange fabric bricks measuring 200mm by 100mm by 60mm were used for what likely represents post-medieval rebuilding or repair work to the medieval structure. The bricks were bonded with hard pale yellow to yellowish grey fine grained mortar containing frequent chalk fleck inclusions. The brickwork survived to a maximum height of +3.19m OD.

7.3.2 Overlying the layer of backfill [7] in Trench 1 was a moderately compact layer of yellowish brown sandy silt with few pebble inclusions [6]. No datable material was recovered from this deposit so it is uncertain whether it dates to the medieval period or the post medieval period. It is possible that the layer was deposited following the brick repairs [1] in order to raise the floor level to just below it. The layer was first observed at a maximum height of +3.04m OD.

7.4 Modern Period (Phase 4)

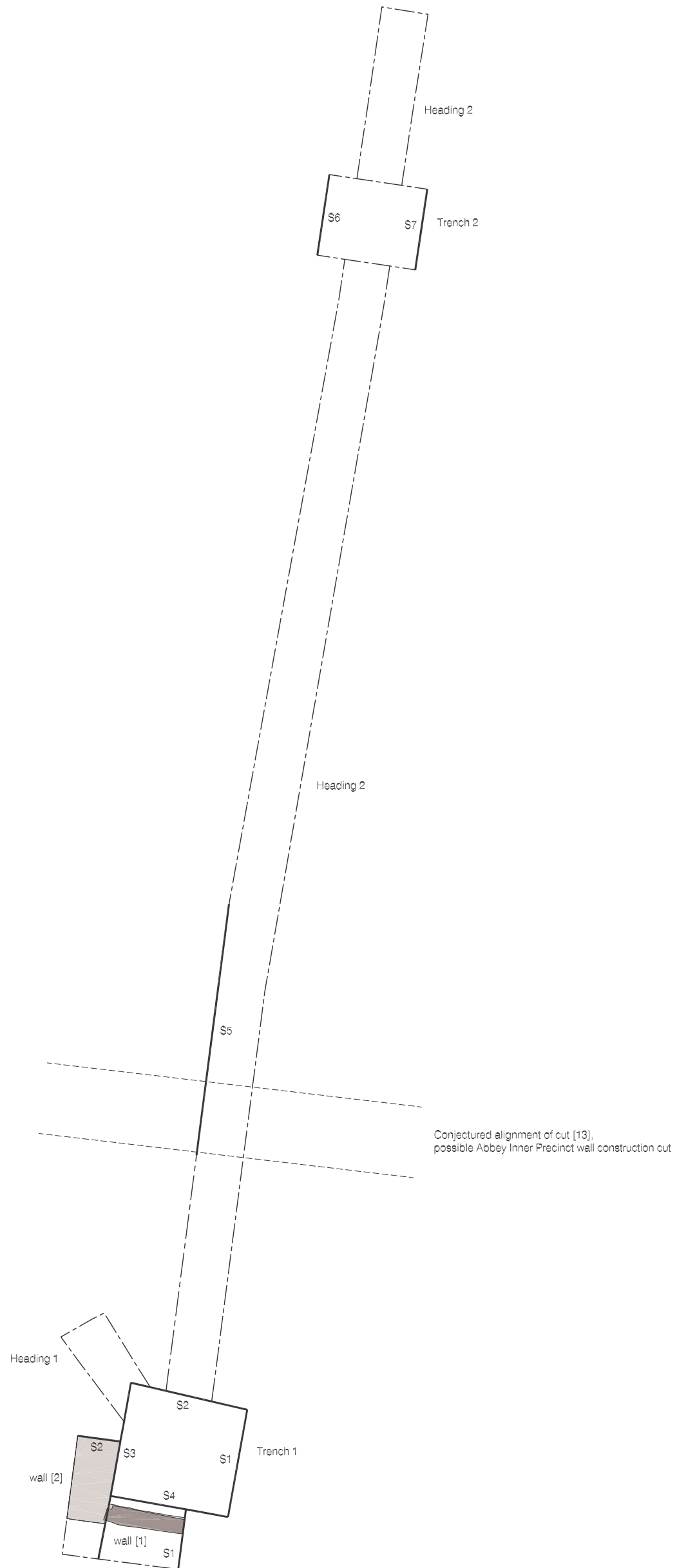
7.4.1 Overlying both [1] and [6] was a 0.22m thick layer of bluish green silty clay containing very occasional flecks of charcoal and small rounded pebbles [9]. It was first observed at a maximum height of +3.19m OD. This deposit possibly relates to the demolition of the building, presumably in the early 19th century. Context [3] represented a demolition layer presumably related to the demolition of the building. It measured 0.24m in thickness and was recorded at a maximum height of +3.43m OD. The primary component of the layer was brick and stone rubble and mortar. Context [3] was

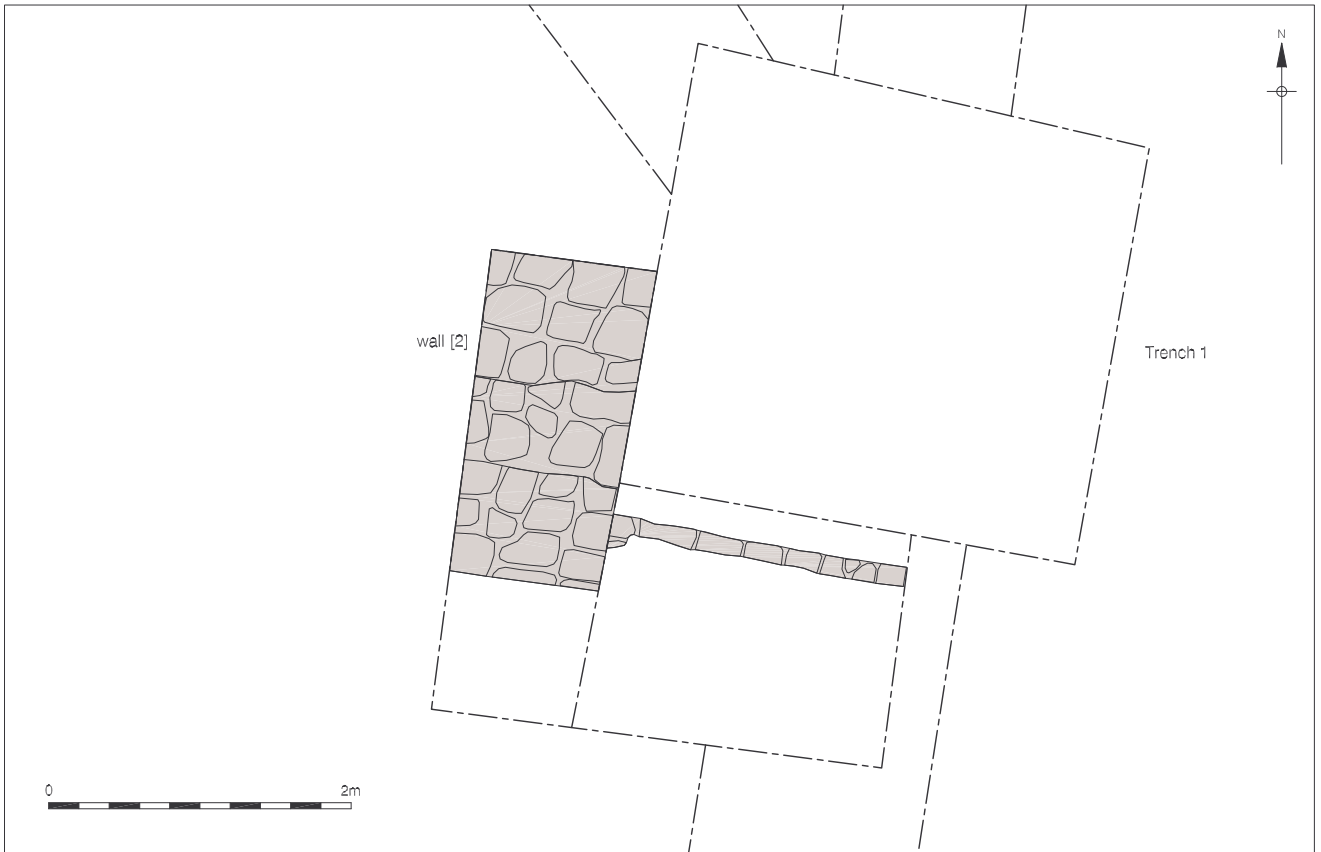
truncated to the west by a north-south aligned construction cut for a modern sewer pipe [5], with fills [4] and [8].

7.4.2 In Trench 2, overlying the medieval made ground [31] was another layer of made ground [30]. No artefacts were recovered from this deposit and its precise date is unknown. Layer [30] was first observed at a maximum height of +2.81m OD.

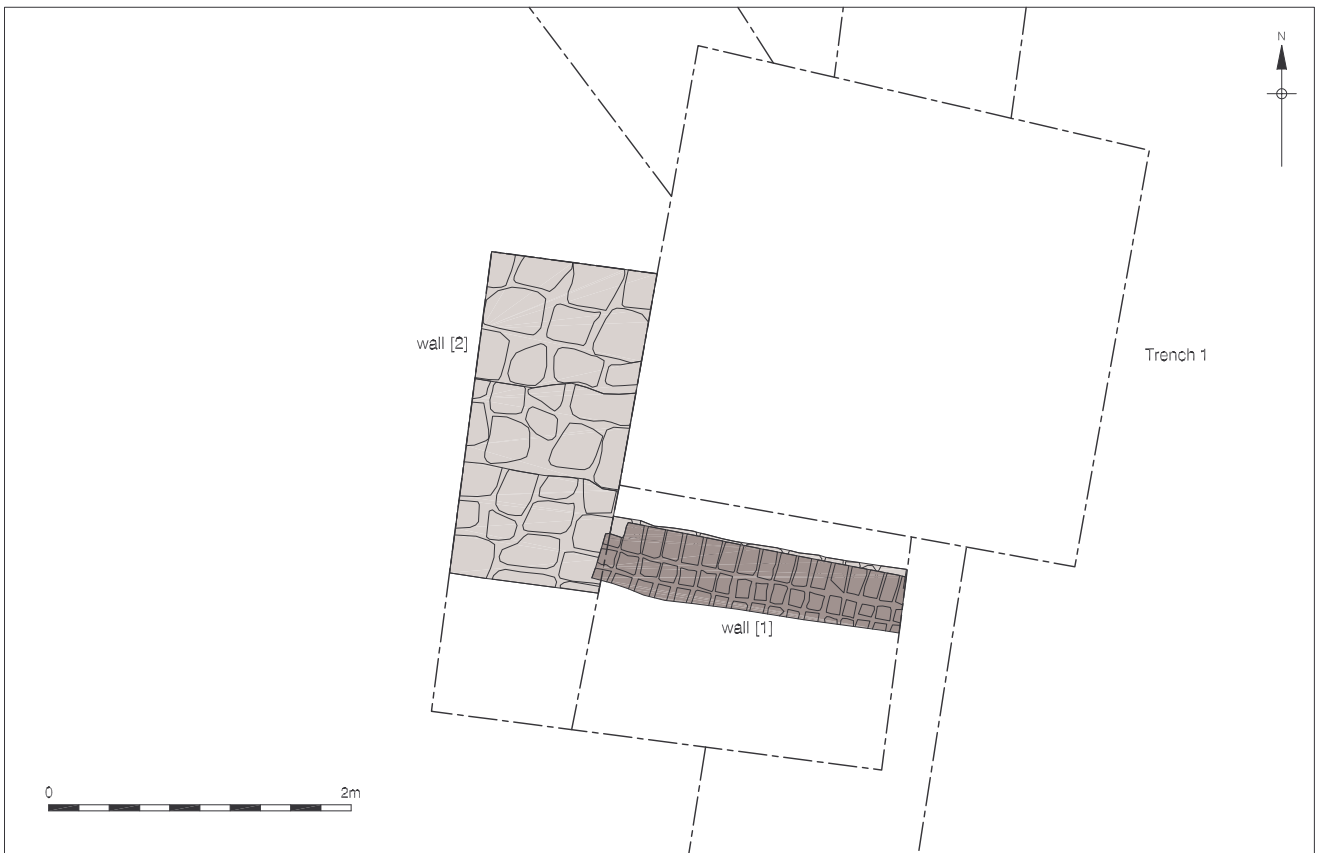
7.4.3 Above context [30] was a series of nine stratified road surfaces (contexts [21-29]) each measuring approximately 0.12m thick to a maximum height of +3.81m OD. The earliest of the road surfaces [29] dated to some time between 1780 to 1900AD. All of the deposits consisted of very compact gravel varying in colour from mid yellowish red to dark greyish brown.

7.4.4 In Trench 1 the cut for the sewer pipe [5] was overlain by a modern made ground surface that was in turn overlain by the concrete slab sealing the area. In Trench 2 the slab was observed directly above the latest of the road surfaces [21]. The slab was recorded at heights between +4.11m OD (Trench 1) and +4.31m OD (Trench 2).





Medieval Wall



Medieval Wall with later brick repair

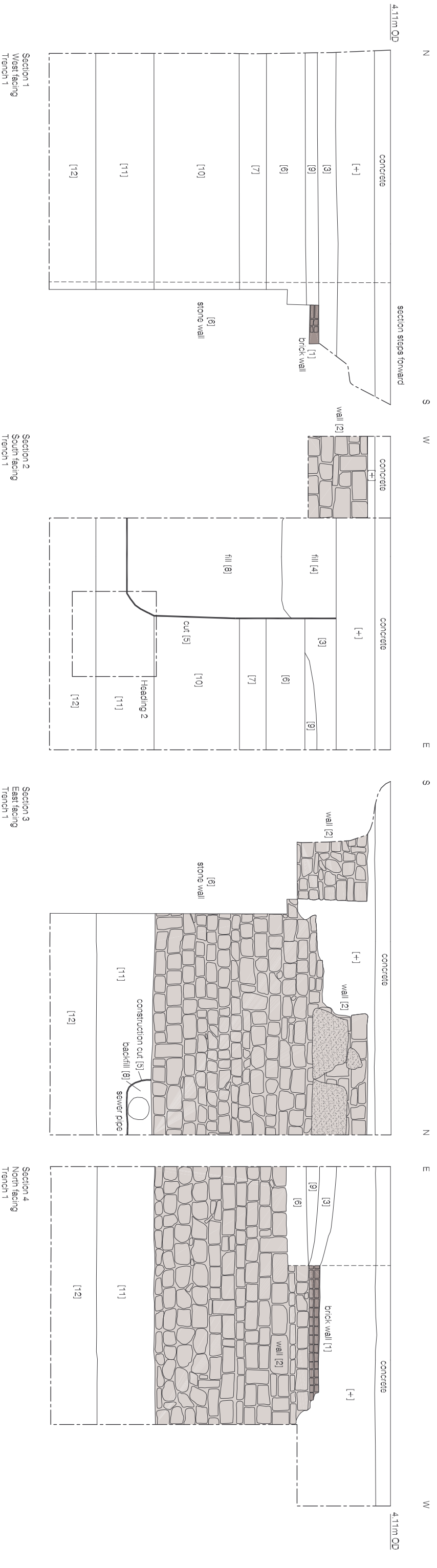
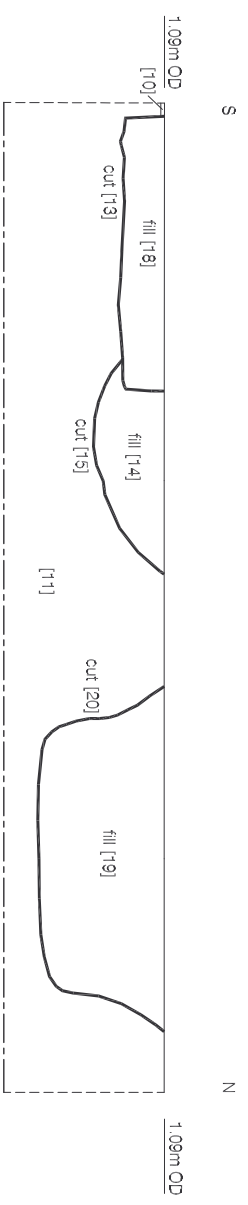
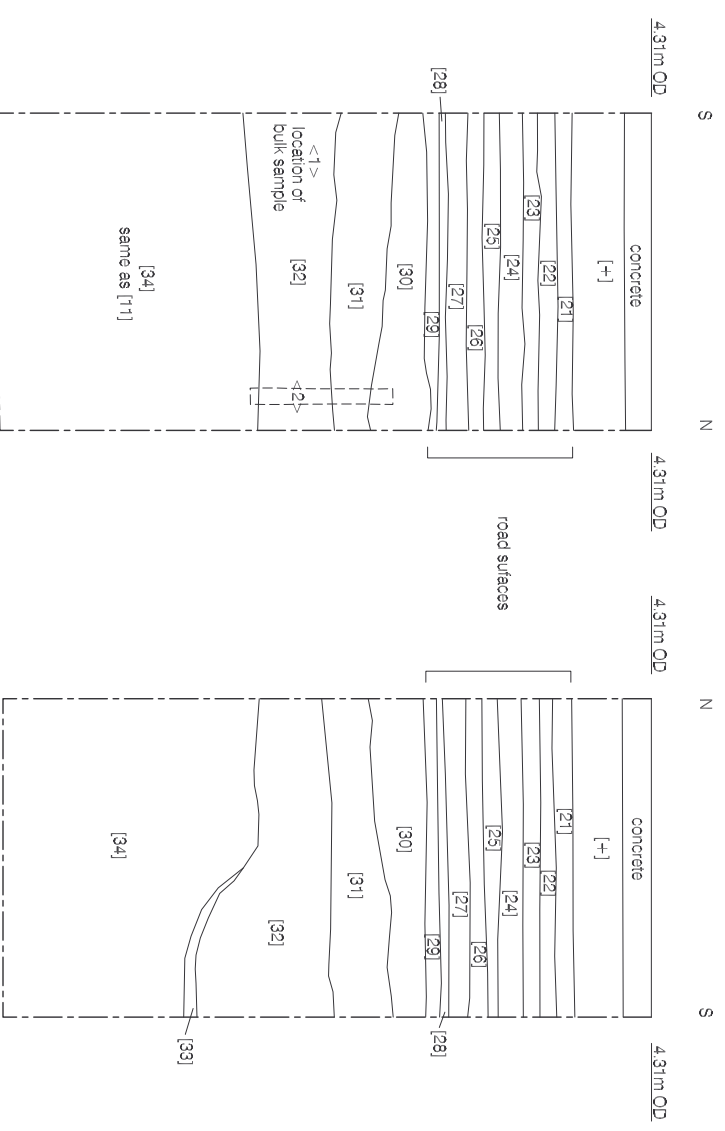


Figure 5
Sections 1 - 4
1:50 at A3



Section 5
East facing
Heading 2



Section 6
East facing
Trench 2

Section 7
West facing
Trench 2



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Figure 6
Section 5 - 7
1:50 at A3

8 INTERPRETATION AND CONCLUSIONS:

8.1 Phase 1: Natural

8.1.1 The natural sequence comprised alluvial deposits of brickearth and gravel consistent with underlying geology of Thorney Island. Work in Trench 2 also identified what is interpreted as a possible palaeochannel, aligned approximately E-W. Finds recovered from the material within the channel suggests that it was filled in sometime during the 13th century.

8.2 Phase 2: Medieval

8.2.1 The earliest evidence of human activity on the site was seen in the form of several archaeological features dating to the medieval period with the earliest of these, an east-west aligned ditch [20] and a pit of unknown function [15], dating from the mid-11th to mid-12th century. During the 13th or 14th century the channel observed in Trench 2 was filled in. Ditch [20] roughly followed the alignment of the channel, which was located approximately 20m to the north of the ditch. While the channel was interpreted as a natural drainage way it is likely that it was utilised as roadside drainage upon the construction of Tothill Street which, according to historic maps, extended all the way to the west gates of the abbey church.

8.2.2 Analysis of the environmental data collected from the deposit [32] showed that pollen from *Poaceae* (grass family), *Cereale* type (e.g. Barley), *Chenopodium* type (e.g. Fat hen), *Centaurea nigra* (Black knapweed), *Centaurea cyanus* (Cornflower), *Anthemis* type (e.g. Stinking chamomile), *Plantago lanceolata* (Ribwort Plantain) and *Lactuceae* (Daisy family) was present within the backfill of the channel. These plants are frequently found in open disturbed ground.

8.2.3 Pit [15] was cut to the south by [13], an east-west aligned construction cut of a wall. The position, width, and alignment of the construction cut suggest that it may have been part of the inner precinct wall as indicated on several historic maps (Morden 1690; Hawksmoor 1731; Keen 1755). Many of these maps show the inner precinct wall adjoining the abbey church along the west side of the turret in the northwest corner of the Jerusalem Chamber and extending to the west. They also show a series of buildings adjoining the south side of the wall. This wall is also depicted in a painting from 1749 by the Italian artist Antonio Canaletto.

8.2.4 The channel fill was overlain by levelling layer dating to the 13th-15th century. This layer was overlain by a layer of made ground, possibly deposited to level the ground surface for the creation or widening of Tothill Street.

8.2.5 The excavation of Trench 1 revealed the southwestern corner of a basemented ragstone building dating to the medieval period. Historic maps dating to the 17th century show buildings along the south side of the inner precinct wall, while 18th century maps identify them as the Chapter Clerk's House and the Bishop of London's Prison. The physical location of the stone wall corresponds with the southwest corner of the Chapter Clerk's House adjoined to the west to the Bishop of London's Prison.

8.2.6 The basement of the building observed in Trench 1 appears to have been partially filled in during the 15th century.

8.3 Phase 3: Post-Medieval

8.3.1 Two courses of red fabric bricks, which overlaid the southern wall segment of the Chapter Clerk's house, probably represent repair work to the building undertaken during the post-medieval period.

8.3.2 An overview of the historical records reveals that the Bishop of London's Prison was demolished in the early 19th century. Although no mention of the Chapter Clerk's building could be found it is possible that this building, adjoining the prison, was demolished at the same time.

8.4 Phase 4: Modern

8.4.1 In Trench 1 a construction cut for a 20th century sewer pipe had truncated the medieval and post-medieval backfill layers of the basement of the Chapter Clerk's house before the entire site was sealed off by a concrete slab and overlying tarmac surface.

8.4.2 Overlying the medieval made ground deposit [31] in Trench 2 was a sequence of post-medieval gravel road surfaces. This sequence likely represents continual surfacing and resurfacing of Tothill Street from the late 17th through the 19th century.

8.5 Conclusions

8.5.1 The watching brief has revealed *in situ* remains of a possible palaeochannel, medieval pitting and a ditch along with a tantalising element of a possible part of the inner precinct wall for the abbey. Masonry remains attest to medieval structures within the abbey precinct, showing evidence for later alteration and rebuilding. Stratified levels of early road surfaces were also found.

8.5.2 Assessment of both the pottery finds and the environmental samples recommend that no further work is necessary on them. It is proposed that this work be published as a note within the *London Archaeologist* Fieldwork Round-up.

9 ACKNOWLEDGEMENTS

- 9.1 Pre-Construct Archaeology Limited would like to thank West One Infrastructure Services who commissioned the work on behalf of Westminster City Council. We also thanks Warwick Rodwell for his input and the staff at Murphys and Tunnel Craft who carried out the work.

- 9.2 The author would like to thank Chris Mayo for his project management, Hayley Baxter and Jennifer Simonson for producing the illustrations, Chris Jarrett for the pottery assessment and ArchaeoScape for the environmental assessment.

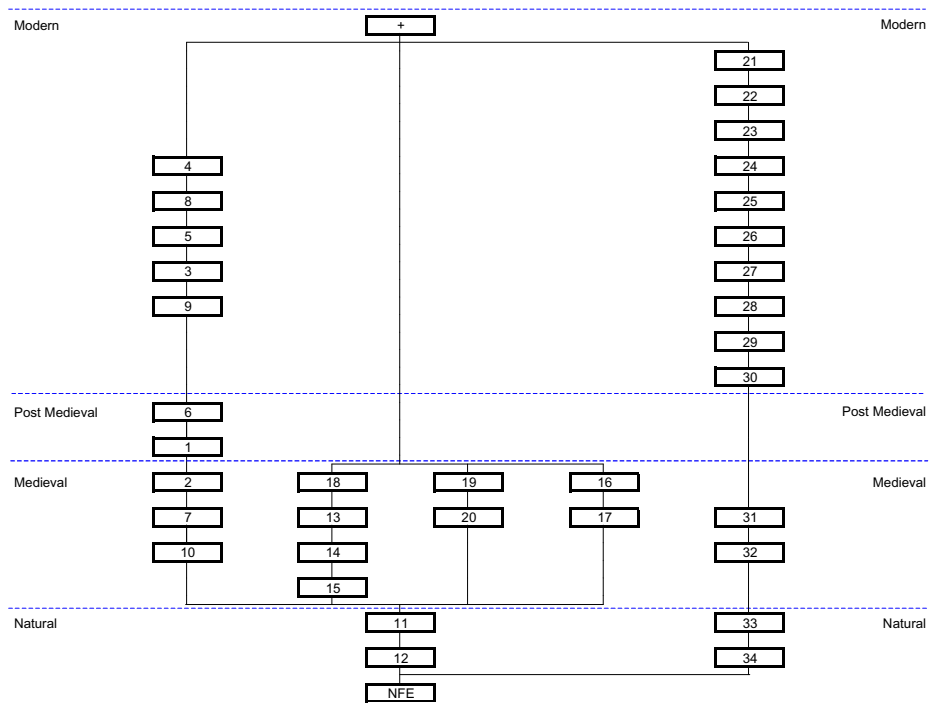
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APPENDIX 1 CONTEXT REGISTER

Context Number	Trench	Plan Number	Section Number	Phase	Type	Description
1	1	1	S.1,4	3	Masonry	Brick repair work to medieval stone wall
2	1	2	S.3,4	2	Masonry	Medieval stone wall
3	1		S.1,2,4	4	Deposit	Post-medieval backfill of medieval basement
4	1		S.2	4	Deposit	Upper fill of [5]
5	1		S.2,3	4	Cut	Construction cut for sewer pipe
6	1		S.1,2,4	3	Deposit	Post-medieval backfill of medieval basement
7	1		S.1,2,4	2	Deposit	Backfill of medieval basement 1400-1500
8	1		S.2,3	4	Deposit	Lower fill of [5] 1820-1900
9	1		S.1,4	4	Deposit	Backfill of medieval basement
10	1		S.1,2,4	2	Deposit	Backfill of medieval basement
11	1, Header 2		S.1-5	1	Layer	Brickearth
12	1, Header 2		S.1-5	1	Layer	Brickearth
13	Header 2		S.5	2	Cut	Construction cut for precinct wall
14	Header 2		S.5	2	Deposit	Backfill of [15] 1140-1220
15	Header 2		S.5	2	Cut	Pit
16	Header 2			2	Deposit	Backfill of [17] 1050-1150
17	Header 2			2	Cut	Pit
18	Header 2		S.5	2	Deposit	Backfill of [13]
19	Header 2		S.5	2	Deposit	Backfill of [20] 1080-1150
20	Header 2		S.5	2	Cut	Ditch
21	2		S.6,7	4	Deposit	Post-medieval gravel road surface
22	2		S.6,7	4	Deposit	Post-medieval gravel road surface
23	2		S.6,7	4	Deposit	Post-medieval gravel road surface
24	2		S.6,7	4	Deposit	Post-medieval gravel road surface
25	2		S.6,7	4	Deposit	Post-medieval gravel road surface
26	2		S.6,7	4	Deposit	Post-medieval gravel road surface
27	2		S.6,7	4	Deposit	Post-medieval gravel road surface
28	2		S.6,7	4	Deposit	Post-medieval gravel road surface
29	2		S.6,7	4	Deposit	Post-medieval gravel road surface 1780-1900
30	2		S.6,7	4	Deposit	Dump layer
31	2		S.6,7	2	Deposit	Medieval made ground 1240-1400
32	2		S.6,7	2	Deposit	Organic Layer 1240-1400
33	2		S.7	1	Deposit	Gravel streambed
34	2		S.6,7	1	Deposit	Brickearth

APPENDIX 2 SITE MATRIX



APPENDIX 3 ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

THE SANCTUARY, WESTMINSTER ABBEY, CITY OF WESTMINSTER LONDON (SITE CODE TSA08): ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

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INTRODUCTION

This report summarises the findings arising out of the environmental archaeological assessment undertaken by *ArchaeoScapeTM* associated with drainage repair works at the Sanctuary, Westminster Abbey, City of Westminster, London (National Grid Reference: TQ 2997 7948 Site Code: TSA08). One column sample was excavated during recent archaeological investigations at the site undertaken by Pre-Construct Archaeology Limited (PCA Ltd) for environmental archaeological assessment, and possible future analysis.

The overarching aim of the environmental archaeological assessment was to evaluate the potential of the sedimentary sequence for reconstructing the environmental history of the site and its environs. In order to achieve this aim, the environmental archaeological assessment consisted of:

1. Recording the lithostratigraphy of the column sample to provide a preliminary reconstruction of the sedimentary history
2. Assessment of the preservation and concentration of pollen grains and spores (column samples) to provide a preliminary reconstruction of the vegetation history, and to detect evidence for human activities
3. Assessment of the preservation and concentration of diatom frustules (column samples) to provide a preliminary reconstruction of the hydrological history e.g. water quality and depth
4. Assessment of the preservation and concentration of macroscopic plant remains (waterlogged and charred seeds and wood) and insect remains (from selected bulk samples) to provide a preliminary reconstruction of the vegetation history and general environmental context of the site.

GEOLOGICAL CONTEXT

The site lies within the Abbey precincts near the south west corner of the Abbey Church. The Abbey and the immediately surrounding area occupy the site of the former Thorney Island, an area underlain by sand and gravel and forming a dryland area in the prehistoric and early historic periods slightly above surrounding tidal creeks and water courses, including the lower reaches of the Tyburn, a minor left-bank tributary of the Thames. In the Anglo-Saxon period branches of the Tyburn appear to have passed to north and south of Thorney Island, with the southern branch having an alignment parallel with and slightly to the south of Great Peter Street. There is evidence for the intermittent prehistoric occupation of Thorney Island from the Mesolithic onward (Thomas, 2000). Historic occupation leading to the development of the Abbey, the Royal Palace and the Parliament buildings appears to have begun in the 10th century and occupation has been continuous and intensive since then. The British Geological Survey (1:50,000 Sheet 270 South London 1998) shows the area around Westminster

Abbey as a small, 'island' of Kempton Park Gravel, surrounded by alluvium. Sub-surface conditions beneath the 'high ground' of the island have not been extensively investigated but there is sedimentary evidence for widespread flooding of the island on at least one occasion in the early medieval period, ca. AD1050 (Thomas 2000). Investigation of sites on the lower ground around the island (Sidell, *et al* 2000) have recorded sediment sequences preserved in former channels and dating from the fifth millennium BP up into the historic period. Excavations in the immediate vicinity of the Abbey appear generally to have been shallow and all those recorded by Thompson *et al* (1998) encountered stratified archaeological horizons without penetrating the underlying geology.

METHODS

Lithostratigraphic descriptions

The lithostratigraphy of all the column sample (Table 1) was described in the laboratory using standard procedures for recording unconsolidated sediment, 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; gravel, fine sand, silt and clay, and (4) recording the unit boundaries e.g. sharp or diffuse.

Pollen assessment

Fourteen sub-samples were extracted from the column sample for pollen assessment. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) deflocculation of the sample in 1% Sodium pyrophosphate; (3) sieving of the sample to remove coarse mineral and organic fractions (>125 μ); (4) acetolysis; (5) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm³); (6) mounting of the sample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control is maintained by periodic checking of residues, and assembling sample batches from various depths to test for systematic laboratory effects. Pollen grains and spores were identified using the Royal Holloway (University of London) pollen type collection and the following sources of keys and photographs: Moore *et al.* (1991); Reille (1992). Plant nomenclature follows the Flora Europaea as summarised in Stace (1997). The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of pollen grains and spores, and the principal pollen taxa (Table 2).

Diatom assessment

Fourteen sub-samples were extracted the column sample for assessment of diatoms. The diatom extraction involved the following procedures (Battarbee *et al.*, 2001):

1. Treatment of the sub-sample (0.2g) with Hydrogen peroxide (30%) to remove organic material and Hydrochloric acid (50%) to remove remaining carbonates
2. Centrifuging the sub-sample at 1200 for 5 minutes and washing with distilled water (4 washes)

3. Removal of clay from the sub-samples in the last wash by adding a few drops of Ammonia (1%)
4. Two slides prepared, each of a different concentration of the cleaned solution, were fixed in mounting medium of suitable refractive index for diatoms (Naphrax)

The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of diatoms (Table 3).

Bulk sample assessment (plant macrofossils and insect remains)

Four bulk samples were processed from the main lithostratigraphic units in the column sample for the assessment of waterlogged and charred plant macrofossils (seeds and wood) and insect remains. The bulk samples were wet-sieved using 300 micron and 1mm mesh sizes. The residues were scanned using a low power zoom-stereo microscope and identifications made using keys, photographs and reference collections at Royal Holloway (Table 4). Plant nomenclature follows Stace (1997).

RESULTS AND INTERPRETATION OF THE LITHOLOGICAL ASSESSMENT

The trench from which the column sample was taken was put down from a concrete surface at 4.31m OD and passed through a sequence of road surfaces - contexts (21-29) into a road sub-base (30) overlying building material debris (mortar layer) (31). The mortar layer rested on sediment described in the field as peat (32) overlying 'brickearth' (34).

The column sample was taken to include representative parts of contexts (30), (31), (32) and (34). In describing the column sample, seven units were recognised. At the base, Unit 1, equivalent to context (34), was a dark grey sandy silt at a level between 1.66m and 1.88m OD and incorporating a variety of anthropogenic material, including ceramic fragments, mortar and charcoal as well as pieces of bone and mollusc shell.

Context (34) passed up through a diffuse boundary into context (32) which was subdivided into three units (2-4) in the column sample, but in total was only 0.34m in thickness. These units were all dark grey in colour (10YR4/1) and were differentiated on the basis of texture, organic content and the nature of anthropogenic inclusions. Visible organic content decreased upward; texture coarsened upward and in Unit 4 the variety of anthropogenic material increased. Wood (Units 2 and 3), bone (Unit 2) and charcoal (Unit 3) were replaced in Unit 4 by charcoal, shell, chalk and ceramic fragments.

Unit 4, context (32) was overlain with a sharp contact by context (31), the mortar layer, which was subdivided in the column sample into a lower unit (Unit 5) comprising a thin layer (0.05m) of light olive brown sand; and an upper unit (Unit 6) comprising a thicker layer (0.21m) of pale brown sandy gravel with pieces of mortar.

The overlying Unit 7, equivalent to context (30) was separated by a sharp contact from Unit 6. Unit 7 was a dark grey silty and sandy gravel incorporating tile fragments and charcoal.

TABLE 1: LITHOSTRATIGRAPHIC DESCRIPTION, THE SANCTUARY, WESTMINSTER ABBEY, CITY OF WESTMINSTER, LONDON

Depth (m OD)	Depth from surface (m)	Context number	Unit number	Description
2.60 to 2.46	0.00 to 0.14	(30)	7	5YR 4/1 Dark grey silty sandy gravel (Ga2 Ag1 Gg1) containing fragments of tile and charcoal; sharp contact with
2.46 to 2.25	0.14 to 0.35	(31)	6	10YR 6/3 Pale brown sandy gravel (Ga2 Gg2) with pieces of mortar; sharp contact with
2.25 to 2.20	0.35 to 0.40	(31)	5	2.5Y 5/6 Light olive brown sand (Ga4); sharp contact with
2.20 to 2.10	0.40 to 0.50	(32)	4	10YR 4/1 Dark grey clayey sandy silt with gravel (As1 Ag2 Ga1 Gg+) charcoal; shell; chalk; ceramic fragments; diffuse contact with
2.10 to 2.03	0.50 to 0.57	(32)	3	10YR 4/1 Dark grey silty clay with sand and some organic material; As2 Ag2 Ga+ Sh+; wood and charcoal present; diffuse contact with
2.03 to 1.88	0.57 to 0.72	(32)	2	10YR 4/1 Dark grey silty clay with sand (As2 Ag1 Sh1 Gg+); bone; wood; and some patches of grey sandy clay (As4 Ga+); diffuse contact with
1.88 to 1.66	0.72 to 0.94	(34)	1	10YR 4/1 Dark gray clayey sandy silt (As1 Ag2 Ga1); ceramic fragments; shell; bone; concrete; mortar and fragments of charcoal

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RESULTS AND INTERPRETATION OF THE POLLEN ASSESSMENT

Fourteen sub-samples were extracted from the column sample for pollen assessment (Table 2). The results indicate poor pollen concentrations and preservation throughout the sequence. This can be attributed to the physical and/or chemical properties of the sediments at the time of deposition, and changes in these properties over time. These properties include coarse particle size (e.g. sand and gravel), which may cause physical destruction, and high pH due to calcium carbonate-rich groundwater, which may cause chemical deterioration. However, those taxa present frequently include Poaceae (grass family), *Cereale* type (e.g. Barley), *Chenopodium* type (e.g. Fat hen), *Centaurea nigra* (Black knapweed), *Centaurea cyanus* (Cornflower), *Anthemis* type (e.g. Stinking chamomile), *Plantago lanceolata* (Ribwort Plantain) and Lactuceae (Daisy family). These herbaceous taxa are all associated with open disturbed ground.

TABLE 2: POLLEN-STRATIGRAPHIC ASSESSMENT, THE SANCTUARY, WESTMINSTER ABBEY, CITY OF WESTMINSTER, LONDON

Depth (m OD) From To		Depth (m from surface) From To		Context number	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (excellent)
2.18	2.17	0.42	0.41	(32)	Poaceae <i>Chenopodium</i> type cf <i>Cereale</i> type	Grass family e.g. Fat hen e.g. Barley	1	1
2.14	2.13	0.46	0.45	(32)	Lactuceae Poaceae <i>Ulmus</i>	Daisy family Grass family Elm	1-2	2
2.10	2.09	0.5	0.49	(32)	cf <i>Plantago lanceolata</i>	Ribwort plantain	1	1
2.06	2.05	0.54	0.53	(32)	<i>Plantago lanceolata</i> Poaceae <i>Cereale</i> type <i>Aster</i> type	Ribwort plantain Grass family e.g. Barley e.g. creeping thistle	1-2	2
2.02	2.01	0.58	0.57	(32)	Poaceae cf <i>Artemisia</i>	Grass family Mugwort	1	1-2
1.98	1.97	0.62	0.61	(32)	cf <i>Anthemis</i> type Poaceae <i>Cereale</i> type Lactuceae <i>Plantago lanceolata</i>	e.g. Stinking chamomile Grass family e.g. Barley Daisy family Ribwort plantain	2	2
1.94	1.93	0.66	0.65	(32)	Poaceae Lactuceae <i>Aster</i> type	Grass family Daisy family e.g. e.g. creeping thistle	2-3	2
1.90	1.89	0.7	0.69	(32)	Lactuceae Poaceae <i>Centaurea nigra</i> <i>Anthemis</i> type	Daisy family Grass family Black knapweed e.g. Stinking chamomile	2	2
1.86	1.85	0.74	0.73	(34)			0	0
1.82	1.81	0.78	0.77	(34)	<i>Centaurea nigra</i> <i>Sinapis</i> type <i>Anthemis</i> type	Black knapweed e.g. Charlock e.g. Stinking chamomile Grass family	1-2	2

					Poaceae			
1.78	1.77	0.82	0.81	(34)	<i>Plantago lanceolata</i>	Ribwort plantain	1	3
1.74	1.73	0.86	0.85	(34)			0	0
1.70	1.69	0.9	0.89	(34)	<i>Anthemis</i> type <i>Centaurea cyanus</i> Poaceae	e.g. Stinking chamomile Cornflower Grass family	1-2	1-2
1.66	1.65	0.94	0.93	(34)	<i>Anthemis</i> type Poaceae <i>Cereale</i> type	e.g. Stinking chamomile Grass family e.g. Barley	1	2

RESULTS AND INTERPRETATION OF THE DIATOM ASSESSMENT

Fourteen sub-samples were taken from the column sample for assessment of the diatom content (Table 3). The results of the diatom assessment indicate low to moderate diatom concentrations in a moderate state of preservation throughout contexts (32) and (34).

TABLE 3: DIATOM ASSESSMENT, THE SANCTUARY, WESTMINSTER ABBEY, CITY OF WESTMINSTER, LONDON

Depth (m OD)		Depth (m from surface)		Context number	Concentration 0 (none) to 4 (abundant)	Preservation 0 (none) to 4 (excellent)	Weight (g)
2.18	2.17	0.42	0.41	(32)	2-3	3	0.96
2.14	2.13	0.46	0.45	(32)	2-3	3	0.83
2.10	2.09	0.5	0.49	(32)	2-3	2	0.91
2.06	2.05	0.54	0.53	(32)	1	3	0.96
2.02	2.01	0.58	0.57	(32)	2	2	0.99
1.98	1.97	0.62	0.61	(32)	2	2	0.92
1.94	1.93	0.66	0.65	(32)	2	2	1.03
1.90	1.89	0.7	0.69	(32)	1-2	1-2	1
1.86	1.85	0.74	0.73	(34)	2	1-2	0.95
1.82	1.81	0.78	0.77	(34)	2-3	1	0.92
1.78	1.77	0.82	0.81	(34)	1	1-2	0.99
1.74	1.73	0.86	0.85	(34)	1-2	1	0.97
1.70	1.69	0.9	0.89	(34)	2	1-2	0.99
1.66	1.65	0.94	0.93	(34)	1	2-3	0.98

RESULTS AND INTERPRETATION OF THE PLANT MACROFOSSIL AND INSECT ASSESSMENT

Four bulk samples were processed from the column for assessment of the waterlogged and charred plant macrofossils (Table 4). Varying (generally low) quantities of charcoal, waterlogged seeds and monocots were recorded in all samples. Waterlogged wood was preserved in low quantities in samples from 2.10m to 2.03m OD; 2.03m to 1.88m OD, and 1.88m to 1.66m OD. Mollusca was recorded in low to moderate quantities in samples 2.20m to 2.10m OD; 2.10m to 2.03m OD; 1.88m to 1.66m OD. A single bone fragment was recorded in the uppermost sample (2.20m to 2.10m OD). Only one sample (2.10m to 2.03m OD) contained any insect remains, which consisted of two weevil fragments, while no charred seeds were recorded in any sample.

TABLE 4: BULK SAMPLE ASSESSMENT, THE SANCTUARY, WESTMINSTER ABBEY, CITY OF WESTMINSTER, LONDON

Depth (m OD)	Depth (m from surface)	Context number	Volume (L)	Fraction	Charred		Waterlogged		Mollusca	Monocots	Bone	Insects
					Wood	Seeds	Wood	Seeds				
2.20 to 2.10	0.40 to 0.50	(32)	0.25	<300µm	1	-	-	2	1	1	1	-
				>1mm	2	-	-	2	3	2	-	N/A
2.10 to 2.03	0.50 to 0.57	(32)	0.15	<300µm	1	-	-	-	-	2	-	1 (weevils)
				>1mm	2	-	2	2	2	2	-	N/A
2.03 to 1.88	0.57 to 0.72	(32)	0.25	<300µm	1	-	-	1	-	4	-	-
				>1mm	2	-	2	-	-	4	-	N/A
1.88 to 1.66	0.72 to 0.94	(34)	0.4	<300µm	1	-	-	1	-	-	-	-
				>1mm	1	-	1	-	2	2	-	N/A

Key:

1 =	1 to 25	2 =	26 to 50	3 =	51 to 75	4 =	76 to 100
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DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

It is evident that the trench from which the column sample was taken did not penetrate into natural sediments. All the sediment contained within the column sample included evidence of nearby anthropogenic activity and although the diversity of the anthropogenic material varied through the sequence, building debris was present at the top and at the bottom. The sediment forming the lower part of the sequence recorded in the column sample (units 1-4) is rather uniform in terms of colour and texture with no obvious erosional contacts between units. It comprises the local natural sediment mixed with variable amounts of anthropogenic material and moved over short distances probably by a variety of processes, none of which has left a strong imprint on the sediment. No primary depositional structures were recorded in any of this material and it seems likely that it all represents the infill of a quarry, pit or ditch. There is a subtle change between Unit 1 and the overlying units (2 and 3), recorded as an increase in the organic content and a decrease in the diversity of anthropogenic material in the overlying material (Units 2 and 3). This suggests a slight change in the depositional environment, probably towards a slower rate of accumulation, with less anthropogenic disturbance in the immediate vicinity of the site. Units 2 and 3 together are only 0.22m in thickness and might represent the infill of a shallow depression in the surface of the sediment forming Unit 1. The return of more disturbed conditions in the sediment source area is indicated in Unit 4 with the renewed incoming of fine gravel and a greater diversity of anthropogenic material. The overlying contexts (31) and (30) were recognised in the field as artificial layers associated with building and ground preparation work.

The results of the pollen assessment indicate low to moderate concentrations in a low to moderate state of preservation, which was attributed to the physical and/or chemical properties of the sediments at the time of deposition, and changes in these properties over time. Those taxa present throughout the sequence included grasses, cereals, fat hen, black knapweed, cornflower, stinking chamomile and ribwort plantain, all of which are associated with open disturbed ground. Diatom concentrations and preservations were moderate throughout the sequence. Charred and waterlogged plant remains were in low to moderate concentrations throughout. Insect remains were near absent. No further work is recommended on the samples taken from Westminster Abbey.

APPENDIX 4: POST-ROMAN FINDS ASSESSMENT: POTTERY, CLAY AND TOBACCO PIPE (TSA08)

Chris Jarrett

POST-ROMAN POTTERY ASSESSMENT

INTRODUCTION

A small sized assemblage of pottery was recovered from the site (1 box). Most sherds show no or little evidence for abrasion indicating mostly rapid deposition after breakage. The pottery is fragmentary and it was not always possible to assign to a vessel shape, but complete profiles are present. Pottery was recovered from eight contexts and individual deposits produced only small groups of pottery (under 30 sherds).

All the pottery (29 sherds and none is 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. The pottery is discussed by types and its distribution.

THE POTTERY TYPES

Medieval

There are 23 sherds of medieval pottery

Early medieval

Early medieval grog-tempered ware, (EMGR), 1050-1150, one sherd, form: unidentified.

Early medieval shell-tempered ware, (EMSH), 1050-1150, one sherd, form: jar

Early Surrey ware, (ESUR), 1050-1150, one sherd, form: unidentified.

London-area greyware, (LOGR), 1050-1170, eleven sherds, form: jar, rounded.

London area glazed red earthenwares

Shelly-sandy ware, (SSW), 1140-1220, four sherds, form: jar.

Coarse London-type ware, (LCOAR), 1080-1200, one sherd, form: jug.

Late London-type ware, (LLON), 1400-1500, one sherd, form: unidentified

Surrey whitewares

Kingston-type ware, (KING), 1240-1400, two sherds, forms: bowl or dish, jug, rounded.

Cheam whiteware, (CHEA), 1350-1500, one sherd, form: unidentified

Post-Medieval

There are six sherds of post-medieval pottery.

Non-local

Plain yellow ware (YELL), 1820-1900, one sherd, form: unidentified.

Porcelain

English hard paste porcelain (ENPO HP), 1780-1900, one sherd, form: unidentified.

Industrial finewares

Transfer-printed whiteware (TPW), 1780-1900, three sherds, form: bowl, medium rounded.

Imported ware

Chinese blue and white porcelain (CHPO BW), 1590-1900, one sherd, form: plate.

DISTRIBUTION

The distribution of the pottery is shown in Table 1 and shows the number of sherds, the date range of the pottery, the fabric types and a spot date for each context.

Context	Phase	Sherd count	Date range of the pottery	Latest dated pottery type	Fabrics	Spot date
[7]	3	2	1350-1500	1400-1500	CHEA, LLON	1400-1500
[8]	3	5	1590-1900	1820-1900	CHPO BW, TPW, YELL	1820-1900
[14]	2	5	1050-1220	1140-1220	LOGR, SSW	1140-1220
[16]	2	3	1050-1170	1050-1150	EMGR, ESUR, LOGR	1050-1150
[19]	2	11	1050-1200	1080-1200	EMSH, LCOAR, LOGR	1080-1150
[29]	3	1	1780-1900	1780-1900	TPW	1780-1900
[31]	2	1	1240-1400	1240-1400	KING	1240-1400
[32]	2	1	1240-1400	1240-1400	KING	1240-1400

Table 1.TSA08: distribution of the pottery

SIGNIFICANCE, POTENTIAL AND RECOMMENDATIONS FOR FURTHER WORK

The post-Roman pottery from the site has no significance at a local, regional and international level. The pottery has a ceramic profile in keeping with London and its environs. The assemblage is comprised of a small number of sherds and reflects medieval and post-medieval activity in and around the palace and abbey of Westminster. Similar assemblages of

pottery have been noted at Westminster Abbey (Goffin 1995) and Deans Yard (Murray 2003). The pottery's potential is only to date the contexts it was found in. No recommendations are made for further work.

References

- Goffin, R. 1995. 'The medieval and later pottery', in P. Mills, 'Excavation at the dorter undercroft, Westminster Abbey', London and Middlesex Archaeological Society, 46, 80-87.
- Mills P., 1995 'Excavation at the dorter undercroft, Westminster Abbey', London and Middlesex Archaeological Society, 46, 69-124.
- Murray, J. 2003. 17 Dean's Yard, Westminster: Archaeological investigations. Medieval Archaeology 47, 41-52.

THE CLAY TOBACCO PIPES

Chris Jarrett

There is a single bowl fragment, probably of Atkinson and Oswald's type 30 (AO30), dated 1850-1910 and has on the stem impressed in incuse lettering 'HIGGINS' and 'LONDON'. The type of stamping dated to the end of 19th century, c. 1870 onwards and the name Higgins probably refers to H. Higgins a 19th-century London tobacco merchant. The clay tobacco pipe comes from context 12, phase 3.

APPENDIX 5: OASIS REPORT FORM

OASIS ID: preconst1-48774

Project details

Project name	The Sanctuary, Westminster Abbey
Short description of the project	An archaeological watching brief during drainage repair work was undertaken from 4th of February to May 2008, by Pre-Construct Archaeology Limited at The Sanctuary, Westminster Abbey, City of Westminster, London. The scope of the project included monitoring the excavation of two trenches or access shafts as well as two headers excavated in an attempt to repair a collapsed main sewer running along Broad Sanctuary and Victoria Street.
Project dates	Start: 04-02-2008 End: 24-05-2008
Previous/future work	No / Not known
Any associated project codes	TSA08 - Sitecode reference
Site status	World Heritage Site
Current Land use	Transport and Utilities 1 - Highways and road transport
Monument type	WALL Medieval
Monument type	PIT Medieval
Monument type	WALL Post Medieval
Monument type	DITCH Medieval
Monument type	ROAD Post Medieval
Significant Finds	POTTERY Medieval
Significant Finds	CBM Medieval

Project location

Country	England
Site location	GREATER LONDON CITY OF WESTMINSTER WESTMINSTER The Sanctuary, Westminster Abbey
Postcode	SW1P 3PA
Study area	65.00 Square metres
Site coordinates	TQ 2998 7946 51.4986111111 -0.127222222222 51 29 55 N 000 07 38 W Point

Project creators

Name of Organisation	Pre-Construct Archaeology Ltd
Project design originator	Chris Mayo
Project director/manager	Chris Mayo
Project supervisor	Paw Jorgensen

Project archives

Physical recipient	Archive LAARC
Physical Contents	'Ceramics','Glass','Leather','other'
Digital recipient	Archive LAARC
Digital available	Media 'Database','Images raster / digital photography','Spreadsheets','Text'

Paper recipient	Archive LAARC
Paper available	Media 'Context sheet', 'Drawing', 'Matrices', 'Photograph', 'Plan', 'Report', 'Section', 'Survey', 'Unpublished Text'

Project bibliography

1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Watching Brief During Drainage Repair Works at the Sanctuary, Westminster Abbey, City of Westminster, London
Author(s)/Editor(s)	Jorgensen, P.
Date	2008
Issuer or publisher	Pre-Construct Archaeology Ltd
Place of issue or publication	Brockley, London
Description	Unpublished client report

Entered by	Paw Jorgensen (pjorgensen@pre-construct.com)
Entered on	24 September 2008