

**ROYAL GARRISON CHURCH
OF ST GEORGE,
GRAND DEPOT ROAD,
WOOLWICH,
ROYAL BOROUGH OF
GREENWICH:
AN ARCHAEOLOGICAL
WATCHING BRIEF**

SITE CODE: SGE14

PCA REPORT NO. R12012

MARCH 2015



PRE-CONSTRUCT ARCHAEOLOGY

**ROYAL GARRISON CHURCH OF ST GEORGE, GRAND DEPOT ROAD, WOOLWICH,
ROYAL BOROUGH OF GREENWICH
AN ARCHAEOLOGICAL WATCHING BRIEF**

Site Code: SGE14

Local Planning Authority: London Borough of Greenwich

Planning Reference Number: 11/0416/L and 13/1742/L

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DOCUMENT VERIFICATION

ROYAL GARRISON CHURCH OF ST GEORGE,
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WOOLWICH,
ROYAL BOROUGH OF GREENWICH

ARCHAEOLOGICAL WATCHING BRIEF

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CONTENTS

1 Abstract	3
2 Introduction	4
3 Planning Background	6
4 Geology and Topography	8
5 Archaeological and Historical Background	9
6 Archaeological Methodology	11
7 Results	13
8 The Archaeological Sequence	17
9 Research Objectives and Conclusions	
10 Acknowledgements	24
11 Bibliography	25

Appendices

Appendix 1: Context Index	27
Appendix 2: Pottery Assessment	28
Appendix 3: Ceramic Building Material Assessment	30
Appendix 4: Oasis Data Form	32

Figures

Figure 1: Site Location	
Figure 2: Detailed Site Location	
Figure 3: 1914 Ordnance Survey	
Figure 4: 1935 Ordnance Survey	
Figure 5: 1956 Ordnance Survey	
Figure 6: Pile Foundations and Test Pit Location Plan	
Figure 7: Plan of Pile Foundation Pit B2; Sections 7 and 10	
Figure 8: Plan of Pile Foundation Pits A1 and Bi showing Outbuilding	

1 ABSTRACT

- 1.1 Pre-Construct Archaeology were commissioned by Thomas Ford Architects on behalf of the Heritage of London Trust to carry out an archaeological watching brief on groundworks at the ruined Royal Garrison Church of St George, Grand Depot Road, Woolwich, Royal Borough of Greenwich, centred at Ordnance Survey National Grid Reference TQ 543346 178286. The Heritage of London Trust is a building preservation group that helps to save and regenerate London's unique historic buildings and monuments. The ruined church is Grade II Listed and is described in its listing citation as: 'St George's Chapel (Ruin). 1863 by T H Wyatt. Bombed in World War II and now roofless and fragmentary. What remains is of Romanesque style in stock brick with dressings of red and blue brick and stone.'
- 1.2 The ruined church is currently on English Heritage's Heritage at Risk Register and Listed Building Consent (13/1742/L) has been granted for the 'removal of damaged temporary roof structure, installation of independent timber arched (Gulam) roof structure and restoration of memorial mosaics'. The archaeological watching brief was carried out as a condition of planning consent. In April 2014, a trial trench against the outside of the south wall of the Nave was monitored. Further watching brief visits were undertaken in December 2014 during the excavation of eight square pile foundation pits and in January 2015 during the excavation of a storm water drain trench.
- 1.3 To the south of the church, the excavation of foundation pile pits for the new roof pillars revealed a medieval, tile-built kiln dating to the 13th/14th century. The kiln, as well as a nearby pit and another tile-built structure all contained fragments of green-glazed London-type ware pottery in both its decorated and undecorated forms. By inference it is likely that the kiln was one of the few known centres for the production for this type of pottery making it a discovery of local importance. It is possible that due to the two types of London-type ware present, the site may have persisted for several decades before the eventual collapse or abandonment of the kiln.
- 1.4 Natural geological deposits were encountered during the watching brief at depths of over 1.8m to the south and east of the church.
- 1.5 To the north of the church, and directly under the turf, several demolition layers were discovered as well as the vestiges of wall foundations. Early 20th century photographs of the church and maps shown that an ancillary building stood to the north of the church. This church room was built during the renovations to the church by Burke & Co in 1902 and 1903. The remains of the walls found during the watching brief were thought to be from the east wall of this building and from an extension to it to the east. Other walls found to the south of the church were interpreted as the remains of a flight of stairs up to the south doorway of the church.

2 INTRODUCTION

- 2.1 Pre-Construct Archaeology Limited was commissioned by Thomas Ford and Partners on behalf of Heritage of London Trust to carry out an archaeological watching brief during groundworks at the ruined Church of St George, Grand Depot Road, Woolwich, Royal Borough of Greenwich, SE18 4BG. The site is located within the Royal Borough of Greenwich and is centred at Ordnance Survey National Grid Reference TQ 543346 178286 (**Figures 1 and 2**).
- 2.2 The Heritage of London Trust is a building preservation group which covers Greater London. It has over 30 years experience in helping community groups to save, regenerate and enjoy London's unique historic buildings and monuments. Its aim is to see London's rich heritage preserved for future generations to enjoy.
- 2.3 The ruined church is Grade II Listed and is described in its listing citation as follows:
'St George's Chapel (Ruin). 1863 by T H Wyatt. Bombed in World War II and now roofless and fragmentary. What remains is of Romanesque style in stock brick with dressings of red and blue brick and stone. Apsidal East end has central window defined in coloured tiles with patterns and inscriptions. Reredos inlaid in coloured marbles with mosaic picture of St George. Tall columns with Early Christian capitals support vanished chancel arch. Apsidal aisle chapels have mosaics of peacocks and vines. Also remaining West entrance has projecting porch with round arch of red and grey brick in several planes. Outer quatrefoil granite columns with angel heads on capitals, inner stone columns with foliated capitals. Side entrances with columns similar to inner ones of main arch'.
- 2.4 The ruined church is currently on English Heritage's Heritage at Risk Register and Listed Building Consent (13/1742/L) has been granted for the 'removal of damaged temporary roof structure, installation of independent timber arched roof structure and restoration of memorial mosaics'. Condition 4 attached to the consented scheme states that:
'Any hidden historic features which are revealed during the course of works shall be retained in situ, work suspended in the relevant area of the building and the Council as local planning authority notified immediately. Provision shall be made for their retention and/or proper recording, as required by the Council.
Reason: To ensure that an appropriate record is made of any fabric of architectural/historic/archaeological significance which may be revealed or affected by the works hereby approved and in order to safeguard the special architectural or historic interest of the building and to ensure compliance with Policy 7.8 of the London Plan, Policies D18 and D19 of the Unitary Development Plan 2006 and Policies DH3 and DH(I) of the Draft Core Strategy'.
- 2.5 The site was recorded using the unique site code SGE14 issued by the Museum of London. The completed archive comprising written, drawn and photographic records will, upon completion of the project, be deposited with the London Archaeological Archive and Research Centre (LAARC) under that code.
- 2.6 The watching brief carried out by Pre-Construct Archaeology Limited in accordance with a Written Scheme of Investigation (Garwood 2014), which was approved in advance of the work by Mark Stevenson, English Heritage Greater London Archaeological Advisor to the Royal Borough of
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Greenwich.

3 PLANNING BACKGROUND

3.1 National Planning Policy Framework (NPPF)

- 3.1.1 In March 2012 the Department for Communities and Local Government issued the National Planning Policy Framework (NPPF), replacing Planning Policy Statement 5 (PPS5) 'Planning for the Historic Environment' which itself replaced Planning Policy Guidance Note 16 (PPG16) 'Archaeology and Planning'. It provides guidance for planning authorities, property owners, developers and others on the investigation and preservation of heritage assets.
- 3.1.2 In considering any planning application for development, the local planning authority will be guided by the policy framework set by government guidance, in this instance NPPF, by current Unitary Development Plan policy and by other material considerations.

3.2 Regional Guidance: The London Plan

- 3.2.1 The over-arching strategies and policies for the whole of the Greater London area are contained within the Greater London Authority's London Plan (July 2011) which includes the following statement relating to archaeology.

Policy 7.8: Heritage assets and archaeology

Strategic

- A London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.
- B Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.

Planning decisions

- C Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.
- D Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.
- E New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.

LDF preparation

- F Boroughs should, in LDF policies, seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.

- G Boroughs, in consultation with English Heritage, Natural England and other relevant statutory organisations, should include appropriate policies in their LDFs for identifying, protecting, enhancing and improving access to the historic environment and heritage assets and their settings where appropriate, and to archaeological assets, memorials and historic and natural landscape character within their area.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

- 4.1.1 According to the *Geology of Britain Viewer* published by the British Geological Survey (BGS) (2015) the site is situated over the Harwich Formation of Sand and Gravel, which in turn overlies the Lambeth Group of Clay, Silt and Sand, which in turn overlies the Thanet Sand Formation.

4.2 Site Location and Topography

- 4.2.1 The site is situated on a roughly rectangular land parcel bounded to the west by Grand Depot Road, to the east by Woolwich New Road and to the north by residential units (**Figure 2**). It lies to the south-east of the main site of the former Royal Artillery Barracks, which is located on the north-eastern edge of Woolwich Common.
- 4.2.2 The site lies about a kilometre to the south of the River Thames (**Figure 1**). It is situated upon the summit of a natural river terrace that has been artificially levelled to create a plateau for the barracks. The church has been terraced into the slope on the site, which falls away to the north-east.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 5.1.1 Palaeolithic activity in the area is represented by the discovery of a hand axe at Woolwich Docks. A stone axe from the Mesolithic period was found at Woolwich Church Street to the north-west of the site. Bronze Age and Iron Age activity have not been clearly identified in the area.
- 5.1.2 The Roman road joining Dover and London, later known as Watling Street, lay to the south of the site and followed a straight course through Bexleyheath, Welling and Shooters Hill to a point east of Greenwich, after which its course becomes unclear. The other major feature of the Roman landscape was the River Thames. To the north of the site, the main local Roman road of the area would have followed the course of Plumstead Road and Plumstead High Street and perhaps along Woolwich Church Street and Woolwich Road.
- 5.1.3 A large collection of Roman cremation pottery has been collected from the Royal Arsenal. A scatter of Roman coins have been found along Plumstead High Street supporting the theory that this path represented the course of a local Roman Road. The upper fills of ditches found on the Woolwich Power station site, to the north near the Woolwich Ferry terminal, were filled with substantial quantities of Roman pottery and coins although this is potentially residual.
- 5.1.4 The interpretation of the Anglo Saxon place name 'Woolwich' is "trading settlement or harbour for wool". It is possible that the name originates from North Woolwich on the other side of the river from which there would have been access to and from the grazing lands of Essex. Woolwich was included in the gift of land by King Edgar to St Peter's Abbey in Ghent and, by the time of the Domesday Survey in 1086, had acquired land on the other side of the Thames at North Woolwich. Despite this historical pedigree there is a general paucity of physical evidence for Saxon occupation in the area. An early Anglo-Saxon coin was recovered during excavations at the Power station on Woolwich High Street. As with the early medieval settlement, it is likely that the focus of Saxon occupation, if present, would have been near the river.
- 5.1.5 Woolwich was a small medieval fishing village. The original village lay north of Woolwich High Street along the lanes stretching down to the river. The first records of a ferry crossing the Thames to connect with the north Woolwich date from 1380. The medieval Church of St Lawrence is suggested to date from the 11th century and was located next to the location of present day St Mary Magdalene Church.
- 5.1.6 The post-medieval period is the era in which Woolwich came into its own and underwent a significant transformation. It was during the reign of Henry VIII (1509-1547) that the former fishing village was turned into a royal dockyard with the building of Henri Grâce à Dieu or 'Great Harry' in 1512-1514. It was the largest warship in the world when launched, and the first with heavy guns, which led to the end of archery and hand-to-hand fighting from ships, thus developing a new technique of naval warfare. Following this Woolwich rose in importance as it was established as a naval dockyard, with numerous ships of note being launched there.
- 5.1.7 The Royal Artillery Barracks were built between 1776 and 1802 overlooking Woolwich Common to
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the south. The barracks were laid out on a grid pattern, and included soldiers' accommodation, officers' quarters, the officers' mess and a library with ancillary buildings further behind along with stores and stables for the horse artillery. Several of these buildings were altered over time or entirely replaced in one of a number of refurbishment programmes. St George's Garrison Church was built on the eastern edge of the Common in 1863. The following description is from Cherry, B. and Pevsner, N. 1983. *The Buildings of England: London 2: South*:

'The church was built to the designs of Thomas Henry Wyatt and was established as a garrison church to serve the Royal Artillery Barracks. St George's Church was bombed during the Second World War (July 1944) hence the ruin that survives today.

It appears to have been planned when Sidney Herbert, 1st Baron Herbert (1810-61), was Secretary of War, 1859-61, and his influence no doubt lies behind the choice of style and the architect. The Early Christian/Lombardic Romanesque style had been used by T H Wyatt (1807-80) for the large and important church of St Mary and St Nicholas adjacent to Wilton House, the Herbert family seat. That church had cost £20,000. Wyatt was a prolific London-based architect who was honorary architect to the Salisbury Diocesan Church Building Society.'

- 5.1.8 Further embellishments were made during 1902 and 1903 by Burke & Co to increase the capacity of the church and to install the enamel-mosaic decorations. At around this time, a 'church room' was built to the north (Guillery 2012: 348). The church is shown in a number of early 20th century photographs (**Plates 1 and 2**).
- 5.1.9 After destruction by a V1 flying bomb in 1944, the chapel remained a roofless shell with just the lower parts of the walling remaining (**Plate 3**), except at the west end where the entrance porch is largely intact. Built in the style of a large Early Christian/Italian Romanesque basilica, it is still an impressive monument. Much use is made of brick polychromy with blue engineering bricks being used for the base course, and a red brick for the next stage. Above this comes buff stock brick for the main walling. The east end has a semi-circular apse rising dramatically from the falling ground and flanked by two half apses. At the west end the main porch stands under a gabled head and has monolithic pink Aberdeen granite piers with quatrefoil section. These carry ornately carved capitals with angel busts and, on one capital a gryphon. The arch above has red and blue brick polychromy. Square porticoes flank the main entrance each with detached columns framing the openings and capitals similar to those of the main porch. These porticoes have subsidiary entrances to the body of the church, no doubt to speed the entrance and exit of the large numbers of men being expected to use the chapel. The ruin was consolidated after the war.
- 5.1.10 Something of the rich decoration of the east part survives. The apse has a mosaic representation of St George and the Dragon as a reredos and a tiled inscription above. Some of the marble or alabaster wall covering survives to the south of the reredos. The lower parts of large columns framing the sanctuary entrance survive and behind these are more mosaics, of a peacock and a phoenix. Over the side arches are grape and vine leaf trails, also in mosaic.

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 The aims and objectives of the watching brief as set out in the Written Scheme of Investigation were as follows:
- To record comprehensively any archaeological remains that may be impacted by any ground works in connection with the construction of new roof structure;
 - To survey the location of any archaeological features recorded within these areas;
 - To determine the extent, condition, nature, character, quality and date of any archaeological remains present in the areas and to establish the ecofactual and environmental potential of archaeological deposits and features;
 - To provide information that may be used in the formulation of an appropriate mitigation strategy.
- 6.2 All works were undertaken in accordance with the guidelines set out by English Heritage and the ClfA (Chartered Institute for Archaeologists).
- 6.3 All invasive construction groundworks at the site were monitored by an archaeologist under archaeological watching brief conditions.
- 6.4 The archaeological watching brief was carried out in three phases. The first in April 2014, the second from the 3rd to 11th December 2014 and the third from 19th to 22nd January 2015.
- 6.5 The first visit involved the observation of a test pit (TP1 on **Figure 6**). The second phase of watching brief closely monitored the machine excavation of eight square foundation pile pits (A1 to D2 on **Figure 6**). The foundation piles were to support a new roof, which will shelter the chancel and its associated wall mosaics. The pits were 2.2m square with an average depth of 1.8m below the current ground level. Each was connected by a continuous trench for the concrete ring beam, which was 1.2m in depth (**Figure 6**). The third phase of watching brief involved the observation of the excavation of a storm drain trench, c.0.6m deep, which ran about 1m to 2m outside of the square pile foundation pits (**Figure 6**). The main observations were made in the foundation pile pits.
- 6.6 The excavations were undertaken by a small team of groundwork contractors using a mechanical excavator with a toothless ditching bucket. The work was continuously monitored by the attendant archaeologist, who directed the machine driver when archaeological remains were apparent.
- 6.7 All archaeological layers and features were cleaned in order to define cut features and to provide clarity of the archaeological sequence. Where these were identified the archaeologist was given appropriate time to characterise and to record the features, and recover dating evidence. Sections of features and representative trench sections were cleaned and drawn.
- 6.8 All archaeological features were recorded in plan at 1:20 or in section at 1:10 using standard single context recording methods.
- 6.9 The recording systems adopted during the investigations were fully compatible with those widely
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used elsewhere in London that is those developed out of the Department of Urban Archaeology Site Manual and presented in PCA's Operations Manual 1 (Taylor 2009). The site archive was organised so as to be compatible with the archaeological archives produced in the London area.

- 6.10 A full photographic record was made during the archaeological investigation, comprising digital photographs.
- 6.11 The contractors used the established benchmark marked on the church with a value of 41.19m aOD (above Ordnance Datum) to calculate levels across the site. In addition, a topographic survey that had been undertaken prior to construction work commencing with levels on it from this benchmark was used to establish accurate levels for the watching brief.
- 6.12 The complete archive produced during the watching brief, comprising written, drawn, photographic records and artefacts will be deposited with the LAARC (London Archaeological Archive and Research Centre) identified by site code SGE14.
- 6.13 Pre-Construct Archaeology Limited is a Registered Archaeological Organisation (number 23) with the Chartered Institute for Archaeologists and operates within the Institute's 'Code of Practice'.

7 RESULTS

7.1 Introduction

- 7.1.1 The area around the church had been landscaped and turfed to present the remains of the building as a Memorial Garden (**Plate 3**).

7.2 Test Pit 1

- 7.2.1 In May 2014 a single test pit (TP1) was excavated against the south face of the south wall of the Nave (**Figure 6**). It revealed the stepped foundation brick courses of the church at its base c.0.85m below the current ground surface (**Plate 4**). The section recorded a turf layer (1) and a made ground layer (2) which were subsequently found to extend across the southern part of the site. It was concluded that both belonged to a phase of levelling and landscaping of the area after the construction of the church.

7.3 Foundation Pile Pits

Introduction

- 7.3.1 A mid-yellow-brownish clayey-sand (42) was found below a sand and gravel layer (17). These were the earliest deposits uncovered. Both were interpreted as natural geological deposits. Clayey-sand (42) and sand and gravel layer (17) were seen in Pile Foundation Pit B2 where it had been cut by the construction cut for kiln [22] (**Figure 7**).
- 7.3.2 Due to the church being terraced into the slope of a dry valley, the foundations were commensurately deeper towards the east end where the land slopes down to the north-east. Therefore, even with the trenches at a depth of 1.8m most of the layers that were encountered were of back-filled and re-deposited material. This combined layers of rubble, soil and re-deposited brickearth. These consolidation layers contained fragments of brick, tile and degraded plaster or mortar from the former mid-19th century church.
- 7.3.3 Layers of demolition rubble (28) were uncovered to the north of the church in and around the truncated walls of a separate building that was once formed an ancillary building to the church. These layers may relate to the bomb strike that damaged the church in the Second World War.
- 7.3.4 A thin layer of topsoil and turf (4) was found across the site and capped the sequences found in each of the trenches.

Foundation Pile Pit A1

- 7.3.5 In Foundation Pile Pit A1, turf and topsoil (4) overlay demolition rubble (28), consisting of bricks, tiles and worked stone that were the same as the materials used in the extant remains of the church. Turf and topsoil (4) also covered the upstanding remains of a brick wall consisting of fifteen courses of grey engineering bricks [31] laid upon five courses of yellow frogged bricks [32] (**Figure 8**; **Plate 5**). The north end of the wall exposed during excavation thickened to create a pier or buttress. The ensemble was set upon two foundation courses of the same yellow brick and a thick mortar bed (33). This wall, along with wall [29]/[30] (**Plate 6**) formed part of an outbuilding to the

north of the church.

Foundation Pile Pit B1

- 7.3.6 The opening of Foundation Pile Pit B1 revealed an almost identical sequence to Foundation Pile Pit A1 with a thin turf layer (4) covering a layer of demolition rubble (28). Directly underneath this was a wall of grey engineering bricks [29] constructed in two separate parts or phases with a straight joint down the centre (**Plate 6**). The engineering bricks overlay and tied into several courses of yellow frogged bricks [30] set along a diagonal angle that rose to the south. This wall formed the outer, east wall of the smaller outbuilding to the north of the church and is related to walls [31]/[32]/[33] in Foundation Pile Pit A1 (**Figure 8**).

Foundation Pile Pit C1

- 7.3.7 The topsoil (4) increased in depth around the east end of the church suggesting that the ground had been landscaped in order to create a level area. In Foundation Pile Pit C1 layer (4) was 0.89m in depth and lay directly over a sequence of tip layers and made ground. Layer (27) consisted of a series of lenses of alternating soil and building debris. Layer (9) was a band of re-deposited brickearth, which was found from this point in a continuous layer around to Foundation Pile Pit A2 to the south of the Nave. It appeared to have been laid as a leveling layer or work surface to seal the less stable material beneath. In Foundation Pile Pit C1 it was up to 0.6m thick in places. This in turn sealed two layers (12) and (14) of re-deposited topsoil, which contained building fragments.

Foundation Pile Pit D1

- 7.3.8 In Foundation Pile Pit D1, a natural geological deposit of sand and gravel (17) was recorded at the base of the sequence, some 1.71m below the current ground level. This was sealed by four layers of made ground. Topsoil (4) overlay layer (8), which was 0.38m at its thickest and consisted of a rubble dump showing tip lines running downhill towards the east. Below this, two thick layers of made ground contained quantities of building materials within their make up; layer (9) the ubiquitous layer of re-deposited brickearth was around 0.79m thick and re-deposited soil layer (14), seen in Foundation Pile Pit C1, was also present and was 0.62m thick.

Foundation Pile Pit D2

- 7.3.9 The section in Foundation Pile Pit D2 revealed a slightly more complex sequence but nonetheless it was almost entirely made up of re-deposited layers. In this case the turf (4) sealed a small pit [6] about 0.46m deep containing one fill (41). The pit cut two layers (7) and (8). The former was almost entirely a spread of mortar whilst the latter showed alternating lenses of re-deposited brickearth and soil.
- 7.3.10 A thick band, around 0.33m thick, of re-deposited brickearth (9) separated the two layers and the pit from four lower layers. Layer (10) was re-deposited topsoil, 0.16m thick, and (11) was re-deposited light-yellow-whitish sand. Below this was a mid-brown clayey-sand (12) which contained inclusions of rounded pebbles (20%) ranging from 10-30mm in size. This layer was above layer (14), which was a re-deposited natural geological deposit of mid brown-yellowish clayey sand from which a fragment of medieval glazed tile (AD1080-1350) was recovered. Part of the trench had collapsed and layer (13) could be seen which comprised a 19th century sand backfill around the

footings of a below ground brick buttress. The sweeping curve of the apse was found during the watching brief to be supported by a series of radial buttresses which are stepped out below the ground surface.

Foundation Pile Pit C2

- 7.3.11 In Foundation Pile Pit C2, the turf layer (4) sealed a pipe trench [16] cut for a cast iron pipe (**Figure 9; Plate 9**), which was set in a backfill of mid orange-brownish sandy clay (15). The trench had cut a layer (5) of re-deposited brickearth mixed with lenses of soil, a layer (9) of re-deposited brickearth as well as layer (12), a dark brown sandy silt, some 0.72m thick. This ensemble of layers sealed a small, shallow sub-oval pit [19], which was 0.48m long and 0.3m wide (**Figure 9; Plate 9**) and was filled with a dark grey-blackish sandy silt (18). Four medieval pottery sherds of London-type ware (LOND) (AD1080-1350) were recovered from this feature. A natural geological deposit of mid-brown clayey sand (17) was recorded 1.52m below the present ground surface.

Foundation Pile Pit B2

- 7.3.12 Foundation Pile Pit B2 was located close to the south-east corner of the nave (**Figure 6**). The remains of a medieval tile-built kiln were discovered some 0.9m below the present ground surface under re-deposited made ground layers (**Figure 7**). Turf layer 4 sealed re-deposited brickearth layer (9), which in turn sealed dark brown sandy silt layer 20 containing fragments of cbm (ceramic building material) (1%) and degraded mortar (5%). Below this, layer (10) was either a re-deposited soil or one that had developed following the collapse of the tile-built kiln [37] below it.
- 7.3.13 The tile-built kiln was revealed in the south and west section of Foundation Pile Pit B2 (**Figure 7; Plates 10 to 12**). The construction cut for the kiln had cut two natural geological deposits (17) and (42) below. Within the kiln cut itself could be seen a reddened layer (38) which appears to have been the result of heat radiating outwards from the centre of the kiln. The wall of the kiln was comprised tiles [37] laid without any mortar and arranged either vertically, 'on edge,' for the base of the structure or stacked horizontally for the walls. Their inner surfaces carried a layer of black soot or ash [36] which was testament to the use of the structure. Roughly three fills within the kiln could be ascertained and all to some degree were a result of the collapse of the structure itself. At the base of kiln, fill (35) contained tile and cbm fragments (25%) in a matrix of mid-brown sandy silt. Both fills (21) and (34) were a dark brown sandy silt, although higher layer 21 contained a high proportion of tile fragments (30%) which suggests it constituted the collapsed roof of the kiln itself.
- 7.3.14 The flue [40] of the kiln was exposed in the ring beam trench to the west of Foundation Pile Pit B2 (**Figure 7; Plates 13 and 14**). Another flue-like structure [39] was observed less than a metre to the west in the ring-beam trench. It was oriented north-south.

Foundation Pile Pit A2

- 7.3.15 In Foundation Pile Pit A2 the turf layer (4) sealed made ground layer (5), which was composed of mixed layers of re-deposited brickearth and soil, and a band of re-deposited brickearth (9) which here attained 0.42m in thickness. Below this, layer (20) was a layer of made ground which displayed a quantity of demolition/construction rubble within its make-up. This was 0.71m thick at the west end of the Foundation Pile Pit. Below this at a depth of 1.41m, the brick built stepped

foundations [25] of one of the church's buttresses protruded into the section (**Plate 17**). It was built on a bed of mortar (26) that was so thick that it obscured the building materials evident within it. Structure [25] was two courses of yellow, frogged brick and constituted the foundation courses of the buttress against the main south elevation, which was built in blue-grey engineering bricks.

- 7.3.16 During the works, the upper part of the west section of Foundation Pile Pit A2 was extended to the west revealing a wall perpendicular to the south elevation of the church (**Figure 6; Plates 18 and 19**). It was aligned with a blocked former raised doorway in the south elevation (**Plates 19 and 20**). The wall comprised two courses of blue-grey engineering bricks in Flemish bond [48] laid on two (visible) courses of yellow, frogged bricks [49]. The latter two courses were laid in English bond.

7.4 Storm Drain Trench A1 to B1

- 7.4.1 The storm drain was excavated 1.5m to the north of Foundation Pile Pit A1 and then travelled eastwards to meet up with the manhole junction at the eastern extremity of the site before feeding out into the main storm drains in Woolwich New Road (**Figure 6**). The part of the storm drain trench to the north of Foundation Pile Pit A1 revealed an east-west aligned wall [43] which appears to be the north wall of the outbuilding which consists of the east wall [29] and the west wall [31] previously observed in Foundation Pile Pits A1 and B1 (**Figure 8**). Projecting the wall from the known points - with each set at a 90 degree angle to the rest – an outbuilding roughly measuring 5.8m x 5.2m can be envisaged.

Storm Drain Trench A2 to B2

- 7.4.2 The storm drain on the south side of the church was excavated at a distance of no more than 0.75m south of Pile Foundation Pits A2 and B2 (**Figure 6**).
- 7.4.3 The storm trench, which was only 0.7m deep, passed over the tile-built kiln observed in Foundation Pile Pit B2. The roof or structure of the kiln [37] and its construction cut [22] were exposed in the base of the trench (**Figure 7; Plates 15 and 16**). This suggested that the kiln may have been round to oval in plan with the flue aligned to the north-west.

8 THE ARCHAEOLOGICAL SEQUENCE

8.1 Phase 1: Natural Geological Deposits

- 8.1.1 Natural geological deposits [17] and [42] were reached at a depth of 1.64m below the current ground level in Pile Foundation Pit B2, at a depth of 1.52m in Pile Foundation Pit C2 and at 1.6m in Pile Foundation Pit D1. It was not visible in Foundation Pile Pits A1, B1, C1, A2 and D2. Mid-brown-yellowish clayey sand (17) containing rounded pebbles 0-40mm in diameter (20%) overlay (42), a mid-yellow-brownish clayey-sand – being lighter in hue and without the pebble inclusions.

8.2 Phase 2: Mediaeval AD 1066 – 1539

Sub Oval Pit

- 8.2.1 At the base of Foundation Pile C2 a small, sub-oval pit [19] was discovered which had been sealed by an overlying layer of mid-brown-yellowish clayey-sand (12) (**Plate 9**). It had not been possible to view it in section as it was almost central to the base of the Foundation Pile Pit and obscured by the digger bucket during excavation. It was barely 0.06m deep. Four sherds of London-type ware (LOND) were recovered from its fill (18) which were dated to between AD1225 - 1350. The pit is likely to be contemporary with the activities relating to the kiln [37] less than 6m to the south-west. It is possible that the sherd of baluster jug found in the fill is earlier in date than the rest of the pottery found in the other medieval features on this site.

Tile-Built Kiln

- 8.2.2 During the excavation of Foundation Pile Pit B2 a tile-built structure was discovered and exposed in its south and west sections (**Figure 7; Plates 10 to 12**). As it was only partially revealed its exact dimensions were not ascertained but the principal chamber (or oven) appears to have been oval in plan, roughly 3.2m across. It had survived to a height of 1.6m although the roof had collapsed. The flue entered from the north-west. Although the total length of the flue is not known, it was recorded as being 0.94mm wide when it was observed in the ring-beam trench excavated between Foundation Piles A2 and B2 (**Figure 7; Plates 13 and 14**).
- 8.2.3 Another flue-like structure [39] could be seen alongside, less than a metre away to the west in the ring-beam trench (**Figure 7**). It was oriented north-south and in contrast it was only 0.4m wide. Whether this was a separate structure or part of the kiln is uncertain as no physical relationship between them could be made. Four pottery sherds were recovered from within its walls, all of which were London-type ware dating to between AD1270 – 1350.
- 8.2.4 The construction of the kiln's main chamber consisted of tiles laid vertically or at a slight 45 degree angle for the base or floor, whilst the walls were formed of tiles stacked horizontally (**Plates 10 to 12**). Although mortar was not evident as such, the heat had fused the clayey sand around the outside of the tiles creating a reddened, hardened layer (38) (**Figure 7**). It is conceivable that this layer was a sandy mortar applied to the inside of the construction cut to facilitate the tile wall construction. This type of 'fine' clay was discovered binding the tiles together in Kiln 2706 excavated at the Royal Arsenal site less than a kilometre to the north-east in 2007-2008 (Cotter

2008).

- 8.2.5 Within the kiln chamber a layer or incrustation of soot or blackened material clung to the inner walls up to 50mm thick in some places. The chamber contained three fills associated with its collapse; (21), (34) and (35) all of which contained a high proportion of fragmentary tile so are likely to represent the collapsed roof of the kiln (**Figure 7**). Fill 35 produced a fragment of glazed peg tile (AD 1080-1350) which shows a consistency amongst the assemblage from all four features encountered during excavation; the kiln, the pit and the two flues. Although fill 21 contained an 'anomalous' hexagonal brick - possibly of a later date - it can be considered less crucial in the dating of the structure as it was higher up in the sequence of fills and may have entered following the collapse of the kiln roof.
- 8.2.6 The north-west to south-east oriented flue was observed in plan within the confines of the ring-beam trench and therefore access was restricted (**Figure 7; Plates 12 to 14**). However, it appeared that two parallel walls had been created with a void between them and that the tiles had then been laid to overlap one another in a kind of 'barrel-vault' fashion. The kiln may have had the appearance of an 'igloo,' with a linear flue serving a cylindrical chamber although it is unknown as to whether the roof (or dome) had been corbelled or roofed in another fashion. An environmental sample taken of the flue fill (40) also produced two sherds of London-type ware of the highly decorated style (LOND HD) known to have been made around AD 1080-1350.
- 8.2.7 Although inspection of the kiln was limited due to its exposure in the Foundation Pile Pit and ring beam trench it can, provisionally at least, be placed into Musty's Single Flue Kiln Sub-Type 1a of an up-draught type - that is to say, one that comprises of flue, oven and presumably, an exhaust vent (chimney) but one that does not possess any internal pedestals or structures (Musty, 1974:44).
- 8.2.8 The kiln draws many comparisons to the tile-built kiln excavated in 2007-2008 at The Royal Arsenal Woolwich, whose dimensions were similar. Kiln 2706 was built of tiles bound with a fine clay and the excavators were surprised at the depth to which it had been dug down into the natural geology – as was found at St George's. Furthermore, it was identified as a kiln that *produced* London-type ware with a date range of the finds falling between AD1300-1350 (Cotter, 2008). The date range at the Woolwich Arsenal site ties in very closely to the kiln and finds excavated at St George's.
- 8.2.9 The MOLA Ceramics and Glass website states that London-type ware was produced from the end of the 11th century up until the Black Death (MOLA 2015). The pottery from the fill of the small oval pit [18], the wall of the kiln [37], the flue fill [40] and the nearby (second) flue [39] was all London-type ware. The pottery was created by firing red brick earth with a lead glaze added to a white slip. The distinctive green colour was created by the addition of copper (MOLA 2015). The fragment of peg tile recovered from [37] possessed the same green glaze finish.
- 8.2.10 Pottery sherds were recovered from both the walls of the kiln [37] and the fill of the flue [40]. Again, as in the pit nearby, London-type ware was present, possibly the base of a bowl, found amongst

the tiles which comprised the wall of the oven [37]. From the fill of the flue, two sherds of London-type ware, possibly from a jug, compliment the assemblage whose date range aligns quite closely within the AD1240-1350 bracket. Furthermore, a peg tile found in one of the fills (35) of the collapsed kiln has been dated to falling within the AD1080-1350 date range which compliments the glazed peg tile fragment recovered from the wall of the kiln [37].

- 8.2.11 The only anomaly is hexagonal brick, considered to be of a somewhat 'specialised' nature in fill (21) which dates to a later period, that being AD1400-1600. However, with the overwhelming concurrence of all the other finds this suggests that either this tile can be treated as 'intrusive' (following the collapse of the kiln) or that it became part of the archaeological deposit at the end of the kiln's life.
- 8.2.12 The homogeneity of the finds from both in and around the kiln would suggest a 13th/14th century date for its construction and use – a kiln that consistently produced a London-type ware pottery in both its decorated and plain styles. Such a period of use would accord with the Musty's suggestion that the average life of a kiln is around 5 years whereas an industry can persist for 50 years (Musty, 1974: 53). Therefore, one can envisage that this kiln may be seen to straddle the period from the mid-to-late 13th century into the early to mid-14th century and may have been maintained by more than one generation.

8.3 Phase 3: Early 20th century

North Outbuilding or 'Church Room'

- 8.3.1 An 'outbuilding' attached to the outside of the north wall of the church was observed in both Foundation Pile Pits A1 and B1, in the ring beam trench between them as well as in the storm drain trench which clipped the northern extremity of the structure. It comprised of three walls, [31] / [32] / [33] at the south, [29] / [30] at the east and [43] at the north forming a rectangle measuring 5.9m east-west by 4.8m north-south (**Figure 8; Plates 5 and 6**). An internal drain was uncovered during the excavation of the ring-beam trench which fed out, to the east, by a cast-iron pipe seen at the base of wall [29] / [30].
- 8.3.2 Wall [29]/[30], oriented north-south, is the eastern wall of this outbuilding and consisted of 12 courses of blue-grey engineering bricks in Flemish bond separated by a central straight construction joint; thus the lines of the courses are slightly misaligned (**Plate 6**). These courses had been laid upon 15 courses of yellow frogged bricks in stretcher coursing resting on a two-course step foundation bed of the same brick. However, [29] has been built upon [30] tying-in diagonally as opposed to being set on horizontal beds or courses. The cast iron pipe emerges from the step foundation courses at the bottom of the trench at a depth of 2.24m below present ground level.
- 8.3.3 Wall [31]/[32]/[33] is the west wall of the 'outbuilding' and was observed in the east-facing section of Foundation Pile Pit A1 (**Figure 8; Plate 5**). In this instance 15 courses of blue-grey engineering bricks in Flemish bond were laid upon 8 horizontal courses of yellow frogged brick. At the bottom of these, two courses were stepped out by 60mm to create a foundation bed [33] with one course of stretchers laid upon a course of headers. The structure was exposed sufficiently to see a length of

wall running north-south for 1.7m before stepping out by one course to create a buttress which was only partially revealed in the pit.

- 8.3.4 Wall [43], oriented east-west, was only partially revealed up to less than 2m in length and only the top courses were revealed of blue-grey engineering bricks. This constitutes the north wall of rectangular outbuilding.
- 8.3.5 A north ancillary building to the church can clearly be seen in 20th century photographs of the church, particularly those of the west facade (**Plate 1**). It displays a low-pitched gable roof with a centrally located, round-arched entrance on the west elevation. The building was harmoniously designed to blend with the architecture of the main church and is referred to as a 'church room' (Guillery, 2012: 348). The footprint of this building is shown on the 1914 and 1935 Ordnance Survey maps (**Figures 3 and 4**). It is known to have been added 'sometime' during the renovations made by Burke & Co between 1902-3 (*ibid.*).
- 8.3.6 Wall 31 with its buttress may have been the east wall of the building shown on the 1914 and 1935 Ordnance Survey maps and walls 29 and 43 may have been an extension to this building that is not shown on these maps. A blocked doorway is visible in the north elevation between buttresses 5 and 6 (**Plate 7**). It would have been reached by steps up from the ancillary building into the church as shown on the south side of the church on the 1935 Ordnance Survey map (**Figure 4**).
- 8.3.7 Plaster on the north elevation of the church to the west and east of buttress 6 shows that the south wall of the extension to the ancillary building represented by walls 29 and 43 was plastered (**Figure 8; Plates 7 and 8**). The scar of the east wall of the extension (**Plate 8**) is clearer than that of the east wall of the ancillary building (**Plate 7**).
- 8.3.8 The layer of rubble [28] found beneath the turf on the north side of the church contained many examples of machine-pressed yellow gault brick in many shapes and forms. All were consistent with the architectural style of the main church building and some no doubt represented the remains of the demolished ancillary building.

South Structure

- 8.3.9 In an early 20th century photograph of the church taken from the south-west (**Plate 2**) a south door can be seen with a brick built handrail presumably flanking a set of brick steps. This flight of stairs is shown on the 1935 Ordnance Survey map (**Figure 4**). It would have required a sturdy foundation so it can be reasonably stated that wall [48]/[49] revealed in Foundation Pile Pit A2 is the remainder of the foundation courses for the entrance steps to the south door (**Figure 6; Plates 18 and 19**). The horizontal brick in-filling [50] – which seemed to be made of odd or recycled bricks - may have simply been added to strengthen the structure.

8.4 Phase 4: Mid 20th century

- 8.4.1 There were two sequences of 'made ground' surrounding the church; the layers that were created during its construction and initial landscaping and those that were the result of the destruction of the church. Layers 4, 5, 8 and 27 above the band of re-deposited brickearth (9) can be assigned to the mid 20th century; this includes the demolition rubble (28) to the north of the church which was

just below the turf layer. However those layers below the band of re-deposited brickearth (9) are the result of the construction phase sealed by the re-deposited brickearth; these are (12), (13) and (14).

9 RESEARCH OBJECTIVES AND CONCLUSIONS

To record comprehensively any archaeological remains that may be impacted upon by any groundworks in connection with the construction of the new roof structure

9.1.1 Initially, the prognosis for the survival of archaeological remains dating to earlier than the church was not promising as it was considered that both the construction – and ultimately the destruction – of the building would have adversely affected any earlier material remains. However, it was found that at least to the south and west preservation of the archaeological resource was better than expected. The survival of a medieval tile-built kiln on the edge of the dry valley and undamaged by the construction of the church was an unexpected find.

9.1.2 The kiln has close similarities to a tile-built kiln was excavated in 2007-2008 at The Royal Arsenal Woolwich whose dimensions were comparable. Kiln 2706 was built of tiles bound with a fine clay and the excavators were surprised at the depth to which it had been dug down into the natural geological deposit (Cotter, 2008). Furthermore, its identification as a kiln that produced London-ware and the date range of the finds ranging between AD1300-1350 compare very favourably with the kiln at St George's.

9.1.3 The watching brief also uncovered walls that related to the north outbuilding (or 'church room').

To survey the location of any archaeological features recorded within these areas

9.1.4 The location of the kiln is now known although it suffered some damage through the works to create Foundation Pile B2. It may also warn of other kiln structures in the area, particularly the flue-like structure [39] which may (or may not) have been part of the main structure or may be connected to another kiln or battery of kilns.

9.1.5 In terms of the fabric of the church, dimensions for the extension to the northern ancillary building and the foundations for the south entrance have been surveyed in plan.

To determine the extent, condition, nature, character, quality and date of any archaeological remains present in the areas and to establish the ecofactual and environmental potential of archaeological deposits and features

9.1.6 The analysis of the finds has provided a consistent assemblage for the site for both the kiln structure and the small pit in Foundation Pile Pit C2 which reveals medieval activity on the site. There is a strong case to suggest that the kiln at St George's was a London-type ware *production* site and this makes it of local importance – it may also suggest that the kiln – or potting area – may be more extensive than we have seen in the narrow confines of the foundation pile pits and storm water trenches.

9.1.7 The footings and foundations of the brick built structures both to the north and south of the church have been recorded and evaluated.

To provide information that may be used in the formulation of an appropriate mitigation strategy

9.1.8 The pottery and tile samples retrieved from the kiln enabled close dating of the structure and will help to place it within the local, regional and national lists of historic importance in relation to the Medieval potting industry and it can be mitigated for in future projects. Its importance as a possible

production centre is also of note. Its position, relative to the church is now known and can form the basis for any mitigation required for future works.

- 9.1.9 The floor plans of the outbuildings and foundations that exist to the north and south can be considered in future works with relation to their importance attached to their scheduled status.

Conclusion

- 9.1.10 The watching brief recorded the remains of two brick built structures contemporary with the church, both of which are now no longer visible above ground. To the north, an outbuilding was recorded. Wall scars on the outside wall of the nave are all that remain of this structure above ground. A blocked north doorway in the north elevation of the church once provided access to and from the main ancillary north building and the church. To the south of the Nave, the remains or foundations of a brick built staircase entrance to the original south door were recorded that ties into the historic photographic evidence. Similarly, at some point in time, the south door was also blocked.
- 9.1.11 The discovery of a medieval kiln, dating to roughly between the 13th and 14th centuries, relatively untouched by the construction of the church, was a surprising find. Its construction, using pre-fired tiles draws comparisons with another kiln found nearby in the Royal Arsenal, Woolwich. Due to the limited nature of the works its full extent is unknown. It is not possible to give precise details of the kiln dimensions or if parallel structures, such as a second 'possible' flue in close proximity was part of a larger structure or a secondary one. Both the Foundation Pile Pits and the service trenches were too small or narrow to allow full access to the structure. However, it is considered to be a discovery of local importance that has greatly added to our understanding of the kilns on Woolwich Common.
- 9.1.12 Once the project is deemed complete, the completed archive comprising all site records from the fieldwork will eventually be deposited by Pre-Construct Archaeology Limited with LAARC (London Archaeological Archive and Research Centre) under site code SGE14. Until then the archive will be stored at PCA's offices in Brockley, London.
- 9.1.13 The results of the archaeological investigation will be published as an entry in the *London Archaeologist* 'Round Up'.

10 ACKNOWLEDGEMENTS

- 10.1.1 Pre-Construct Archaeology Limited would like to thank Heritage of London Trust for commissioning the work and Greenwoods for their co-operation during the works. Pre-Construct Archaeology Limited also thank Mark Stevenson, English Heritage Greater London Archaeological Advisor to the Royal Borough of Greenwich for monitoring the project on behalf of the Local Planning Authority. Also Jonathan Partington and the team at the Greenwich Heritage Centre are acknowledged for their help with the cartographic evidence.
- 10.1.2 The project was managed for Pre-Construct Archaeology by Charlotte Matthews. The archaeological watching brief was carried out by Amelia Fairman and Wayne Perkins. Christopher Jarrett analysed the medieval and post-medieval pottery and Kevin Hayward analysed the ceramic building material. This report was mainly written by Wayne Perkins. Adela Murray-Brown produced the CAD illustrations.

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APPENDIX 1: CONTEXT INDEX

Site Code	Context No.	Trench	Plan	Section / Elevation	Type	Description	Phase
SGE14	1	Test Pit	1	1	Layer	Top Soil	4
SGE14	2	Test Pit	1	1	Layer	Made Ground	4
SGE14	3	Test Pit	1	1	Masonry	Brick foundations	3
SGE14	4	D2	*	1	Layer	Turf	4
SGE14	5	D2	*	1	Layer	Made Ground	4
SGE14	6	D2	*	1	Cut	Pipe Trench	4
SGE14	7	D2	*	1	Layer	Rubble and Mortar Spread	4
SGE14	8	D2	*	1	Layer	Made Ground	4
SGE14	9	D2	*	1	Layer	Re-Deposited Brick earth	4
SGE14	10	D2	*	1	Layer	Re-Deposited Soil	4
SGE14	11	D2	*	1	Layer	Re-Deposited Sand	3
SGE14	12	D2	*	1	Layer	Made Ground	3
SGE14	13	D2	*	1	Layer	Made Ground	3
SGE14	14	D2	*	1	Layer	Made Ground	4
SGE14	15	C2	*	2	Fill	Fill of Pipe Trench [16]	4
SGE14	16	C2	*	2	Cut	Pipe Trench	4
SGE14	17	C2	*	2	Layer	Natural Clayey Sand	1
SGE14	18	C2	19	*	Fill	Fill of Medieval Pit [19]	2
SGE14	19	C2	19	*	Cut	Medieval Pit	2
SGE14	20	B2	22	7, 10	Layer	Made Ground	4
SGE14	21	B2	44	7, 10	Fill	Fill of Kiln Structure [37]	2
SGE14	22	B2	44	7, 10	Cut	Cut for Kiln [37]	2
SGE14	23	B2	*	*	Masonry	Stone Slab	3-4
SGE14	24	B2	*	*	Masonry	Brick built Radial Buttress	3
SGE14	25	A2	*	4	Masonry	Brick Foundation Courses	3
SGE14	26	A2	*	4	Layer	Mortar Foundation Bed	3
SGE14	27	C1	*	5	Layer	Made Ground	4
SGE14	28	B1	30	6	Layer	Demolition Rubble	4
SGE14	29	B1	30	6	Masonry	Blue-Grey Brick Courses	3
SGE14	30	B1	30	6	Masonry	Yellow Brick Courses	3
SGE14	31	A1	*	8	Masonry	Blue-Grey Brick Courses	3
SGE14	32	A1	*	8	Masonry	Yellow brick Courses	3
SGE14	33	A1	*	8	Masonry	Yellow Brick Foundation	3
SGE14	34	B2	22	7,10	Fill	Fill of Kiln Structure [37]	2
SGE14	35	B2	22	7,10	Fill	Fill of Kiln Structure [37]	2
SGE14	36	B2	22	7,10	Fill	Fill of Kiln Structure [37]	2
SGE14	37	B2	22	7,10	Masonry	Tile Wall & Floor of Kiln [37]	2
SGE14	38	B2	22	7,10	Layer	Kiln Floor	2
SGE14	39	B2	22	7,10	Masonry	Tile Flue	2
SGE14	40	B2	22	7,10	Fill	Fill of flue [37]	2
SGE14	41	D2	*	1	Fill	Fill of pipe trench [6]	1
SGE14	42	B2	22	7,10	Layer	Natural Clayey-sand	1
SGE14	43	A1 – B1	- -	*	Masonry	Blue-Grey Brick Wall	3
SGE14	44	A1 – B1	-	*	Masonry	Yellow Brick Wall	3
SGE14	45	A1 – B1	-	*	Masonry	Red Brick Flooring	3
SGE14	46	A1 – B1	-	*	Masonry	Blocked South Door	3
SGE14	47	A2	37	*	Layer	Tarmac	4
SGE14	48	A2	37	*	Masonry	Blue-Grey Brick Wall	3
SGE14	49	A2	37	*	Masonry	Mixed Red & Yellow Brick	3
SGE14	50	A2	37	*	Masonry	Mixed Red & Yellow Brick	3
SGE14	51	A1	-	*	Layer		2
SGE14	52	A1 – B1	-	*	Masonry	Blue-Grey Brick Wall	2

Phases

- 1 Natural Geology
- 2 Medieval Period (1066 – 1539)
- 3 Early 20th century
- 4 Mid 20th century

APPENDIX 2: POTTERY ASSESSMENT

By Chris Jarrett, Pre-Construct Archaeology Limited

Introduction

A small sized assemblage of pottery was recovered from the site (less than one box). The pottery dates only to the medieval period. None of the material is abraded, although the assemblage consists of sherd material with identifiable jug forms present. The pottery was quantified by sherd count (SC) and estimated number of vessels (ENVs), besides weight. Pottery was recovered from four contexts as small sized groups (fewer than 30 sherds).

In total the assemblage consists of thirteen sherds, 13 ENV, 248g (of which none were unstratified). The assemblage was examined macroscopically and microscopically using a binocular microscope (x20), and entered into a database format, by fabric, form and decoration. The classification of the pottery types follows the Museum of London Archaeology (Museum of London Archaeology 2012) typology (form and fabric series). The pottery is discussed by its distribution and is of note for being associated with a medieval pottery kiln.

Spot dating index

Context [18], spot date: 1140/1225-1350

London-type ware (LOND), 1080-1350, 4 sherds, 4 ENV, 124g, form: jug, including a rounded shape and a possible tulip-necked baluster type, dated c. 1270-1350

London-type ware baluster jug (LOND BAL), 1180-1350, 1 sherds, 1 ENV, 31g

Context [37], spot date: 1080-1350

London-type ware (LOND), 1080-1350, 1 sherds, 1 ENV, 9g, form: possible bowl base

Context [39], spot date: 1240-1350

London-type ware in the highly decorated style (LOND HD), 1240-1350, 4 sherds, 4 ENV, 37g, form: jug

Context [40], spot date: 1240-1350

London-type ware (LOND), 1080-1350 2 sherds, 2 ENV, 36g, form: jug

London-type ware in the highly decorated style (LOND HD), 1240 -1350, 1 sherds, 1 ENV, 11g, form: jug

Significance, potential and recommendations for further work

The pottery has significance at a local level, in as much as it is associated with a medieval pottery kiln, provides dating for the structure and may possibly represent vessels made in the kiln. Only one of the sherds may possibly represent a waster and this is found as the thumbled base sherd of a rounded London-type ware jug, with a very thinly potted wall towards the middle of the vessel. Additionally, it has a pool of glaze internally, which may have extended over the break, although it is now freshly broken in that area. All of the medieval pottery consists of London-type ware with broad date ranges, although sherds of highly decorated ware, dated 1240-1350 were noted in contexts [39] and [40], except that this is most likely to date to before c. 1300, as the industry tended to make plainer wares in the early 14th century (Blackmore 1999). The pottery from context [18] was difficult to provide a tighter date range to, however a jug sherd with a mortised rod handle is most like to date to after c. 1225, although it is remotely possible that this sherd is derived from a tulip-necked baluster, dated 1270-1350. All of the other pottery recovered from context [18] is plain and probably, although not for certain, represents items made after c. 1300.

Until the excavation of a London-type ware kiln at the Woolwich Arsenal in 1999, which was shrouded in secrecy, it was unknown where the production centre was located for the main supply of pottery to London during the period c. 1180-1350. The discovery of at least two early 14th-century kilns making London-type

were further excavated in 2007 and were located adjacent to the Woolwich Arsenal on the 'Tear-drop' site (Cotter 2008). It is possible that from the evidence of the associated pottery from the SGE14 kiln that this structure predates those in the area of the Woolwich Arsenal. Additionally of note is the occurrence of a medieval pottery kiln at St George's Chapel, which indicates that pottery production in Woolwich was not just focused in one area, *i.e.* around that of the Arsenal. Therefore, the vicinity of the study area should be considered as a location for other kilns when archaeological work is undertaken in the immediate vicinity.

The main potential of the pottery is to date the contexts from which it was recovered and so provide dating for the kiln. The pottery may also give an indication of what was made in the kiln

It is recommended that a short publication text is undertaken for the assemblage and one item should be drawn (a jug rim recovered from context [40]) and photographs of the highly decorated pottery should be taken to supplement the text.

Reference

Cotter, J. 2008 'Medieval London-type Ware Kilns Discovered at Woolwich', *Medieval Pottery Research Group Newsletter*, 61, 3-5.

Museum of London Archaeology 2012 'Medieval and post-medieval pottery fabric codes' unpublished document. Updated July 2014.

APPENDIX 3: CERAMIC BUILDING MATERIAL ASSESSMENT

By Kevin Hayward, Pre-Construct Archaeology Limited

Spot dating index

St Georges SGE14

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
14	2273nr2274	Glazed local medieval coarse peg tile with organic core	1	1080	1350	1080	1350	1080-1350+	No mortar
21	2273nr2274; local 3033	Earthy local shallow plinth red hexagonal brick hand made with medieval peg tile attached probably related to a pottery or tile kiln,. Brick appears somewhat dauby and may be localised specialist manufacture	2	1080	1700	1400	1700	1400-1600	No mortar
28	Gault Brick	Machine pressed yellow Gault brick semicircular and segmented possibly related to later kiln but no glaze	2	1850	1950	1850	1950	1850-1950	No mortar
35	2273nr2274	Undulated Glazed local medieval coarse peg tile with organic core	3	1080	1350	1080	1350	1080-1350+	No mortar
37	2273nr2274	Undulated Glazed and unglazed local medieval coarse peg tile with organic core	5	1080	1350	1080	1350	1080-1350+	No mortar

Review

This small assemblage (13 fragments 7.6kg) contains a large group of peg tiles [23] [35] [37] all of which are of local manufacture (2273nr2274) have thick standard glaze and coarse moulding sand typical of medieval manufacture. Many are uneven and appear to have warped under intense heat most probably to divide up a pottery or possibly a tile kiln.

From [21] there is a curious “special” hexagonal shaped red brick again of local quality brickearth welded onto it is the same peg tile again this would infer use in a kiln. The brick is not a typical Tudor Red (1450-1700) is quite earthy and sandy suggesting it was not manufactured under high temperature.

Finally from [28] there is evidence for Victorian activity with two more specials in a machine made yellow Gault type brick. Machine manufacture would imply a mid 19th to mid 20th century date – whether these too relate to a much later kiln cannot be determined though their shape and fabric are very much atypical of London.

Significance and potential for assemblage and recommendations for further work

This is a very important assemblage of ceramic building material from Woolwich. The warped tiles and special brick would indicate kiln activity, and their fabric firmly places at least a medieval date (1080-1350) though conceivably this could be later medieval or a local fabric.

The brick special is curious and may be some sort of heated mud-brick possibly again of late medieval date.

Further investigation should be carried out if possible as this feature adds to the growing number of kilns in Woolwich.

APPENDIX 4: OASIS DATA FORM

OASIS ID: preconst1-205285

Project details

Project name	St George's Church Woolwich Archaeological Watching Brief
Short description of the project	Pre-Construct Archaeology was commissioned by Thomas Ford Architects on behalf of the Heritage of London Trust to carry out an archaeological watching brief on groundworks at the ruined Royal Garrison Church of St George, Woolwich, Royal Borough of Greenwich, centred at OS NGR TQ 543346 178286. The Heritage of London Trust is an historic building preservation group. The ruined church is Grade II Listed. It was built in 1863 to the designs of T H Wyatt. It was bombed in World War II and is now roofless and fragmentary. The archaeological watching brief was carried out as a condition of planning consent for the installation of an independent roof structure over the remains. The watching brief was carried out in 2014 and 2015. A 13th/14th century tile-built kiln was recorded. The kiln, as well as a nearby pit and another tile-built structure all contained fragments of green-glazed London-type ware pottery in both its decorated and undecorated forms. By inference it is likely that the kiln was one of the few known centres for the production for this type of pottery making it a discovery of local importance. A church room was added to the north of the church in 1902 and 1903. Remains of walls found during the watching brief were from this building and an extension to it. Other walls found to the south of the church were the remains of a flight of stairs up to the south doorway of the church.
Project dates	Start: 07-04-2014 End: 22-01-2015
Previous/future work	No / No
Any associated project reference codes	SGE15 - Sitecode
Type of project	Recording project
Site status	Listed Building
Current Land use	Other 8 - Land dedicated to the display of a monument
Monument type	KILN Medieval
Monument type	WALL Post Medieval
Monument type	WALL Modern
Significant Finds	POTTERY Medieval
Investigation type	"Watching Brief"
Prompt	Planning condition

Project location

Country	England
Site location	GREATER LONDON GREENWICH WOOLWICH Royal Garrison Church of St George, Woolwich
Postcode	SE18 4BG
Site coordinates	TQ 43346 78286 51.4848274475 0.0647395988795 51 29 05 N 000 03 53 E Point

Project creators

Name of Organisation	Pre-Construct Archaeology Limited
Project brief	Greater London Archaeological Advisory Service

originator	
Project design originator	Adam Garwood
Project director/manager	Charlotte Matthews
Project supervisor	Wayne Perkins
Type of sponsor/funding body	Historic Building Preservation Group
Name of sponsor/funding body	Heritage of London Trust

Project archives

Physical Archive recipient	LAARC
Physical Archive ID	SGE14
Physical Contents	"Ceramics"
Digital Archive recipient	LAARC
Digital Archive ID	SGE14
Digital Contents	"Ceramics"
Digital Media available	"Images raster / digital photography", "Text"
Paper Archive recipient	LAARC
Paper Archive ID	SGE14
Paper Media available	"Plan", "Section"

Project bibliography

1

Publication type	Grey literature (unpublished document/manuscript)
Title	Royal Garrison Church of St George, Grand Depot Road, Woolwich, Royal Borough of Greenwich: An Archaeological Watching Brief
Author(s)/Editor(s)	Perkins, W.
Other bibliographic details	PCA Report No R12012
Date	2015
Issuer or publisher	Pre-Construct Archaeology Limited
Place of issue or publication	Brockley, London
Description	A4 report
Entered by	Charlotte Matthews (cmatthews@pre-construct.com)
Entered on	5 March 2015

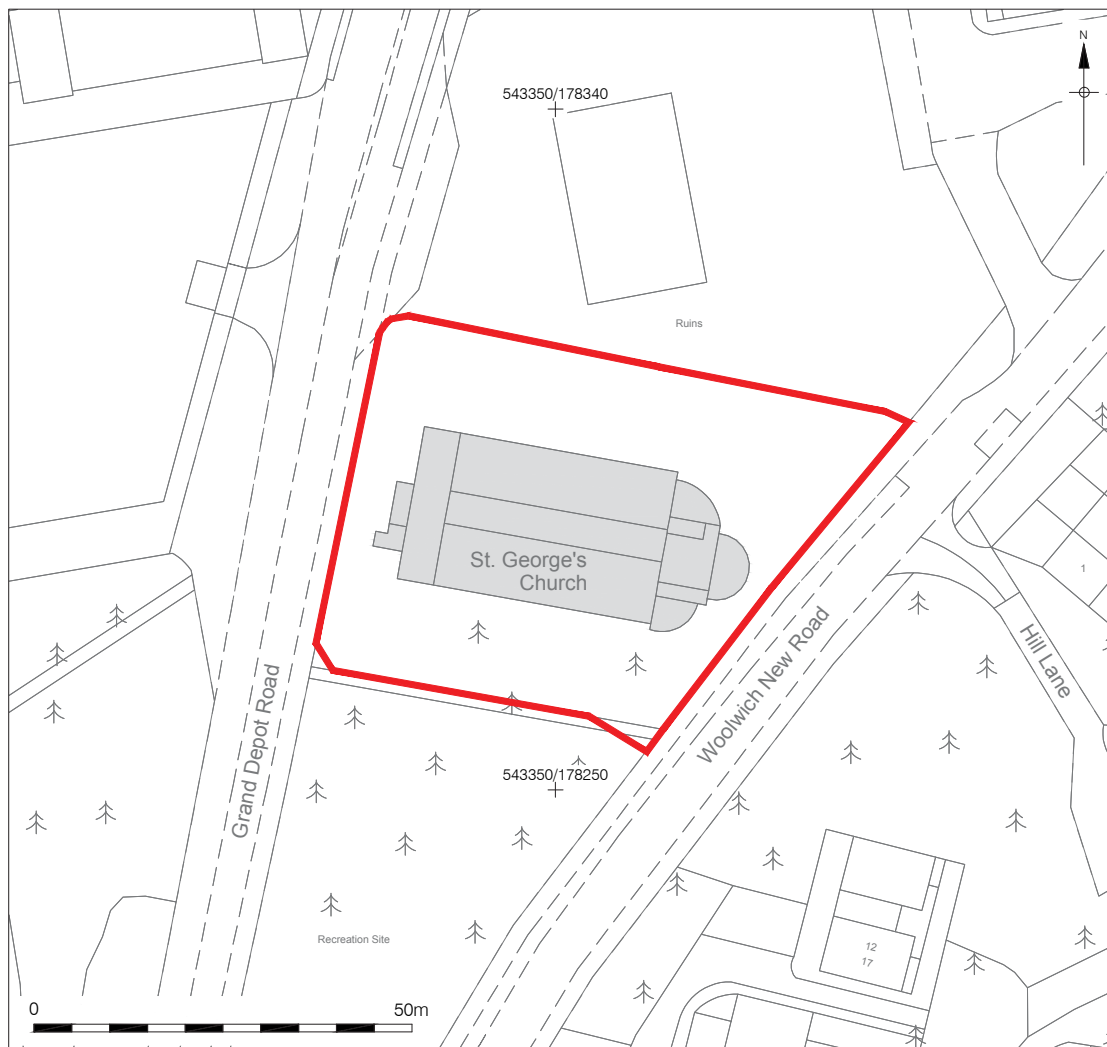


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Figure 1
Site Location
1:25,000 at A4



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Figure 2
Detailed Site Location
1:1,000 at A4

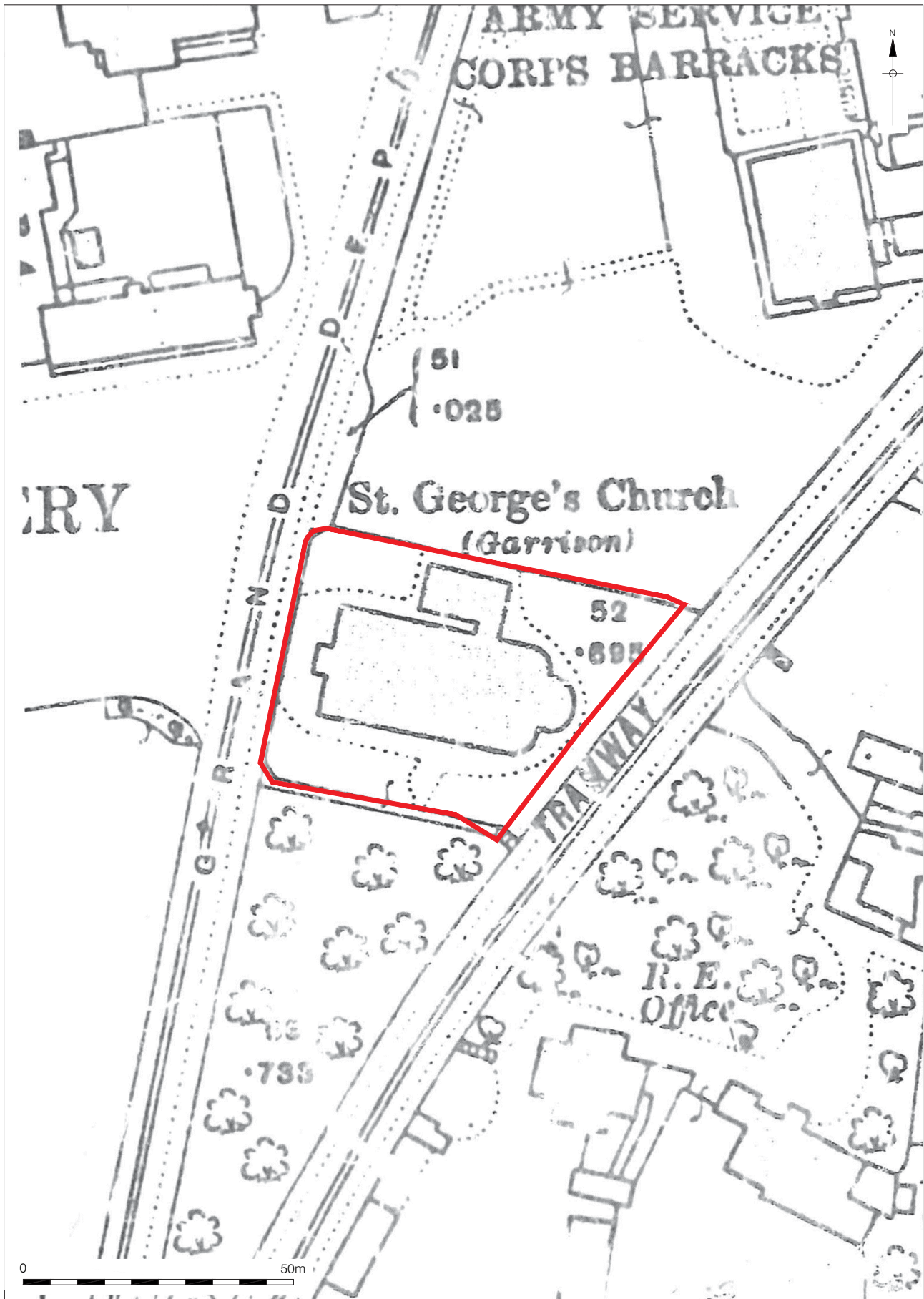


Figure 3
1914 Ordnance Survey
1:1,000 at A4

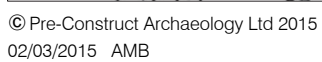


Figure 4
1935 Ordnance Survey
1:1,000 at A4

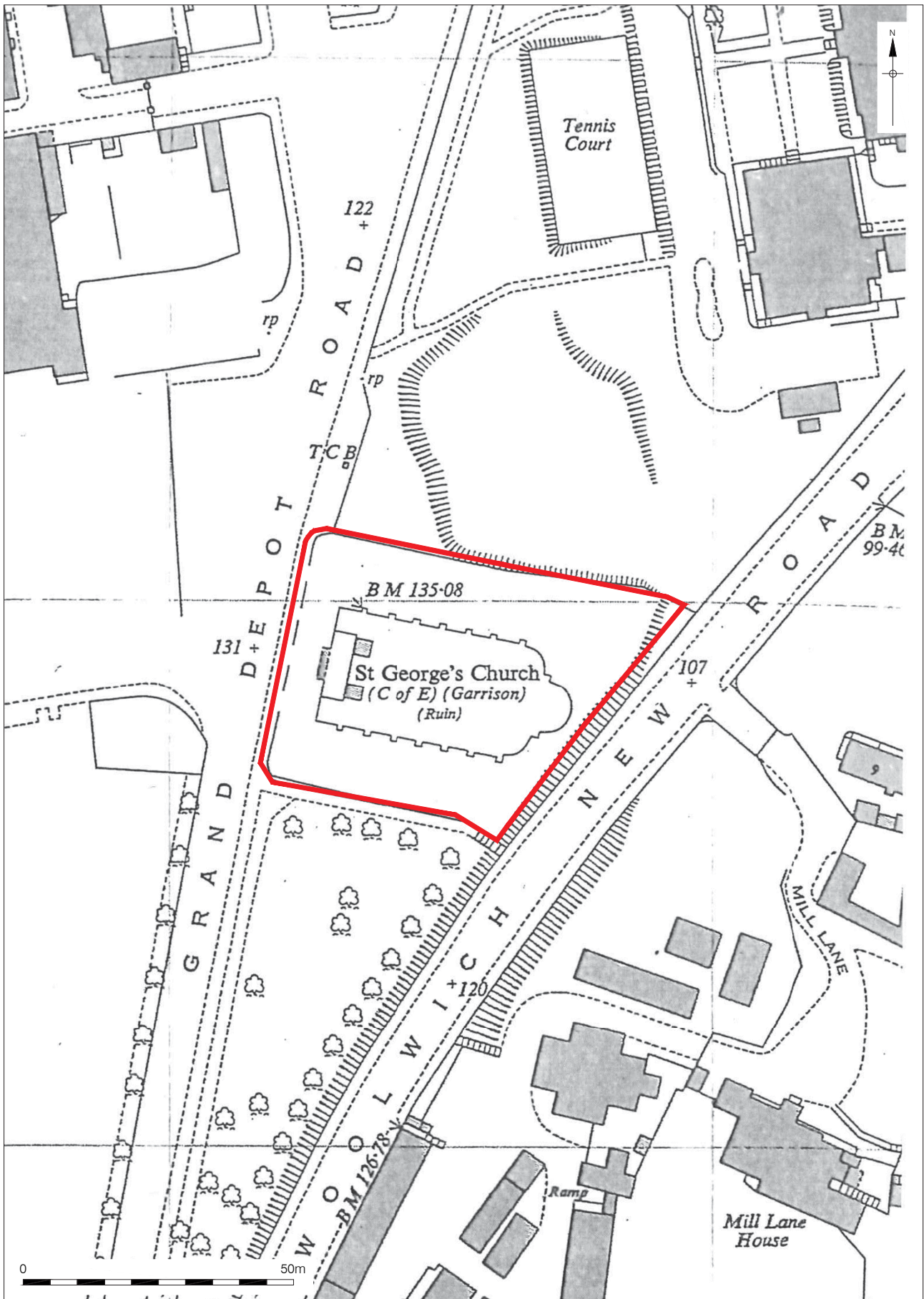
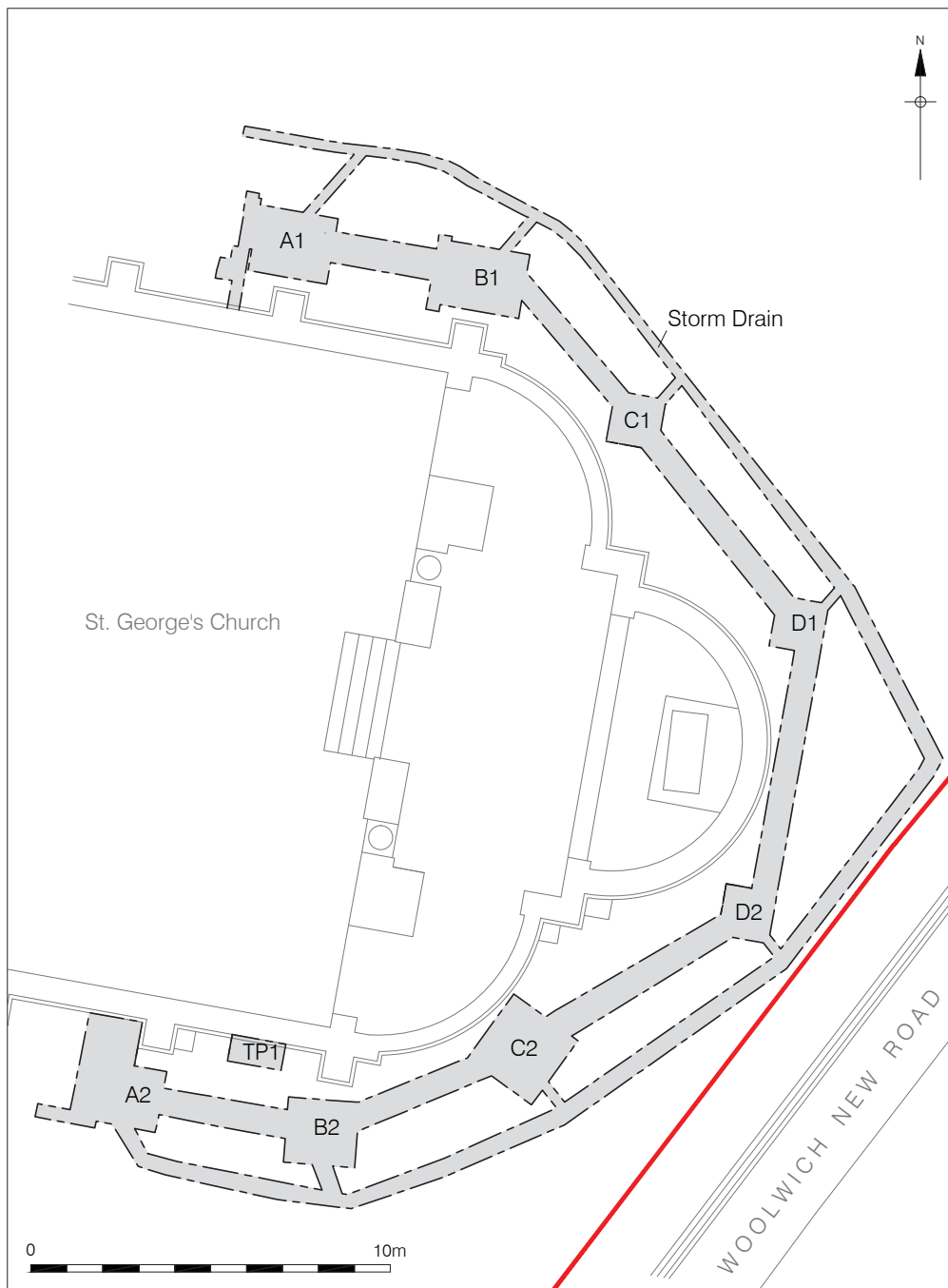


Figure 5
1956 Ordnance Survey
1:1,000 at A4



Digital data supplied by the client.
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Figure 6
 Pile Foundations and Test Pit Location
 1:200 at A4

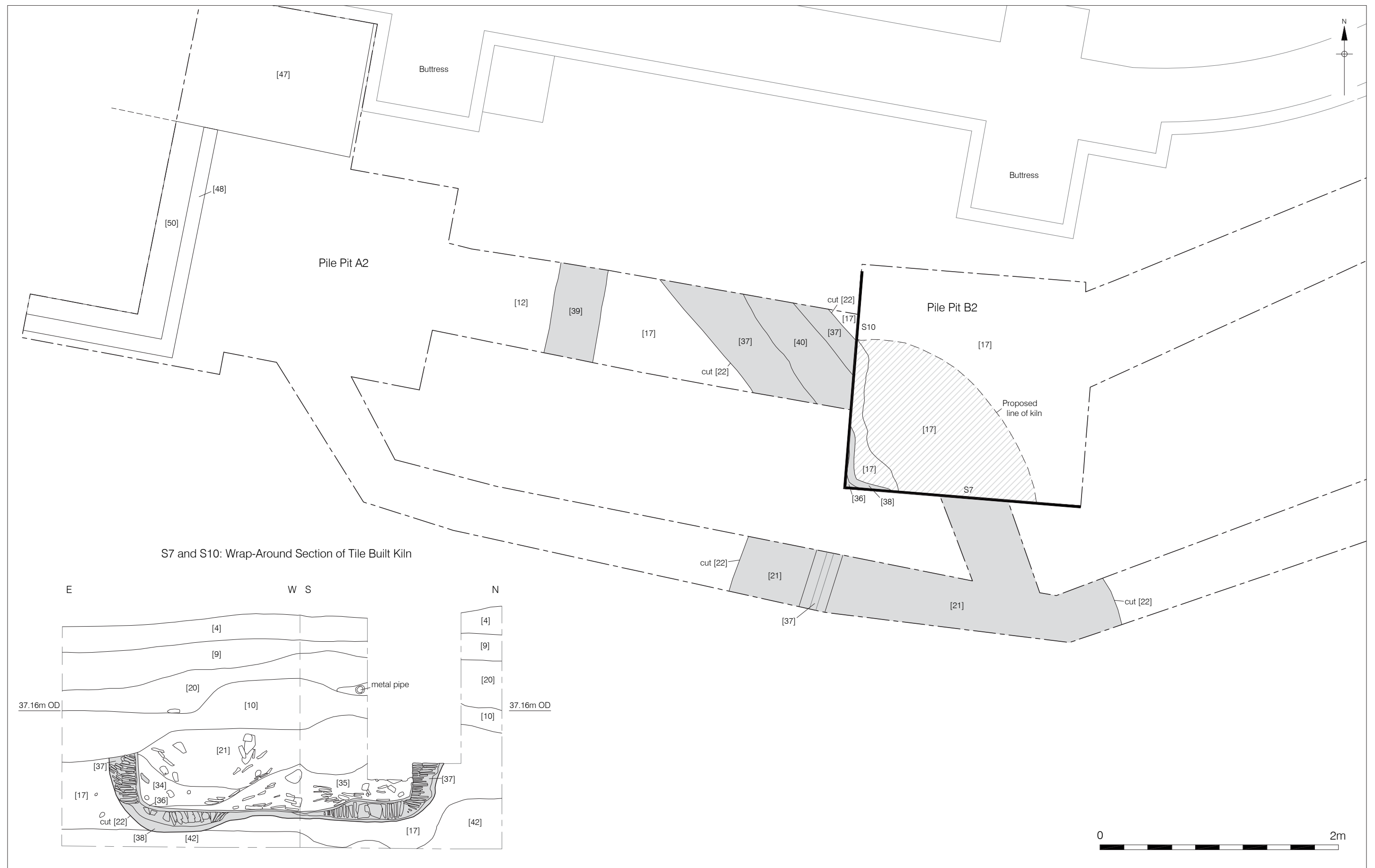


Figure 7
Plan of Piles A2 and B2; Sections 7 and 10
Plan and Sections 1:30 at A3

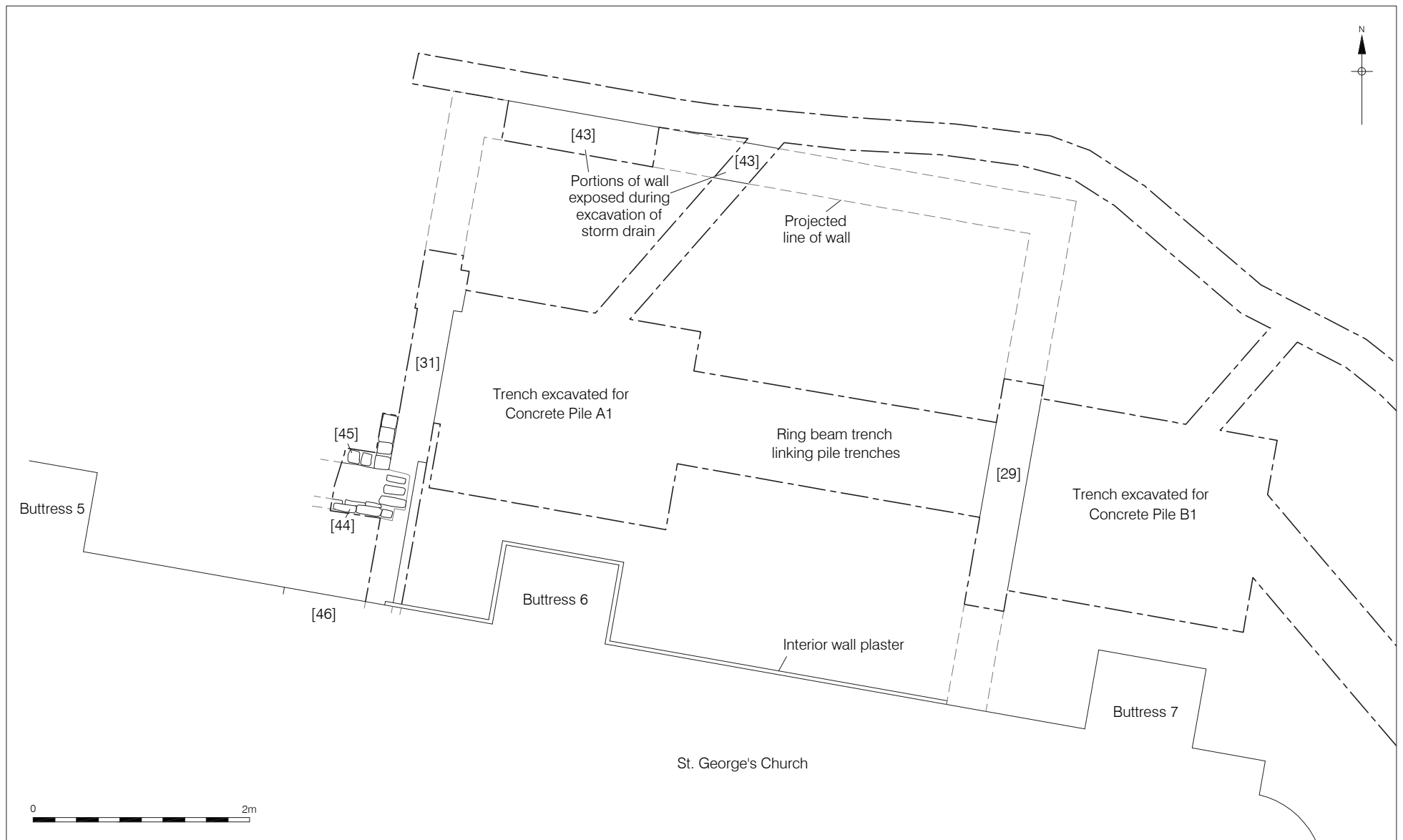
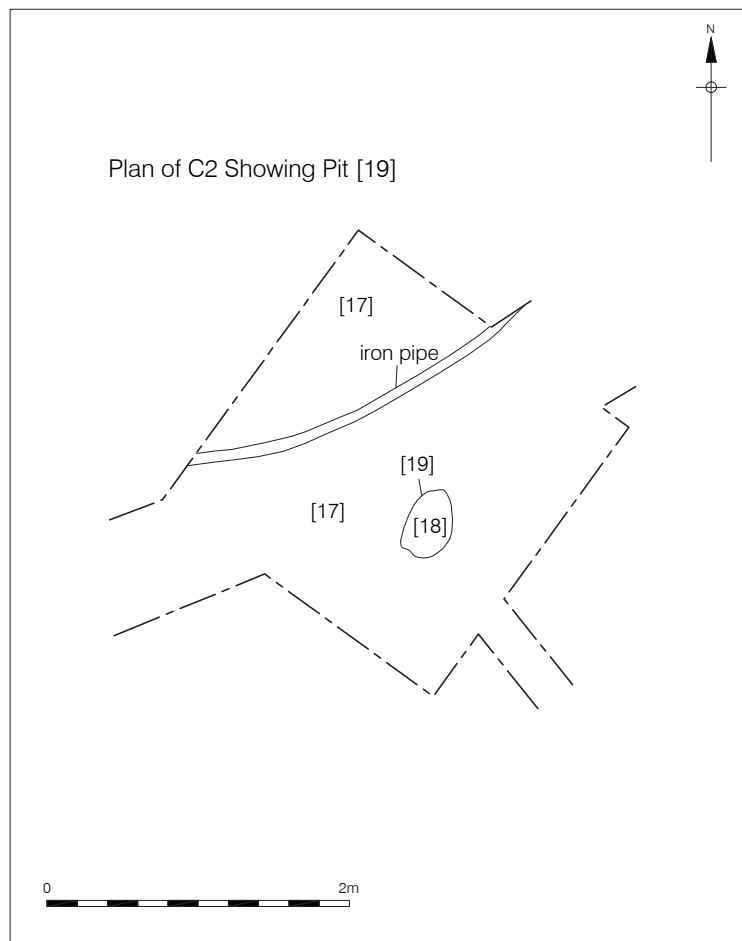


Figure 8
Plan of Piles A1 and B1 Showing Outbuilding
1:50 at A4



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Figure 9
Plan of Pile C2
1:50 at A4

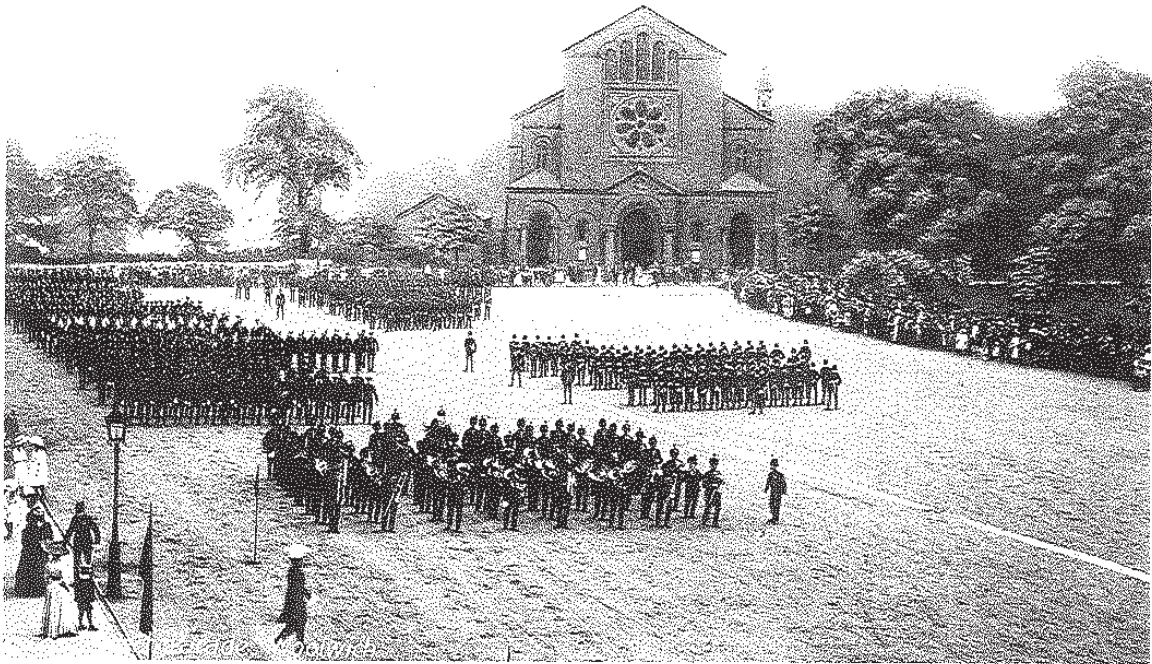


Plate 1: Early 20th Century photograph of the church and freestanding north building, looking east

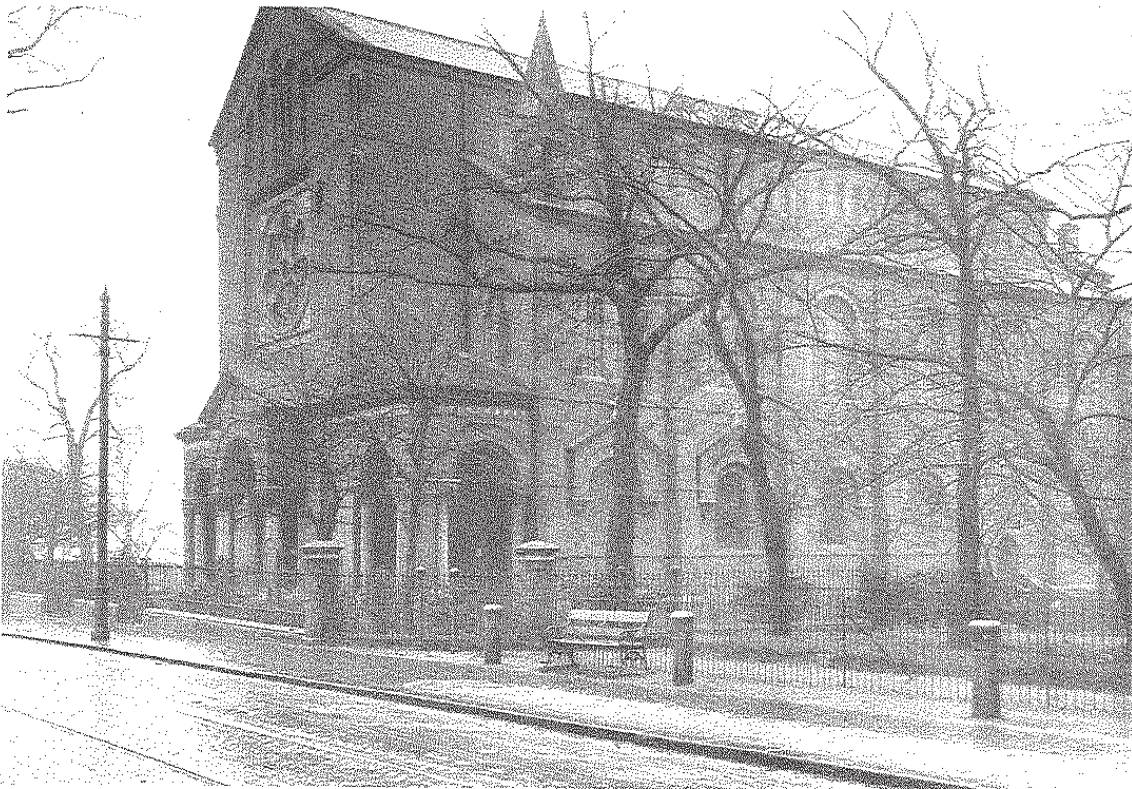


Plate 2: Early 20th century photograph of the church looking north-east, showing the south door and staircase



Plate 3: Ruins of the Garrison Church of St George, looking south-west



Plate 4: TP 1 Stepped foundations of the south elevation of the Garrison Church of St George, looking north



Plate 5: Wall [31] and [32] of north ancillary building to the church in Foundation Pile Pit A1, looking west



Plate 6: Wall [29] and [30] of north ancillary building to the church in Foundation Pile Pit B1, looking west



Plate 7: Blocked doorway in the north elevation of the church between buttresses 5 and 6, looking south



Plate 8: Wall scar in the north elevation of the church to the west of buttress 7 (right), looking south



Plate 9: Medieval Pit [19] in Foundation Pile Pit C2, looking north-west



Plate 10: Medieval Kiln [37] in Foundation Pile B2, looking south



Plate 11: Medieval Kiln [37] in Foundation Pile B2, looking south



Plate 12: Medieval Kiln [37] Flue, Foundation Pile B2 looking west



Plate 13: Flue [40] of medieval kiln [37] in ring beam trench to the west of Foundation Pile Pit B2, looking north-west (Scale 30cm)



Plate 14: Flue [40] of medieval kiln [37] in ring beam trench to the west of Foundation Pile Pit B2, looking east (Scale 30cm)



Plate 15: Medieval kiln [37] in storm drain trench to the south of Foundation Pile Pit B2, looking north (Scale 50cm)



Plate 16: Medieval kiln [37] in storm drain trench to the south of Foundation Pile Pit B2, looking east (Scale 50cm)



Plate 17: Foundation Pile A2, looking north



Plate 18: Wall 48 in the area to the west of Foundation Pile Pit A2, looking west



Plate 19: Blocked opening in the south elevation of the church to the north of wall 48, looking north

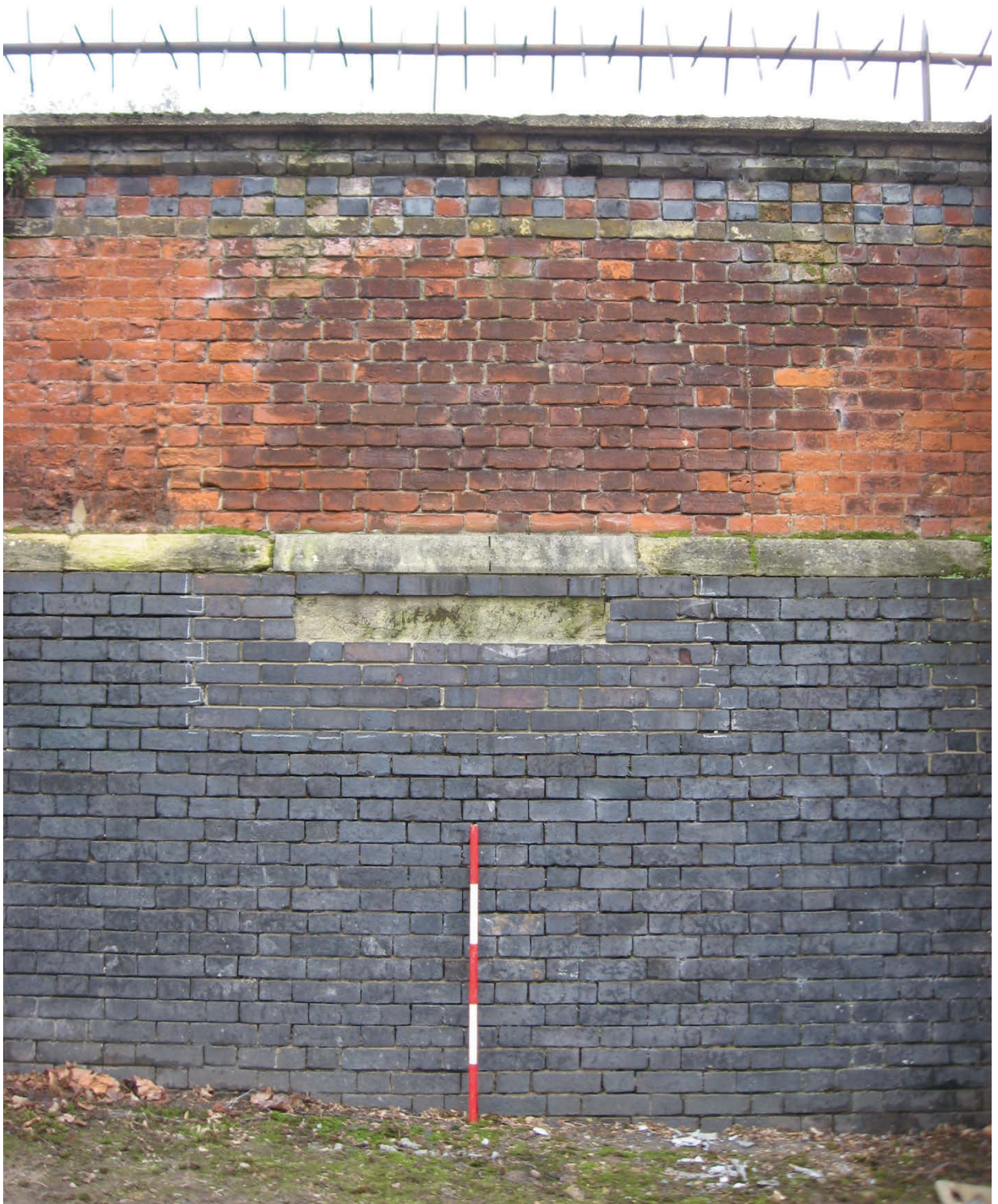


Plate 20: Blocked opening in the south elevation of the church to the north of wall 48, looking north

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