



**MDC – Work Package 3
Archaeology Detailed Desk Based
Assessment
Stepney Green Shafts**

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1 Non-technical Summary

This report presents the results of an Archaeological Detailed Desk-Based Assessment (DDBA) of the Stepney Green shafts, site 211, located within the Central Section, route window C9. This report assesses the impact of proposed Crossrail works on archaeological deposits that may survive within the site.

The Crossrail worksite at Stepney Green is located within Stepney Green Park in the London Borough of Tower Hamlets, and abuts the Stepney Village Archaeological Priority Zone. The site is currently occupied by Stepping Stones Farm, an all weather sports ground and is cut north-south by Garden Street and King John Street. The ruins of a Baptist Chapel and Congregational Church are present within the site and a close relationship between the buried archaeology and these upstanding remains is likely. Below ground remains of known buildings are also present to the east of Garden Street, including the remains of an early 19th century Sunday school; Stepney Meeting House (1672); and the 16th century Worcester House. The site has a high potential for evidence relating to the Post-medieval urbanisation of the area and moderate potential for archaeological remains relating to Medieval settlement. Excavations in the vicinity of the site and isolated spot finds within the site and vicinity suggest a low potential for the presence of Prehistoric and Roman remains. Utilities diversions on Stepney High Street may also clip the western edge of the St Dunstons Churchyard (BG219).

This DDBA demonstrates that there is an average of 2m of Made Ground across the site, within which the remains of Worcester House have been identified at a presumed depth of 1.75m Below Ground Level (BGL). Cartographic evidence has shown that most of the site was occupied by back-to-back terraced housing for the majority of the 20th century. There is the potential for archaeological remains to be present within and below the Made Ground across the site.

The Crossrail works at Stepney Green include an 8m deep basement within which are located two shafts. Two head house structures will be sited above the basement. The construction of the basement structure in which the shafts are contained will remove all archaeological deposits that survive within its footprint, and groundworks relating to the establishment of the worksite and demolition/relocation of the all weather sports ground have the potential to disturb archaeological remains. Furthermore utilities diversions works have the potential to disturb archaeological remains along their routes, potentially including burials at the St Dunstan's churchyard.

Consultation with the English Heritage Greater London Archaeology Advisory Service (GLAAS) in 2004 indicated that field evaluation should be carried out within the whole footprint of the proposed development to establish the nature, extent and survival of archaeological remains; to inform protective measures for *preservation-in-situ* of buried remains to the east of Garden Street (Worcester House); and to inform mitigation design (*preservation-by-record*) for the rest of the site. A programme of archaeological evaluation and mitigation is therefore required prior to Enabling Works.

Further mitigation comprises the protection of standing remains (the Baptist Chapel and Congregational Church); a general archaeological watching brief on utilities diversions at Stepney High Street, Stepney Way, Stepney Green and Ben Jonson Road; and targeted archaeological watching briefs at worksite establishment and utilities diversions at Garden Street, King John Street, through Stepping Stones Farm and through Stepney Green Park.

The historic sett surface on Garden Street should be replaced in original position (if feasible) if Enabling Works necessitate its removal. The surface should also be protected if construction vehicles are to be using the route.

2 Introduction

2.1 Scheme Background

Crossrail is a major new cross-London rail link designed to serve London and the southeast. The scheme will include the construction of a twin bore tunnel on an east-west alignment under central London and the upgrade of existing rail lines to the east and west of central London. It also includes the construction of new central London stations, providing interchange with London Underground, National Rail and London bus services, and the upgrading or renewal of existing stations outside central London.

The Crossrail route is divided into four sections: a central section in central London, and outside of central London, western, north-eastern and south-eastern sections. Each section is further sub-divided into route windows, within which are located a number of sub-sites. The subject of this Detailed Desk Based Assessment (DDBA) is Site 211 Stepney Green Shafts, located within the Central Section, route window C9.

2.2 Nature and Extent of Work

The Stepney Green Shaft is located in a narrow corridor of Stepney Green parkland between Stepney Way and Stepney Green. The site falls within the London Borough Tower Hamlets (LBTH), between the all weather sports ground to the west and Garden Street and Stepping Stones Farm to the east (Figure 1) (Crossrail 2008a).

The Crossrail works are divided into Enabling Works and Main Works. Enabling Works are defined as those works that are required to facilitate the Main Works, and as such are required prior to the start of the Main Works programme.

Enabling Works at Stepney Green that could disturb archaeological remains include:

- Levelling and other processes relating to the construction of the worksite (e.g. foundations for accommodation and batching plant) may impact upper levels of archaeological deposits relating to Worcester House; the Baptist Chapel; and the Congregational Church.
- Demolition and relocation of the existing all weather sports ground and changing facilities.
- Dewatering to the east of Garden Street may affect the preservation of buried archaeological deposits. Specific information regarding the dewatering is to be confirmed at detailed design, however, the effect is likely to be minimal and will follow archaeological mitigation works.
- Utilities diversions – will partially or completely remove archaeological remains along their routes.
- The movement of heavy machinery within the worksite may affect buried and standing remains relating to Worcester House; the Baptist Chapel; and the Congregational Church to the east of Garden Street.

The Main Works comprise an 8m deep basement which encompasses the two Sprayed Concrete Lining (SCL) shafts. Two head house structures will be sited above the basement (Crossrail 2008). The following impacts will be caused by the Crossrail Main Works at Stepney Green Shafts.

- Construction of the basement to slab level will completely remove archaeological remains at those locations. The use of ground anchors will be confined to the London Clay and therefore will not affect buried archaeological deposits.

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- Excavation of the basement (to contain the shafts) from the surface to c.102.45m ATD (within the London Clay) will completely remove all archaeological deposits within its footprint.

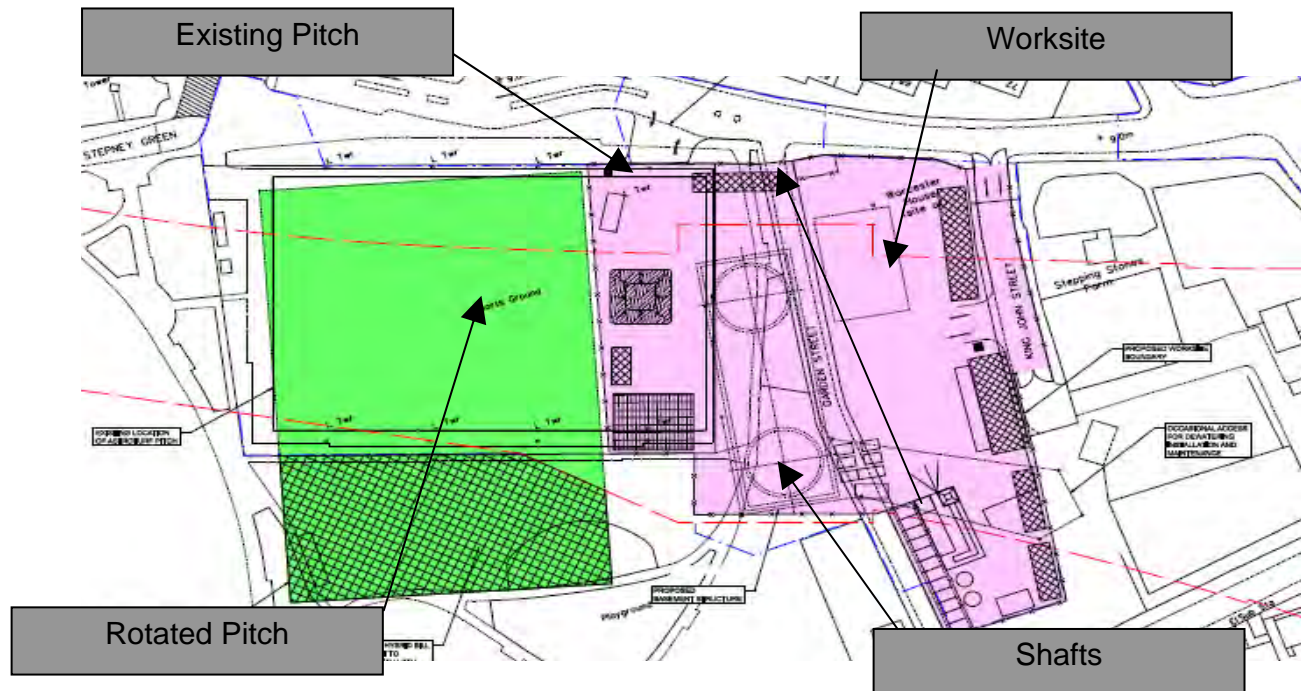


Figure 1. Stepney Green shaft worksite layout (Crossrail 2008a)

2.3 Limitations

The DDBA was limited by the following omissions:

- Information regarding the foundations and basements of the back-to-back terraced housing that occupied the site during the 20th century.
- Information regarding any previous ground levelling that may have occurred following the demolition of the terraced houses and subsequent construction of the all weather sports ground.
- No consultation with users, custodians, and interested bodies has been carried out since initial consultations with EH/GLAAS in 2004.

The following sources have not been examined in detail for this DDBA and are not considered relevant:

- Trade directories; wills, rate books; census returns; business accounts; historic photographs; lithographs; prospects and paintings; sale particulars; inland revenue maps; fire insurance plans.
- Land registry for property registers, title deeds and title plans, registered leases, conveyances, transfers, deeds, property agreements.

2.4 Surface Geology and Topography

The following summary is based on the geotechnical sectional interpretative report 3: Liverpool Street to Pudding Mill Lane and Isle of Dogs (Crossrail 2007a) and the Running Tunnels and Shafts Scheme Design (Crossrail 2008). The interpretation of these data provides useful stratigraphic information for the site.

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The regional geology of the area around Stepney Green is typical of that for the London Basin, comprising Cretaceous Chalk, overlain successively by Palaeogene Deposits (Thanet Sand Formation, Lambeth Group and London Clay Formation). River Terrace Deposits (Taplow Thames terrace gravels) overlie London Clay across the site and in the north and west of the site these are overlain by alluvial deposits.

The area is generally flat with the exception of the farm, parts of which are raised c.0.5 to 1m above the level of the surrounding streets. In particular, the ground where the Congregational Church originally stood is c.1m higher than that to the north and east. This indicates that the floor of the church was raised above its contemporary ground level and indeed a basement is documented, probably infilled with demolition debris after the church was damaged by bombing in WWII. Crossrail borehole SG11R encountered probable brick foundations from the church c.0.7m thick at c.1.2m BGL (Crossrail 2005)

Table 2 below summarises the assumed stratigraphy at the Stepney Green shaft presented in the Running Tunnels and Shafts Scheme Design (Crossrail 2008a), based on data from the Package 2, 3 and 8 ground investigations.

Structure	Stepney Green Shafts	
	Eastbound	Westbound
Top Level of Shafts (mATD)	~99.8	~99.8
Base Level of Shafts (mATD)	~74.5	~70.6
Stratigraphy	Surface Level (mATD)	
Made Ground	109.5 ± 0.5	
Alluvium	107.5 ± 1	
River Terrace Deposits	106.5 ± 1	
London Clay	104 ± 1	
Lambeth Group	79 ± 1	
MLGH	71 ± 1	
Thanet Sand	58 ± 2	
Chalk	48 ± 3	

Table 1. Assumed stratigraphy on site (Crossrail 2008a)

Refer to drawing number P30103-C1M15-G00-D-50007 & 50017 (Appendix 9.1) for geological cross-sections and the locations of the boreholes mentioned in the text.

3 Aims and Objectives of the Assessment

3.1 Aims & Objectives

The objective of this DDBA is to understand the site-specific issues of survival or past removal of potential archaeological remains, localised truncation from individual basements etc., and to identify any pertinent historical records relating to the site. The results of this analysis will be used to formulate a site-specific Written Scheme of Investigation (WSI).

In summary, the purpose of this DDBA is to:

- Identify more fully the ground conditions at the site;
- Review the construction impacts; and

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- Identify further archaeological evaluation required, which will in turn inform subsequent phases of mitigation planning.

4 Methodology

4.1 Approach

The Detailed Desk Based Assessment (DDBA) is a targeted research exercise using existing written, graphic and electronic information to identify the likely character, extent, quality and value of the known or potential archaeological resource at a specific site.

A DDBA is not required for every worksite and is carried out only in cases where additional information is required to inform decisions regarding an appropriate mitigation strategy. The decision as to whether a DDBA is required at a particular site is based on:

- The importance of the known or potential archaeological resource;
- The nature of the proposed construction works; and
- Any gaps in the existing archaeology information gathered to date for the Crossrail ES and the Crossrail Archaeology Programming Assessment (1E0318-G0E00-00006 Rev. B).

A higher level Archaeological Desk Based Assessment (DBA) was carried out in 2003/4 for the Crossrail ES, comprising generic or area based research fed into the archaeological baseline for the Crossrail scheme. This DDBA updates that baseline and will take into consideration the following data should they have the potential to contribute to the site-specific WSIs:

- Design development since the ES and all associated information collected by Crossrail;
- Changes to the Statutory and Local Authority designations;
- Targeted archaeological and documentary data;
- Targeted historical research, such as map regression;
- Geotechnical and/or geological data, and aerial and ground survey data;
- Any additional data, such as chance finds, relevant fieldwork results etc;
- Visual Site Appraisal; and
- Non-listed built heritage assessment.

4.2 Standards and Guidance

This DDBA has been carried out in accordance with Crossrail standards and guidance:

- Crossrail. 2008d. Archaeology, Procedure for Detailed Desk Based Assessment. Document Number 23042008-96BA-OAKW.
- Crossrail. 2008e. Archaeology Generic Written Scheme of Investigation. Document Number 14022008-44ES-P2Z1.

4.3 Sources Consulted

In producing this DDBA, data relevant to the site was collected from the following sources:

- NMR/SMR records, held by English Heritage and local authorities, provided by MoLAS in the following formats:
 - Shapefiles (.shp) of the full GLSMR dataset; burial grounds (polygons and points), Registered parks and gardens, Scheduled Monuments, and site codes;
 - PDFs (.pdf) maps showing the locations of the GLSMR dataset and Site Codes;

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- Links to the Greater London Sites and Monuments Record - Search Report listing full GLSMR descriptions for MDC 2, 3 and 4.
- Records of archaeological priority zones or equivalent areas designated by local authorities, provided by MoLAS as shapefiles (.shp);
- LAARC (London Archaeological Archive and Resource Centre) fieldwork database and summaries, provided by MoLAS in the following formats:
 - Stepney Green Site LAARC summaries.doc;
 - Stepney Green site summary table.doc;
- Historic mapping, provided by MoLAS, comprising the following maps:
 - 1914, 1948, 1950, 1954, 1966 and 1981 Ordnance Survey Mapping
 - 1824-26 – Greenwood’s map of London
 - 1819 – Horwood map of London
 - 1799 – Richard Horwood’s map of London, Westminster and Southwark
 - 1746 – John Rocque’s map of London
 - 1703 – Gasgoigne’s map
 - 1615 – Stepney Land holdings
- Historic place names records;
- Unpublished archaeological reports, including data not yet available on the LAARC database, provided by MoLAS:
 - Crossrail MDC2 3 & 4 Archaeological Sites Not Available on the LAARC
 - The archaeological report presenting the results of the excavations on Worcester house in 1985.
- The Geotechnical Sectional Interpretative Report 3: Liverpool Street to Pudding Mill Lane and Isle of Dogs (Crossrail 2007a);
- Published secondary sources dealing with the geology, archaeology and built environment;
- Historic Building records and conservation area appraisals and management plans;

Additional documentary materials used to inform the DDBA included:

- Further technical reports held by Crossrail:
 - Crossrail. 2006. Archaeology Programming Assessment. Document Number 1E0318-G0E00-00006 Rev. B. November 2006.
 - Crossrail. 2007a. MDC Work Package 3, Running Tunnels & Shafts Obstructions Report. Document Number CR-SD-CT1-CE-RT-00015.
 - Crossrail. 2005. Assessment of Archaeological Impacts, Technical Report. Part 2 of 6, Central Section: Westbourne Park to Stratford and Isle of Dogs. Document Number 1E0318-C1E00-00001. February 2005.
 - Crossrail. 2005a. Structures at King John Street, Stepney Green, London E1 Architectural and Historical Appraisal. Document Number 1E0418-C1E00-00002.
 - Crossrail. 2008b. MDC3 Archaeology, Updated Baseline Assessment. Document Number 20032008-84MB-YYK5.

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- Crossrail. 2008a. Civil, Structural & Tunnel Engineering Report, MDC3 Stepney Green Junction Shafts and Caverns, Volume 3 of 7. CR-FRD-CT4-CE-RT-00003.

5 Results

5.1 Archaeological and Historical Background

The general archaeological potential in the Stepney Green area is described in the Crossrail Archaeological Impact Assessment (Crossrail 2005) and subsequent Updated Baseline Assessment (Crossrail 2008b). This DDBA updates the baseline with data regarding archaeological interventions and GLSMR data from within and adjacent to the sub-sites. Site summaries and GLSMR data for each of the sites mentioned in this section are provided in Appendices 9.4 and 9.5. The locations of the archaeological sites mentioned in this section are presented in Drawing Number P30103-C1M15-E00-D-50001 (Appendix 9.1).

There are no Scheduled Monuments in the vicinity.

The site abuts the western side of the Stepney Village Area of Archaeological Importance, as defined by LBTH.

The Medieval and possibly Saxon St Dunstan's Church and associated churchyard (BG218) are located to the east of the Crossrail worksites at Stepney Green. Utilities diversions on Stepney High Street may clip the western edge of the St Dunstan's Churchyard. A plague pit (BG219) was discovered in 1923 c.280m south-west of the Crossrail worksite at Stepney Green.

Standing building remains include the entrance to a c.1811 Baptist Chapel (or Academy), with associated gate piers, at the north-eastern corner of Garden Street and the northern wall of the 1862-3 Congregational Church south of King John Street. An arched doorway attached to the church wall and a gate pier formed parts of an open passageway adjacent to the church. Boreholes (SG11R) indicate that foundations from the church survive beneath the raised platform south of the standing remains (Crossrail 2005). For further detail regarding these upstanding remains see section 5.5 and Appendix 9.3.

Prehistoric

There is no evidence for Palaeolithic activity around Stepney Green although there is significantly more in the wider area. Uncovered c.50m to the east of the Crossrail worksite for Stepney Green, a pit and plough soil were encountered, containing the fragments of two late Bronze Age/early Iron Age storage jars (SHS79). It is possible that they are associated with funerary practices. Due to the proximity of SHS79 to the Crossrail Worksites at Stepney Green there is a moderate potential for further evidence within the site boundary. Such remains would be considered of moderate importance.

There is also a low potential for chance finds of Prehistoric artefacts, inferred by the discovery of material such as knapped flint in the wider area (WHH94). Such fragmentary remains would be of low importance (Crossrail 2005).

Roman

There is moderate potential for evidence of Roman activity within the site. A Red Ware cup with handle and two *unguentaria* (flasks) of blue-green glass were found in the south-east corner of the site providing direct evidence of Roman activity. Geotechnical investigations (Borehole SG17) showed the presence of oyster shells within the Made Ground, which could denote evidence of Roman or Medieval activity. Situated 500m to the north of the Crossrail route is one of the main arterial roads running east from the Aldgate at *Londinium* to Colchester. It followed the line of Whitechapel Road as far as what is now Whitechapel Underground Station, and then headed northeast to cross the River Lea at Old Ford. A second road ran from just south of Aldgate to Shadwell in the south-east where there was another settlement. Large extra-mural cemetery areas extended out along these two roads. Beyond this there is evidence for a wider

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pattern of Roman land use, notably field ditches, indicating a managed agricultural landscape of scattered farmsteads and villas supplying produce to *Londinium* (Crossrail 2005).

Medieval

There is a low to moderate potential for archaeological evidence within the site relating to the medieval period. There is no direct evidence for medieval activity on the site, however there is an abundance of evidence within the vicinity. St Dunstan's church, erected on the site of a former wooden structure in 925 AD and its churchyard (BG218) are immediately east of the Stepney Green site and just to the south-west of the church is the site of a house erected in 1299 and owned by the Lord Mayor of London (at one point Parliament was held here). Excavations, approximately c.20m to the east of the site boundary identified evidence of medieval settlement in the form of Saxon and late medieval pits. Further east of the site boundary, just on the western side of Stepney High Street a Red Glazed Ware moneybox was found.

The hamlet of Stepney derived its name from the Anglo-Saxon *Stebunhithe* (Stebba's landing place). The manor of Stepney, largely open land with marshes to the south and forest to the north, covered most of the area of modern Tower Hamlets and was probably part of the original foundation endowment of the Bishopric of London in AD 604. It is recorded as the vill and manor belonging to the Bishop in the Domesday survey of 1086, with several tenanted sub-manors, and remained so throughout the medieval period. The main Roman highway continued in use, but in 1110 a new section along Mile End Road and Bow Road was constructed, south of the old route (Crossrail 2005).

Post-medieval

There is a high potential for archaeological remains relating to the post-medieval period within the site. As the post-medieval period progressed, so suburban infill development of the city fringes increased. Elsewhere the rural hinterland was only very gradually urbanised, around the medieval network of roads, farms and villages. The Manor of Stepney remained in Episcopal hands until Bishop Ridley surrendered it to the King in 1550, when it passed to the Wentworth family, as did the marshlands of the Poplar Manor. Activity was mostly limited to agriculture and brickearth quarrying, although Tudor sea trade ensured that the ship provisioning and repair yards along the Thames around Wapping, Limehouse and Poplar were expanding (Crossrail 2005).

A building depicted as King John's Palace is shown on the c.1550 map of London in the centre of the eastern area of the site. It is possible that below ground remains relating to this building are still present on the site. Worcester House was also erected on the site during the 16th century, just to the north of King John's Palace. Excavations by the Department Of Greater London Archaeology in 1985 (WOR85) showed that below ground remains of Worcester House still survive at a depth of approximately 1.75m BGL. The plan from these excavations below (Figure 2) shows a part of the extent of Worcester House. Stepney meeting house was erected in the south-east corner of the site in 1674 and serviced the Stepney meeting, a notable early Protestant Non-Conformist congregation founded in 1644 (Crossrail 2005a, p1).

Remains relating to Saxon, Medieval and Post-medieval Stepney Village would be of moderate importance (Crossrail 2005).

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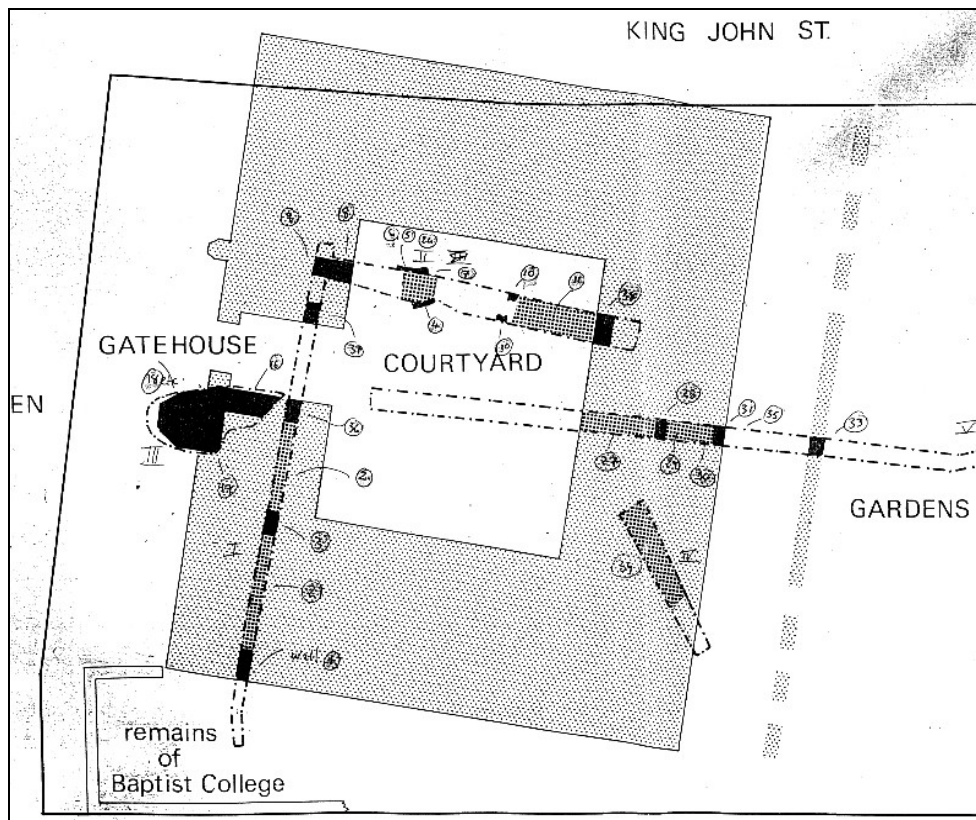


Figure 2. Plan from the 1985 excavations of Worcester House

By the time of Rocque's map of 1746, the area from Whitechapel towards the city was built-up, with less intensive occupation eastwards along Mile End Road and Stepney still recognisably a village. It was during the 18th century that the Baptist church, of which some extant remains are present, was erected to the west of Worcester House on the northern boundary of the site. Along the Thames the settlements of Wapping, Ratcliff and Limehouse had merged into a commercial zone of wharves, warehouses and shipyards, although to the east, Poplar was still separate, as was the villages of Bromley, Bow and Old Ford, northwards along the Lea. Commercialisation and related industry accelerated with the construction of West India Docks which expanded with Britain's Empire and were a major employer, creating a need for housing. Housing gradually expanded over the area until Stepney was engulfed in the 1840's. Urbanisation was accelerated by the arrival of one of London's first railways through the area, the Eastern Counties, with its original terminus at Shoreditch station opened in 1840 (enlarged and renamed Bishopgate in 1847).



Figure 3. Baptist Chapel ruins



Figure 4. Interior of Baptist Chapel ruins

An architectural and historical appraisal of the standing remains at the Stepney Green site was carried out in 2003 (XRE03) and the following summarises the findings of that research. A Baptist Chapel was constructed in c.1811 as the chapel of what was commonly known as Stepney College. The chapel was built partly on the site of the former Worcester House. From

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c.1850 this chapel was used by the Plymouth Brethren. Remains of the chapel are located in the north-west corner of the site (Figures 3 and 4).

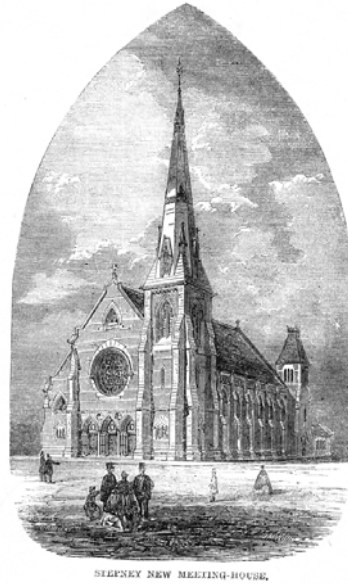


Figure 5. The Congregational Church

A Congregational Church (Figure 5) was erected in the southern part of the site in 1862-3 to replace the meeting house. Both buildings were damaged by bombing during WWII; the chapel was burnt out leaving only the front entrance and stair vestibule; and the Congregational Church was demolished in the early 1950s with the exception of the rear wall (Figure 6) (Crossrail 2005a).



Figure 6. View of the rear wall of the Congregational Church from the north

A stone gate pier (Figure 7) surviving just beyond the southern edge of the site was at one side of an open passage that originally ran alongside the church between Spring Garden Place and King John Street, where a doorway, surviving in the rear wall of the church was subsequently blocked (Crossrail 2005a).



Figure 7. Stone gate pier relating to the Congregational Church just south of the proposed worksite

Remains relating to Worcester House, associated gardens, yards, and related structures including the non-conformist chapel, Congregational Church and Baptist academy are of high importance (Crossrail 2005).

Modern

The site changed significantly during the 20th century. Cartographic evidence demonstrates that the majority of the site was occupied by back-to-back terraced housing running along Latimer Street, Tillotson Street and Garden Street for the majority of the 20th century. By 1981 the terraced housing had been demolished and the land was derelict. Following this an all weather sports ground was laid in the western half of the site and in 1979 the eastern half became Stepping Stones Farm, a modern urban farm set up as a result of community consultation including local residents, schools, churches and community groups. The urbanised nature of the area has been confirmed at archaeological sites in the vicinity where Made Ground containing late Post-medieval and Modern material have been frequently encountered (DRW04; RCT05; CLX05; SHY04; WHH94; and CZT06). The locations of these sites are shown in Drawing Number P30103-C1M15-E00-D-50001 (Appendix 9.1).

5.2 Site Specific Historic Map Regression

The analysis of historic mapping and Ordnance Survey mapping provides an understanding of the historic development of the Stepney Green Site. While early historic maps are a useful tool in the identification of archaeological potential, their inaccuracy means that they cannot be relied on for specific previous impact locations. Historic mapping becomes more accurate as time progresses, with the Ordnance Survey first edition providing the first reliable mapping resource for the identification of previous impacts and potential levels of truncation.

The historic maps consulted are listed in section 4.3 and can be viewed in appendix 9.1 (Drawing Numbers P30103-C1M15-E00-D-50101 to 50115).

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17th century – Mapping from the 1600s shows no development on the site. The map shows a church to the east of the site (St Dunstan's church) and a sparse scattering of dwellings close to the church. The area in which the site lies is labelled as 'Drayners Land', a probably reference to the landowner.

18th century – The site changes dramatically by 1703. A small part of the southwest corner is depicted as Fraizers. It is likely that this is also a reference to the landowner. The northern boundary is occupied by dwellings and associated burgage plots that run south encompassing a large area of the site. A burgage plot is also present running north along the eastern boundary. It runs up to a large L-shaped building that may represent Worcester house. By the mid 18th century the whole of the site is covered by burgage plots and an area of open land associated with the L-shaped building. The 1799 map does not provide complete coverage of the site, however part of a large building can be seen in the southeast corner of the site. Although its full extent cannot be determined this is likely to be the congregational church that occupied that area until the late 1940's.

19th century – In the early 19th century the western half of the site running up to Garden Street is divided by two field boundaries. There are a small number of dwellings running along either side of the northern half of Garden Street and garden plots along the northern boundary, running south from Stepney Green. A building depicted as King John's Palace is present close to the eastern boundary, just south of the site of Worcester House. The latter is depicted by name on a map of London produced in c.1550, but is not seen again until the 1819 map. It is probable that the two buildings are one in the same. By 1824 a second large square building is depicted in the south-east corner of the site. It is not labelled, but is clearly a depiction of the Congregational Church, built in 1862-3, which replaced a meeting house built in 1674 (Crossrail 2005a).

20th century – The 1914 map depicts a highly altered landscape. The congregational church and school are still present in the south-east corner, however, the remainder of the site is occupied by back-to-back terraced housing running along Latimer Street, Tillotson Street and Garden Street. The area previously occupied by King John's Palace is occupied by terraced housing and King John Street. Two further schools are shown within the site. The first fronts onto the western side of Garden Street, in the south of the site, and the second on the intersection between Garden Street and Stepney Green. The latter is labelled as Red Coat School and still occupies the same area today under the title of Mowlem Hall.

The London County Council Bomb Damage Maps show the extent of damage caused by bombing during World War II. The East End of London suffered high levels of bombing and the Stepney Green site was no exception. Both a V1 Flying Bomb and a V2 Long Range Rocket struck immediately to the east of the Crossrail worksite along Stepney High Street. The buildings fronting these roads (and presumably the road along which service diversions are planned) were totally destroyed by these rocket strikes. There was also significant bomb damage to the buildings along King John Street, Garden Street, Tillotson Street, Copley Street and Diggon Street. Not a single building within these streets survived without at least minor blast damage. The Congregational Church on Spring Garden Place was seriously damaged and many buildings on Garden Street suffered total destruction. The Sunday School on Garden Street suffered general, but not structural blast damage.

The 1948 OS Map clearly shows the buildings that were cleared after WWII, with many buildings along Garden Street having been removed. Notably, within the Crossrail worksite the Congregational Church has gone, however, the building on Garden Street that was previously the Sunday School is now labelled as the Congregational Church, presumably taking over the role of the bombed out church. Although the Chapel on the corner of Garden Street and Stepney Green only suffered minor blast damage, it appears to be no longer in use by the 1948 OS Map.

There is no change to the area shown on the OS maps of 1950; 1954; and 1966, however, the 1981 map shows that the terraced housing has been demolished, leaving only Mowlem Hall

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and numbers 150 and 152 Stepney Green. The street layout remains the same on the 1981 map.

5.3 Visual Site Appraisal

A Visual Site Appraisal (VSA) was carried out on the site. The aims of the VSA, where practicable, are to:

- Analyse the topography of the area and identify buildings, services or archaeological structures (above and below ground) which will have compromised the integrity of the resource or may act as a constraint on future evaluation or mitigation;
- Examine the immediate surroundings of the site for evidence of truncation that may continue in to the site;
- Note any topographical features, which might be a focus for human activity, and identify and describe any geomorphic or manmade activity that could mask archaeological sites;
- Determine the current state of preservation of monuments and surrounding land-use, noting current and potential activities that threaten their long term preservation.

Results

The site is bounded to the north and south by Stepney Green and Stepney Way respectively, in the west is a large all weather sports ground (Figure 8) and Stepping Stones Farm is located to the east. The Crossrail footprint falls within areas of the park, the sports ground, Garden Street, King Johns Street and the western part of Stepping Stones Farm. The site is bisected by Garden Street.



Figure 8. View of all weather sports ground from Garden Street

The topography of the site to the east of Garden Street is characterised by the former buildings that existed on the site, some of which partially survive as upstanding ruins, notably the Baptist Chapel (Figures 3; 4; 9 and 10) in the north of the site and part of the Congregational Church in the south (Figure 6 and 12). The topography of the site is uneven due to the presence of raised earth mounds of approximately 1m in height upon which former buildings were situated (Figure 11), particularly in the location of the former Worcester House, marked on OS mapping in the northern part of the site.

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Figure 9. View of ruined Baptist Church, from Stepney Green



Figure 10. View of ruined Baptist Church

Stepping Stones farm constitutes a break in character from the surrounding area with the farm providing an unusual rural landscape set within an urban area. The farm itself comprises a set of small fields, enclosures, farm buildings and sheds set between Garden Street and Stepney High Street.

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Figure 11. View of raised ground in Stepping Stones Farm

The western part of the site is currently occupied by parkland, a pathway and the all weather sports ground. This part of the site is urban designed and is considerably flatter than to the east of Garden Street.



Figure 12. View of ruined Congregationalist Church, from Garden Street

There are no existing structures on the site that are likely to have caused significant disturbance to archaeological horizons, although the nature of landscaping required in the construction of the all weather sports ground.

5.4 Known Disturbance to Archaeological Horizons

The known disturbance to archaeological horizons on the site is set out below, based on the cartographic evidence; utilities mapping; the Running Tunnels & Shafts Obstructions Report (Crossrail 2007a); geotechnical information, historic mapping; and the results of the Visual Site Appraisal.

- A Thames Water main runs through the south-western corner of the worksite. The depth of the service is unknown; however, it is likely to be within the c.2m of Made Ground identified at the site. It should also be noted that the plan indicates that a sight investigation is required by the utility owners to confirm the presence of the service.
- The utility plan also shows a number of services running along Garden Street and King Johns Street, but these are likely to be within the c.2m of Made Ground identified at the site.
- The site was occupied by back-to-back terraced housing for the majority of the 20th century. It has not been possible to obtain construction drawings, however the geotechnical data suggests that the construction and demolition of the houses had a minimal impact upon the site (Drawing Numbers P30103-C1M15-E00-D-50109 to 50114 – Appendix 9.1). The investigations did not determine whether any of the housing had cellars.
- A school was constructed along the northern site boundary to the west of Garden Street in the early 20th century (Drawing Number P30103-C1M15-E00-D-50109 – Appendix 9.1). Geotechnical investigations have shown Made Ground to a depth of 2.5m BGL containing fragments of brick and concrete, suggesting that the construction of the school could have partially or completely removed any archaeological deposits to this depth.
- Landscaping relating to the design of the park and all-weather sports ground. The extent of landscaping is unknown.
- The area suffered significant bomb damage during World War II, in particular on Stepney High Street where the impact of both a V1 and V2 rocket will have caused disturbance to any archaeological deposits at those locations.

5.5 Previous Archaeological Investigation at the Stepney Green shaft site

The archaeology at the Stepney Green shaft site has been subject to both previous desk-based and site-based investigation (Crossrail 2005a) during the preparation of the Crossrail Environmental Statement and supporting technical documents. It should be noted that the location of the shafts, basement and worksite have changed since this work was carried out. However, the previous work is still relevant to the Crossrail works being undertaken at Stepney Green.

The previous work included the preparation of the following drawings. These are included in Appendix 9.2 and provide a useful guide to the location of possible buried archaeological remains, however the location of the shafts and worksite have changed.

- archaeological cross sections of the site;
- general plans of the archaeology of the site; and
- a plan of archaeological levels.

In the preparation of the Crossrail ES, particularly in terms of the archaeological potential and mitigation strategy at the site, consultation took place in 2004 between Crossrail and English Heritage (EH). The outcome of these meetings is summarised below, the full meeting notes from two meetings that took place in February and July 2004 can be read in full in Appendix 9.2).

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Consultation meeting 24th February 2004

- EH/GLAAS stated that *preservation-by-record* (e.g. archaeological excavation) would be an acceptable mitigation of the impacts of the permanent works;
- EH/GLAAS stated that *preservation-in-situ* was preferable for the standing remains of the 1860s Congregational Church, but if necessary the brick built section could be *preserved-by-record*, allowing its demolition, while the stone-faced section should be kept *in-situ*. Supporting and protective measures would be required in either event;
- EH/GLAAS would be seeking *preservation-in-situ* wherever possible for below ground remains over the temporary worksite, subject to field evaluation, to inform the mitigation design;
- EH/GLAAS stated that extensive archaeological evaluation would be required to understand the presence, extent, nature and depth BGL of archaeological remains on site in order to inform appropriate mitigation;
- It was noted that archaeological remains could be present across the site, not just in the vicinity of Worcester House;
- EH/GLAAS wanted a commitment from Crossrail that archaeological works and subsequent mitigation would take place if Crossrail was approved, with an appropriate timescale in advance of construction;
- EH/GLAAS pointed to the positive benefit of ‘community excavations’ to help ameliorate the negative impact if works within Stepping Stones Farm;
- Protection measures, devised after evaluation could have a notable effect of the layout of the worksite and construction techniques.

Consultation meeting 13th July 2004

- Changes to the scheme design (movement of infrastructure with deep foundations to the western part of the site) – welcomed by EH/GLAAS but requested archaeological cross-sections showing archaeological levels and proposed works (see Appendix 8.3);
- EH/GLAAS indicated that test pits would be required to properly design protective works at the worksite east of Garden Street. Potentially there could be community involvement in excavations.

Further consultation will be required in light of the changes to the scheme design.

Furthermore, standing building recording of the 19th century Baptist Chapel/College and Congregational Church (XRC03) has also been carried out (Crossrail 2005a - Document Number: 1E0418-C1E00-00002). This is reproduced in Appendix 9.6.

5.6 Deposit Modelling

The tables below set out the depths of known deposits on the site, based on information from geotechnical boreholes and archaeological interventions in the vicinity. Please refer to the following drawings (Appendix 9.1 and 9.2) for the locations of boreholes, archaeological sites and for deposit summary sketches:

Geotechnical boreholes: P30103-C1M15-G00-D-5007 & 50017

Archaeological sites: P30103-C1M15-E00-D-50001

Deposit Model Drawing: P30103-C1M15-C00-D-50160

BH/Site No.	SG9	SG10	SG15R	SG12A	SG12	SG17	SG13	SG11R	SG16	SG19P	SHS79	WOR85
Superficial Deposits (inc. Made Ground, Alluvium and River Terrace Deposits where encountered)	109.57 to 105.17m ATD (4.40m in thickness)	109.39 to 105.29m ATD (4.10m in thickness)	109.55 to 103.95m ATD (5.60m in thickness)	110 to 104.5m ATD (5.5 m in thickness)	110.09 to 105.19m ATD (4.90m in thickness)	109.61 to 104.91m ATD (4.50m in thickness)	110.96 to 104.26m ATD (6.70m in thickness)	111.19 to 103.39m ATD (7.80m in thickness)	110.06 to 104.46m ATD (5.60m in thickness)	108.86 to 105.56m ATD (3.3m in thickness)	Ground level at 109.2m ATD. Natural brickearth truncated by quarrying at 108.10m ATD. 14th century and Post-medieval features cut into brickearth at 108.1m ATD to 107.3m ATD LBA/EIA activity at 108.1-108.3m ATD. Natural gravel at 108.1m ATD.	Ground level at 109.00m ATD. Remains of Worcester House at 106.95-107.65m ATD – although it is noted that these levels may be 1m too low. Natural gravel at 107.00m ATD
London Clay	105.17 to 79.47m ATD (25.70m in thickness)	105.39 to 79.79m ATD (25.6m in thickness)	103.95 to 79.35m ATD (24.60m in thickness)	104.5 to 85.5m ATD (end of borehole)	105.19 to 79.64m ATD (28.55m in thickness)	104.91 to 80.61m ATD (24.30m in thickness)	104.26 to 79.26m ATD (25m in thickness)	103.39 to 79.84m ATD (23.55m in thickness)	104.46 to 79.86m ATD (24.60m in thickness)	105.56 to 79.20m ATD (26.36m in thickness)	-	-
Harwich Formation	-	79.79 to 77.39m ATD (2.40m in thickness)	79.35 to 78.95m ATD (0.40m in thickness)	-	-	-	-	79.84 to 79.73 ATD (0.11m in thickness)	-	-	-	-
Lambeth Group	79.47 to 58.77m ATD (20.70m in thickness)	77.39 to 60.09m ATD (17.30m in thickness)	78.95 to >64.55m ATD	-	79.64 to 59.84m ATD (19.80m in thickness)	80.61 to 57.61m ATD (23m in thickness)	79.26 to 59.66m ATD (19.6m in thickness)	79.73 to 59.72m ATD (20.01m in thickness)	79.86m ATD to ? (end of borehole)	79.20 to 66.86m ATD (end of borehole)	-	-
Thanet Sands	58.77 to >55.97	60.09 to >58.34m ATD	-	-	59.84 to >58.64m ATD	57.61m to >53m ATD	59.66 to 48.48m ATD (11.18m in thickness)	59.72 to >52.80m ATD	-	-	-	-
Chalk	-	-	-	-	-	-	48.46 to >47.26m ATD	-	-	-	-	-

Table 2. Deposit model data for the Stepney Green site

5.7 Non-listed built heritage

Non-listed built heritage assessment and recording forms part of the archaeological mitigation strategy for Crossrail. The definition of non-listed built heritage adopted follows Information Paper D22 Archaeology and encompasses above ground historic features and structural elements of historical interest.

Two main groups are:

- Non-listed buildings proposed for demolition in conservation areas; and
- Historic street furniture and materials falling within a worksite and being temporarily or permanently impacted upon by the works.

The detailed scope for this element of works includes:

- Important non-listed buildings of historic interest proposed for demolition in conservation areas (as set out in Information paper D18, Listed Buildings and Conservation Areas);
- Important non-listed historic street furniture and materials;
- Other important non-listed buildings and structures of historic interest outside conservation areas (i.e. the standing walls at Stepney Green), locally listed station buildings and railway structures and any industrial and defence archaeology of significance.

The Crossrail Environmental Statement and supporting Specialist Technical Reports define the baseline built heritage resources (both statutorily protected and non-listed) across the route, the potential significant impacts, mitigation and any residual impacts after that mitigation is employed (Crossrail 2009).

An archaeological (non-listed built heritage) assessment has been carried out to determine the need for, and/or level of, mitigation works in advance of demolition. This assessment determined that no NLBH recording is required at the Stepney Green Shaft. Standing remains of the early 19th century Baptist Chapel [1] and mid-19th century Congregational Church [2&3] have been identified within the Stepney Green Shafts Area. These structures have been subject to a level II archaeological survey (Document Number IE0418-CIE00-00002 – Appendix 9.6), therefore no further recording works are necessary. However, if heavy machinery is to be used in the area, damage should be mitigated through appropriate hoarding. The particulars of this will be determined at the detailed design stage.

Street furniture surveys have also been carried out by the MDC3 Heritage Specialist to identify all elements of street furniture at the Stepney Green Shafts and identify which have historic significance in order to inform the scope for NLBH recording. The survey did not include Stepping Stones Farm, therefore further NLBH assessment is required at Stepping Stones farm when access is available. The results of the assessment are outlined in Table 3. Refer to Drawing Number P30103-C1M15-E00-D-50004 (Appendix 9.1) for the location of the NLBH features listed in the table below.

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Name [Figure Ref]	Image	Description	Significance	Impact
Historic sett surface on Garden Street [4]		<p>Granite sett surface running the full length of Garden Street.</p> <p>Contemporary with the laying out of the street in the late 19th century. Almost comprehensive survival of rectangular setts laid in rows. Some ground disturbance caused by modern services.</p>	<p>Not located within a conservation area, but makes a positive contribution to the historic character of the area.</p>	<p>Removal during utilities diversions. The road will also be damaged by heavy construction traffic.</p>

Table 3. Historic street furniture at Stepney Green

6 Discussion

6.1 Summary and Interpretation of Results

Natural

The ground level rises gradually from north to south (109.58 –110.27m ATD). There is a significant increase in the south-east corner, in the vicinity of the former congregational church, where the level rises to 111.34m ATD. This may be as a result of raising the ground level rather than removing the foundations.

Information from geotechnical boreholes (SG9, 10, 15R, 12A, 12, 16, 17, 19P, 13, 11A) within the site and close vicinity demonstrated that Made Ground was present across the whole site at an average depth of 2m. SG10 showed an increase of 0.5m in the depth of the Made Ground, which may result from the construction of Mowlem House, a former secondary school. The Made Ground was overlying occasional areas of alluvial deposition and a layer of River Terrace Deposits, suggesting that the natural geology of the area had not been significantly truncated by human activity. The surface level of the River Terrace Deposits across the site are fairly uniform (e.g. SG16: 106.61m ATD; SG12: 107.89m ATD; and SG11R: 109.29m ATD) with a slope down to the east, although the difference in levels could also represent differing levels of truncation.

Brickearth deposits encountered in BG16 probably represents the lensing out of the southern edge of the brickearth sheet that lies approximately 65m to the north.

Furthermore, Stepney Green park was landscaped after clearance of the terraced buildings for the construction of the park and all weather sports ground.

The present buildings

There are no buildings currently occupying the site, although ruins of former buildings are still upstanding in the north and south-east of the site. The area to the west of Garden Street is currently in use as an all weather sports ground. The extent to which landscaping for the sports ground truncated archaeological remains is unknown. Some small farm related structures are also present at Stepping Stones Farm, although these are unlikely to have caused any significant truncation of archaeological deposits.

Earlier buildings

Historic maps show that the extent of development on the site until the early 20th century was in the form of individual buildings running along the northern boundary and along both sides of Garden Street. The site had also been used for small scale kitchen gardens. The 1914 map shows that back-to-back terraced housing occupied the majority of the site and continued to do so until at least the late 1960's. The extent and location of services running to these former houses or whether any of the buildings had cellars is unknown. The area suffered significant bomb damage during World War II resulting in the destruction of a number of the terraced houses on Garden Street and in the wider area. Geotechnical data indicates that the depth of Made Ground is relatively uniform across the site it is not extensive enough to isolate individual instances of truncation that may be associated with basement structures. An early 19th century Sunday school was located immediately north-west of the Congregational Church.

The remains of earlier buildings on site are still upstanding include the entrance to a c.1811 Baptist Chapel (or Academy), with associated gate piers, at the north-eastern corner of Garden Street and the northern wall of the 1862-3 Congregational Church south of King John Street. An arched doorway attached to the church wall and a gate pier formed parts of an open passageway adjacent to the church. Boreholes (SG11R) indicate that foundations from the church survive beneath the raised platform south of the standing remains (Crossrail 2005).

Potential archaeological deposits

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The presence of archaeological deposits relating to Worcester House at a depth of 1.75m BGL, within the Made Ground, coupled with the presence of River Terrace Deposits below the Made Ground indicate the potential for the presence of archaeological remains, particularly within the eastern compound. It is not possible to predict the depth at which these remains may be encountered, as the continuity of the make-up of the Made Ground and the presence of known archaeological deposits within it suggest that it is possible for other archaeological remains to be present at any depth below ground level.

Archaeological interventions in the site and the vicinity (WOR85 & SHS79) have encountered much evidence for Post-medieval urbanisation around the site. There is a high potential for evidence of 16th to 19th century buildings, in particular relating to Worcester House and associated gardens, yards and related structures including the non-conformist chapel, the Baptist Chapel; the Congregation Church; the early 19th century Sunday school; and other Post-medieval occupation features surviving, particularly if there are no modern cellars. Consultation with EH/GLAAS in 2004 highlighted that the archaeological potential exists across the entire site, not just in the vicinity of Worcester House. Borehole data from SG16 (located in the southern part of the Stepney Green site, east of the former Congregational Church); and SG19P (located on the eastern side of King John Street) demonstrated post-medieval features of 17th to 18th century date cut into the terrace gravels, which may be related to the Tudor Worcester house that is located in the immediate vicinity (Crossrail 2008g).

Previous archaeological work in the vicinity also indicates that there is a moderate potential for archaeological remains relating to the Prehistoric and Roman periods. Utilities diversions along Stepney High Street have the potential to disturb burials relating to the St Dunstan Churchyard (BG 218).

Impact of Proposals – Enabling Works

- Levelling and other processes relating to the construction of the worksite (e.g. foundations for accommodation, batch plant) may impact upper levels of archaeological deposits relating to Worcester House; the Baptist Chapel; and the Congregational Church.
- Surface ruins of the Baptist Church and Congregational Church will not be affected as they are to be protected by hoardings (Crossrail 2008a).
- Dewatering, involving the sinking of boreholes to the east of Garden Street will partially or completely remove archaeological deposits at those locations relating to Worcester House; the Baptist Chapel; and the Congregational Church to the east of Garden Street, however this is likely to be very minimal and follow mitigation.
- Utilities diversions – may partially or completely remove archaeological remains along its route, particularly along Stepney High Street, where burials relating to the St Dunstans churchyard may be present.
- The movement of heavy machinery within the worksite may affect buried remains relating to Worcester House; the Baptist Chapel; and the Congregational Church to the east of Garden Street.

Impact of Proposals – Main Works

- Construction of the basement (sheet) piles to slab level will completely remove archaeological remains at those locations. Ground anchors will be confined to the London Clay, and therefore, will not affect buried archaeological deposits.
- Excavation of the basement (to contain the shafts) from the surface to c.102.45m ATD (within the London Clay) will completely remove all archaeological deposits within its footprint.

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6.2 Predicted Impacts to the Archaeological Resource

The table below summarises the construction impacts discussed above.

Scheme Impact	Maximum Depth of Impact	Impact to Archaeology		Predicted Depth of Archaeological Remains
		Enabling Works	Main Works	
<p>Utilities Diversions at Stepney High Street; Stepney Way; Stepney Green; and Ben Jonson Road.</p> <p>Utilities Diversions at Garden Street; King John Street; Stepping Stones Farm; and Stepney Green Park.</p>	c. 0.5 to 2m	Localised impact resulting in partial or complete removal of archaeological remains.		<p>c.1.2m deep.</p> <p>Archaeological remains could exist at any depth within the Made Ground.</p>
Worksite establishment	Tbc	Ground reduction and foundations within the compound for accommodation (c. 0.4-0.8m deep), and batch plant (c.0.5-1.0m deep) could impact upon archaeological remains, specifically the remains of the congregational church, Baptist chapel, Meeting House, Sunday school and Worcester House.		<p>The predicted depth of the remains of Worcester house is 1.75m bgl.</p> <p>Borehole SG11R encountered possible foundations from the Congregational Church at c.1.2m deep.</p> <p>Archaeological remains could exist at any depth within the Made Ground.</p>
Dewatering	tbc	The dewatering system (scope and locations tbc) could impact upon archaeological remains, primarily those of the congregational church, Baptist chapel, Meeting House, Sunday school and Worcester House.		<p>c.1.2m deep.</p> <p>Archaeological remains could exist at any depth within the Made Ground.</p>
Construction of the basement piles to slab level			The piles will completely remove any archaeological remains at each pile location.	Archaeological remains could exist at any depth within the Made Ground.
Excavation of the basement (to contain the shafts) from the surface to c.102.45m ATD (within the London Clay) will completely remove all archaeological deposits within its footprint.	30m bgl		Excavation of the basement will completely remove archaeological remains within its footprint	<p>The predicted depth of the remains of Worcester house is 1.75m bgl.</p> <p>Congregation Church remains at c. 1.2m deep.</p> <p>Archaeological remains could exist at any depth within the Made Ground.</p>

Table 4. Summary of construction impacts

7 Recommendations

7.1 Proposed Evaluation Strategy

It is proposed that an archaeological field evaluation is carried out across the whole site in order to determine the nature, extent and survival any archaeological remains and thereby inform the mitigation design. Further descriptions of archaeological evaluation and mitigation measures can be found in the Crossrail Archaeology Generic Written Scheme of Investigation, Document Number 14022008-44ES-P2Z1.

It is recommended that archaeological field evaluation, prior to the Enabling Works, is carried out across the site in order to determine the nature, extent and survival of archaeological remains and thereby inform the mitigation design.

Full details of the evaluation methodology are described in the Stepney Green shaft Site-Specific WSI, Document Number CR-SD-CT1-EN-SY-00002.

7.2 Proposed Mitigation Strategy

The results of the archaeological evaluation will inform the mitigation design, which is likely to comprise a combination of both *preservation-in-situ* and *preservation-by-record* (e.g. archaeological excavation and/or watching brief). These mitigation measures are described in the Crossrail Archaeology Generic Written Scheme of Investigation, Document Number 14022008-44ES-P2Z1.

Advanced field evaluation in the eastern worksite area (to the east of Garden Street) will determine the depth and extent of the buried remains (relating to Worcester House) that require protective measures to ensure *preservation-in-situ*. Protective measures will also take compressive effects into account and construction activities that take place in that area should be the least demanding in terms of below ground impact.

Archaeological mitigation required at the Enabling Works stage in the eastern worksite shall also include:

- Targeted archaeological watching brief monitoring ground reduction.
- Targeted archaeological watching brief monitoring the excavations for the footings for plant, accommodation and dewatering systems.
- General archaeological watching brief at the installation of protective measures for Worcester House.
- General archaeological watching brief at the establishment of protective measures at the Baptist Chapel and the Congregational Church. These upstanding remains will be protected by propping and hoardings to ensure *preservation-in-situ*.

Further site-specific mitigation measures required at the Enabling Works stage at Stepney Green will comprise:

- General watching brief on utilities diversions at Stepney High Street; Stepney Way; Stepney Green; and Ben Jonson Road to *preserve-by-record* archaeological remains encountered during utilities diversions.
- Targeted watching brief on utilities diversions at Garden Street; King John Street; through Stepping Stones Farm; and through Stepney Green Park.

Preservation-by-record (if required) to the west of Garden Street could include archaeological excavation and/or watching brief. Excavation (if required) should be a continuation of the evaluation phase.

Main Works

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

- A targeted archaeological watching brief may be required during the removal of the protective measures in the eastern worksite area.

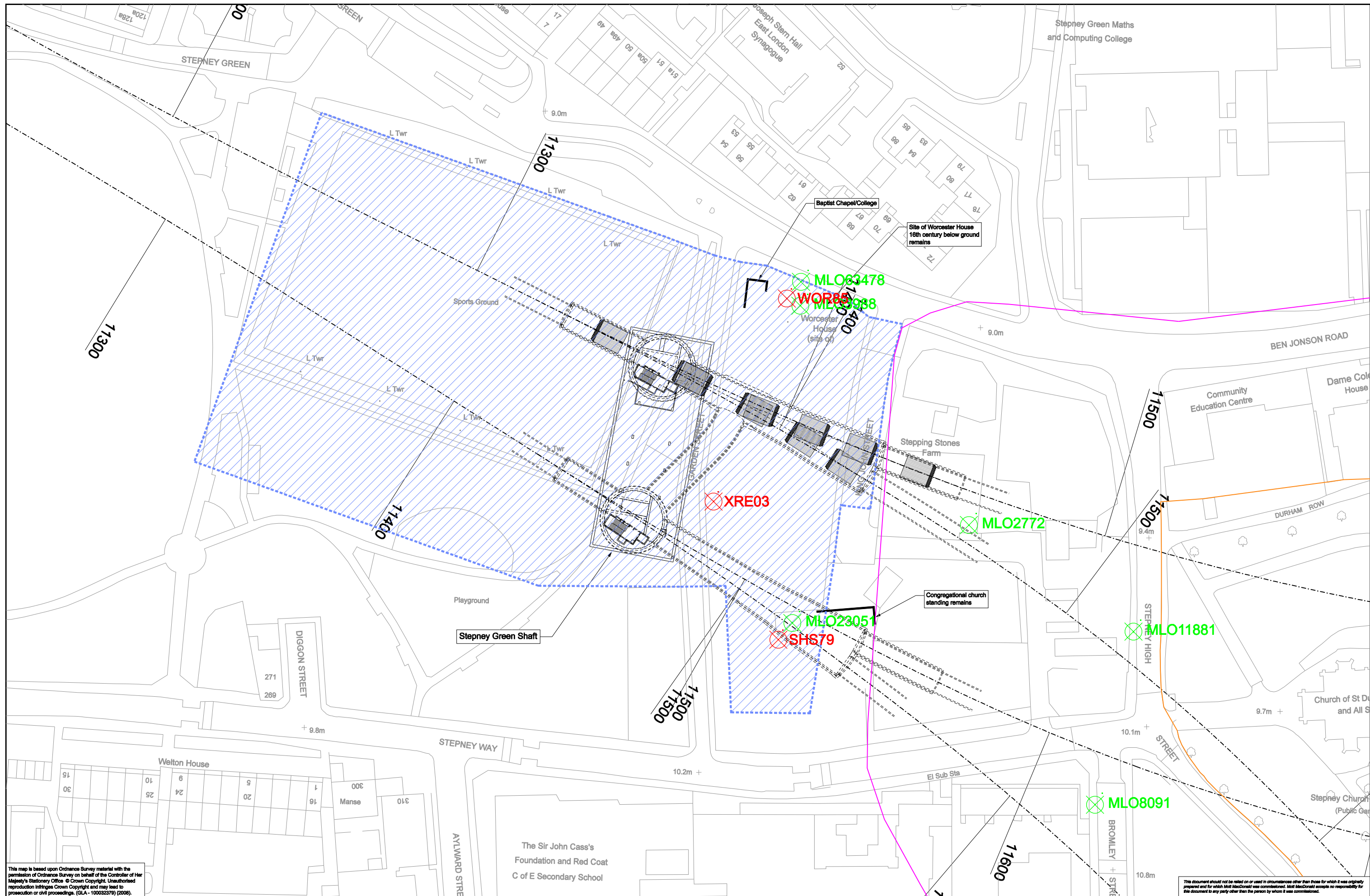
8 References

- Crossrail. 2005. Crossrail, Assessment of Archaeological Impacts, Technical Report. Part 2 of 6, Central Section: Westbourne Park to Stratford and Isle of Dogs. Document Number 1E0318-C1E00-00001. February 2005.
- Crossrail. 2005a. Structures at King John Street, Stepney Green, London E1 Architectural and Historical Appraisal. Document Number 1E0418-C1E00-00002.
- Crossrail, 2006b. Archaeology Programming Assessment. Document Number 1E0318-G0E00-00006 (Rev B)
- Crossrail, 2007a Geotechnical Sectional Interpretative report 3: Liverpool Street to Pudding Mill Lane and Isle of Dogs, Volume 1: Text. Document Number 1D0101-C1G00-00507
- Crossrail. 2007b. Crossrail MDC2, 3, & 4 Archaeology, Site Summaries Not Available on the LAARC Website.
- Crossrail 2007c. Scheme Design Submission Planning Environmental and Consents Report Running Tunnels and Shafts. Document Number CR-SD-ENV-EN-RT-00005.
- Crossrail. 2008a. Civil, Structural & Tunnel Engineering Report, MDC3 RUNNING TUNNELS & SHAFTS Volume 3 of 7. Document Number CR-SD-CT1-CE-RT-00008.
- Crossrail. 2008b. Crossrail, MDC3 Archaeology, Updated Baseline Assessment. Document Number 20032008-87MB-YYK5.
- Crossrail, 2008c. Archaeology Written Scheme of Investigation. Document Number CR-SD-CT1-EN-SY-00002.
- Crossrail. 2008d. Procedure for Detailed Desk Based Assessment. Document Number 23042008-96BA-OAKW.
- Crossrail. 2008e. Archaeology Generic Written Scheme of Investigation. Document Number 14022008-44ES-P2Z1
- Crossrail. 2008f. Procedure for non-listed built heritage recording. Document number 23042008-JGEN-LNUV
- Crossrail. 2008g. Archaeological Monitoring of Ground Investigations, Borehole Package 12.
- Falcini, P. 1985. Worcester House Archive Report. (Held at the LAARC archive)
- Museum of London. London Archaeological Archive and Research Centre (LAARC) Website. <http://www.museumoflondon.org.uk/laarc/>

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

9 Appendices**9.1 Plans and Illustrations****Drawing Index**

Title	Drawing Number
Archaeological Baseline Resource	P30103-C1M15-E00-D-50001
Stepney Green Shaft Archaeology Areas for evaluation	P30103-C1M15-E00-D-50003
Non-listed Built Heritage Location Plan	P30103-C1M15-E00-D-50004
Stepney Green Shaft Historical Mapping 1615 – Stepney Land holdings	P30103-C1M15-E00-D-50101
Stepney Green Shaft Historical Mapping 1703 – Gascoyne's map	P30103-C1M15-E00-D-50102
Stepney Green Shaft Historical Mapping 1746 – John Rocque's map of London	P30103-C1M15-E00-D-50103
Stepney Green Shaft Historical Mapping 1799 – Richard Horwood's map of London, Westminster and Southwark (East)	P30103-C1M15-E00-D-50104
Stepney Green Shaft Historical Mapping 1799 – Richard Horwood's map of London, Westminster and Southwark (West)	P30103-C1M15-E00-D-50105
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Stepney Green Shaft Historical Mapping 1824-26 – Greenwood's map of London	P30103-C1M15-E00-D-50108
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Stepney Green Shaft Historical Mapping 1981 OS	P30103-C1M15-E00-D-50115
Stepney Green Shaft, Potential Survival of Archaeological Deposits	P30103-C1M15-C00-D-50160
Stepney Green Eastbound Alignment Geological Section	P30103-C1M15-G00-D-50007
Stepney Green Westbound Alignment Geological Section	P30103-C1M15-G00-D-50017



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- MLO21941 Greater London Sites and Monuments Record
- ATL89 Site Codes
- Archaeological Priority Zone
- BG205 Burial Ground
- L036 Scheduled Ancient Monuments
- Registered Parks and Gardens
- Crossrail Worksite

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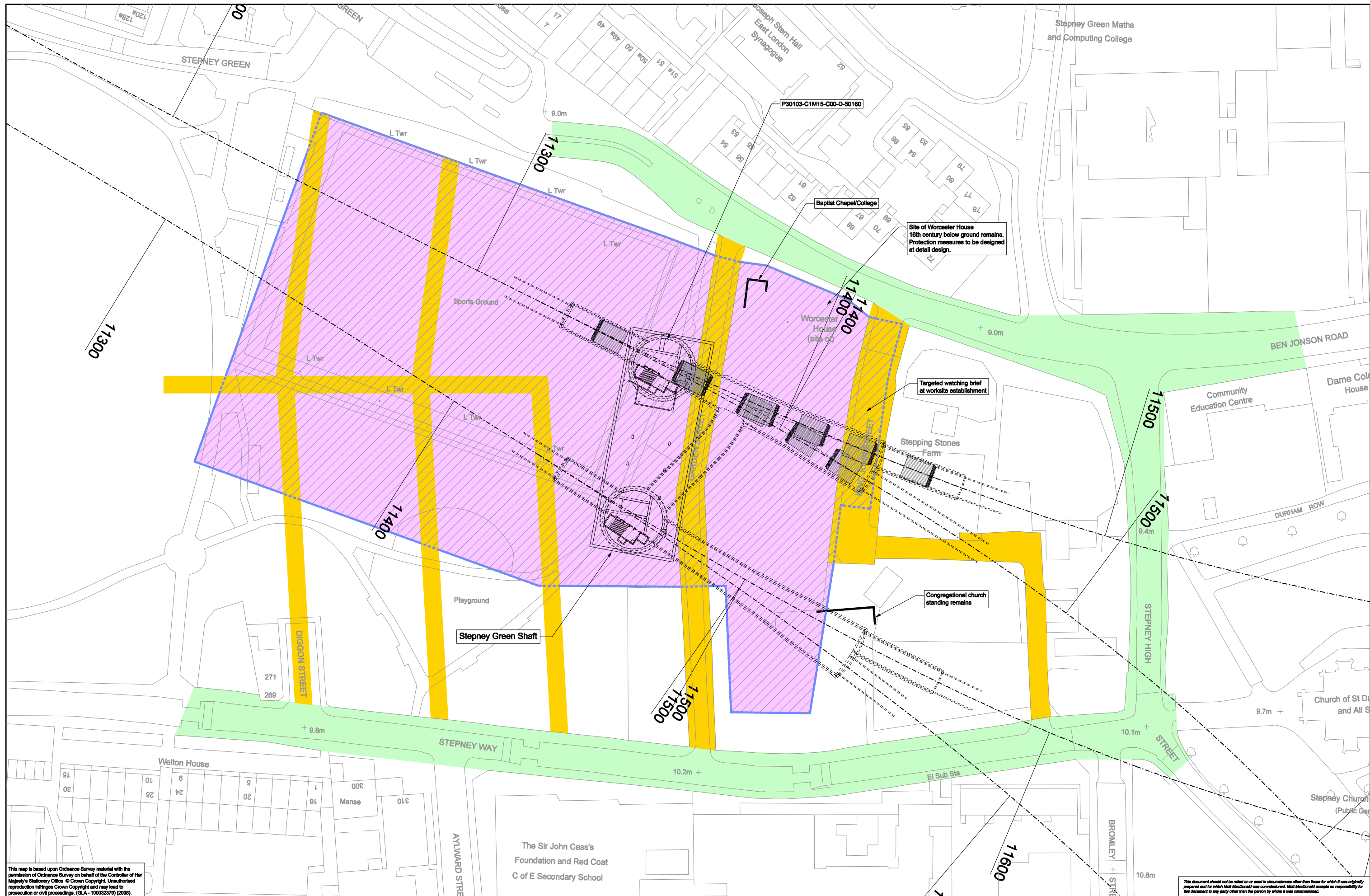
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TITLE:
**STEPNEY GREEN SHAFT
 ARCHAEOLOGICAL BASE LINE**

SCALE: 1:500 @ A1
 DRAWING AND CAD FILE No: P30103-C1M15-E00-D-50001
 REV: A02

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- Crossrail Worksite
- Proposed area of archaeological trial trench evaluation
- General watching brief at utilities diversions
- Targeted watching brief at utilities diversions

Scale 1:500

North Arrow

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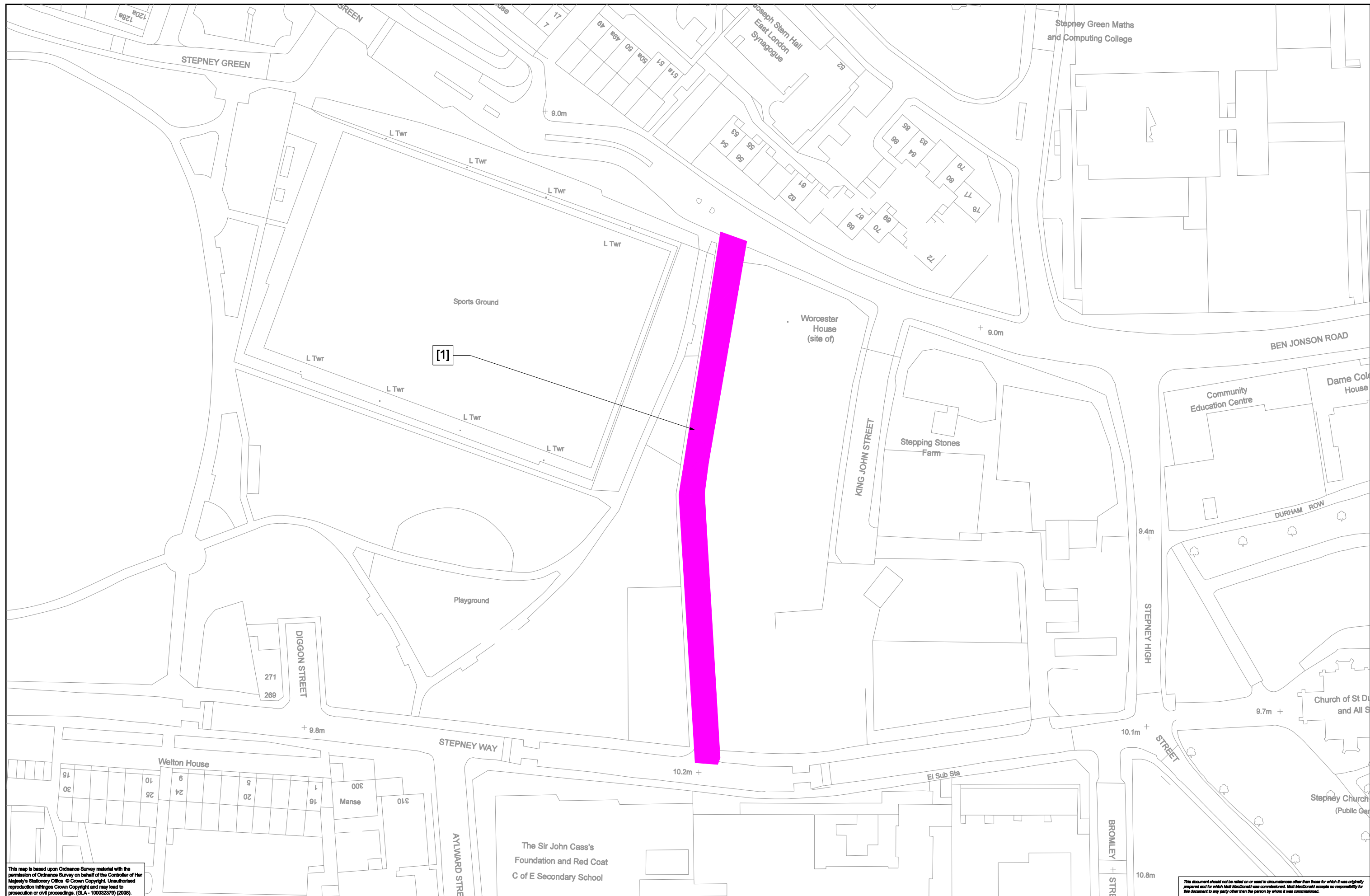
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 AREAS FOR EVALUATION**

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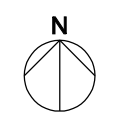
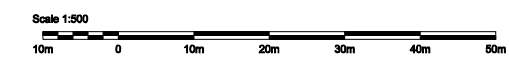
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 Historic street furniture

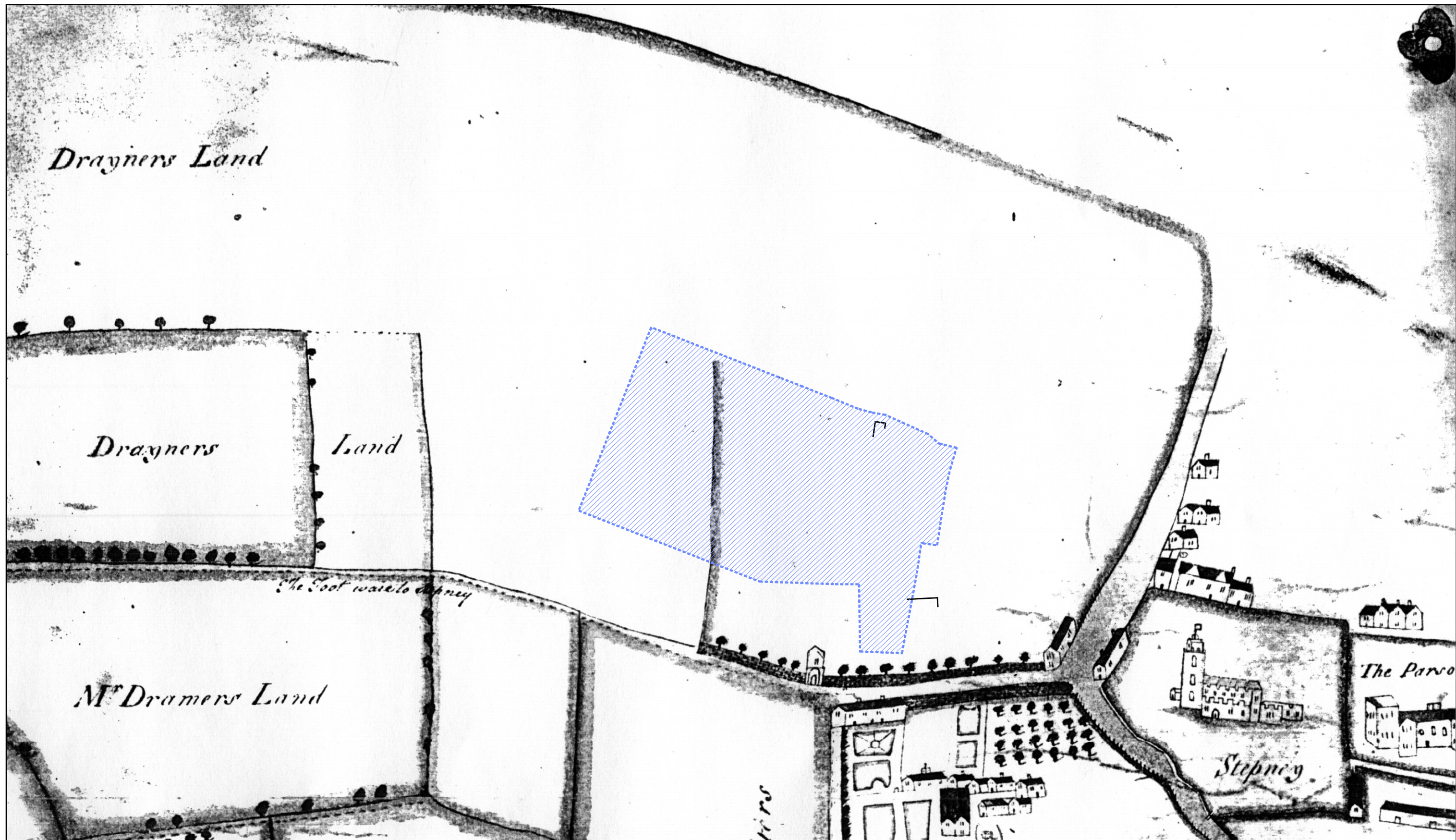


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1. Confirmation of all survey data must be obtained from the Crossrail survey team.
 2. Coordinates to the London Survey Grid, heights to the London height datum which is 100 metres below Ordnance Datum Newlyn. See Crossrail standard CR-STD-010.


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NON-LISTED BUILT HERITAGE
LOCATION PLAN
 SCALE: 1:500 @ A1
 DRAWING AND CAD FILE No: P30103-C1M15-E00-D-50004
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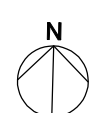


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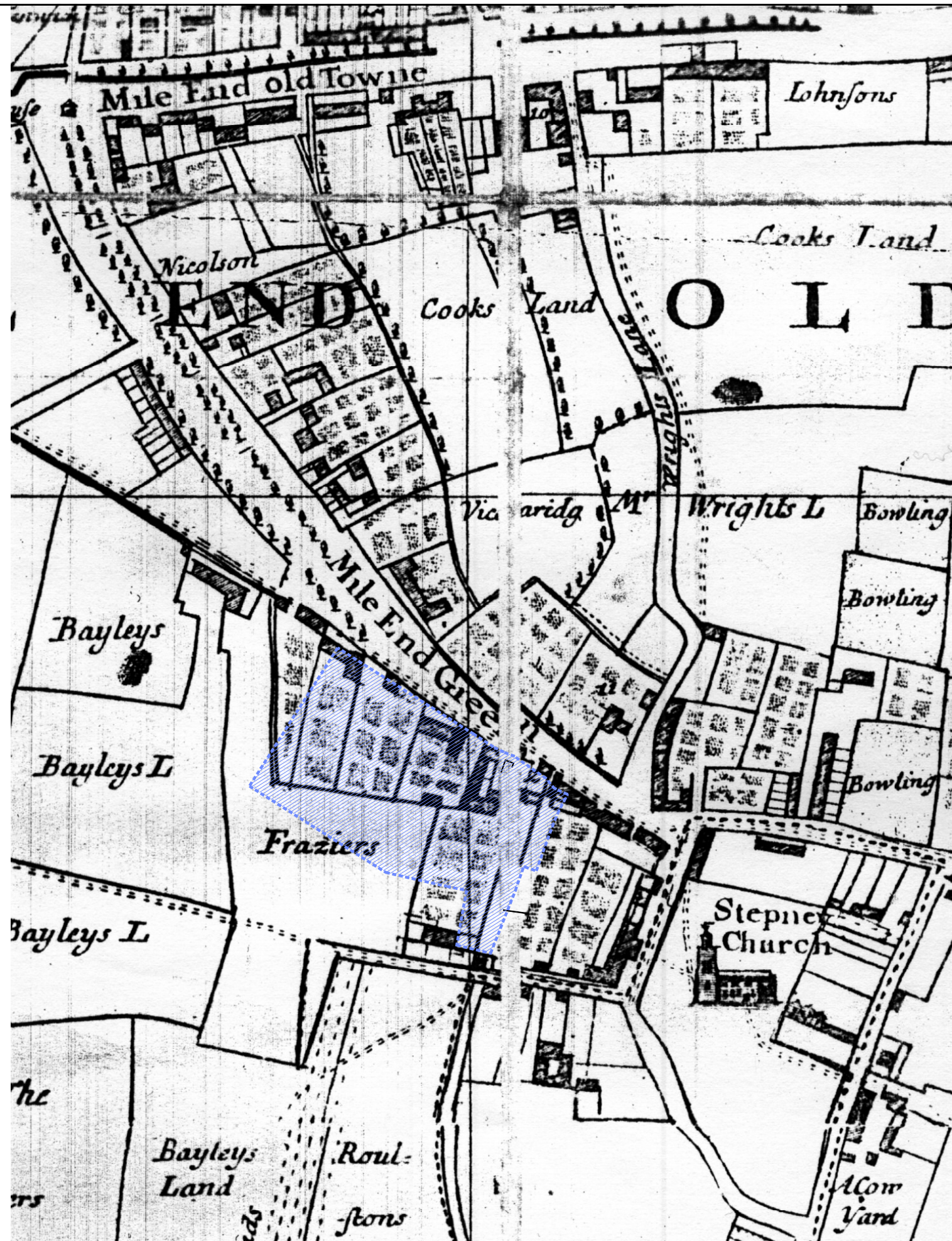

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
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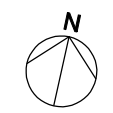
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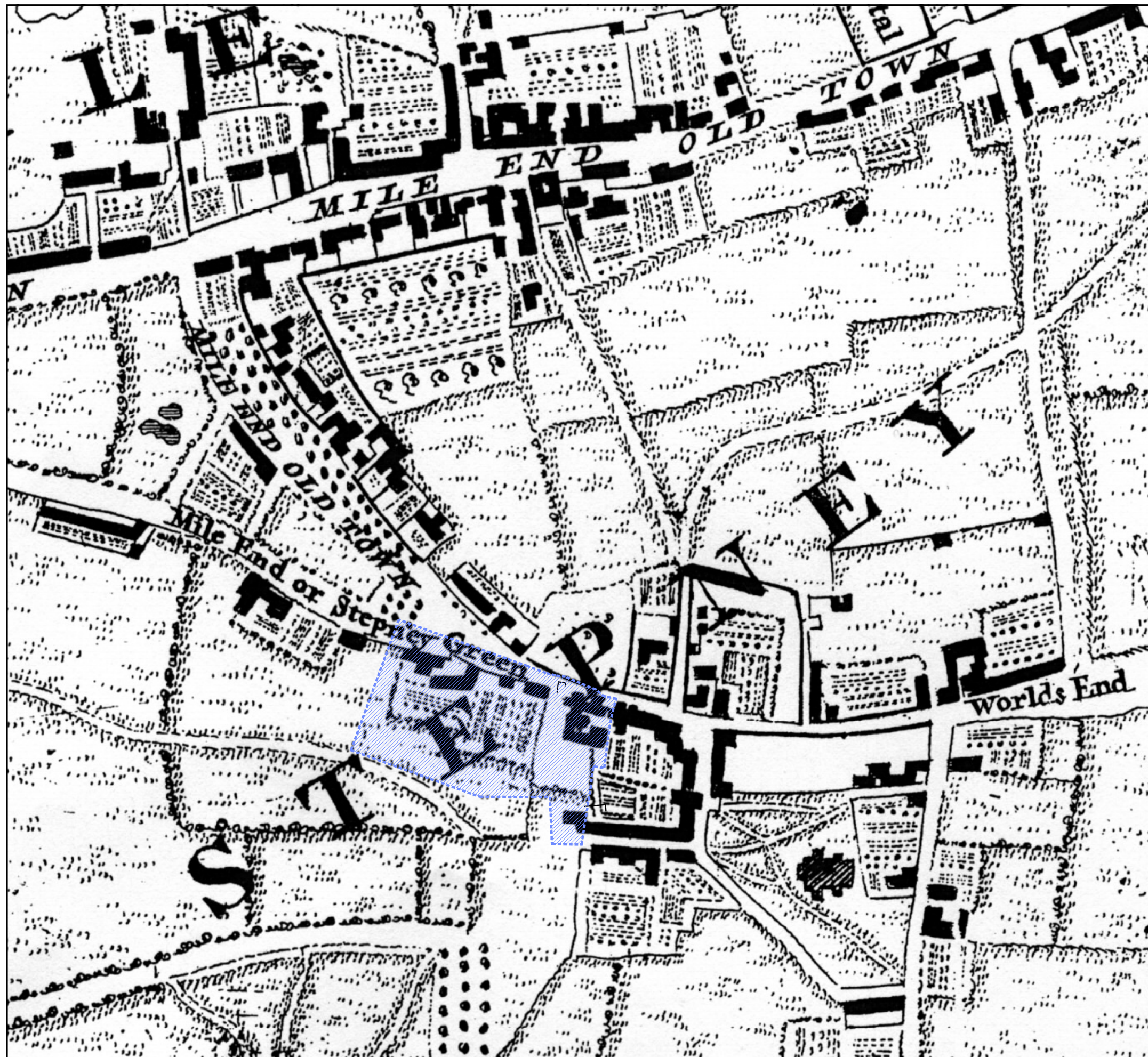
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
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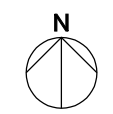
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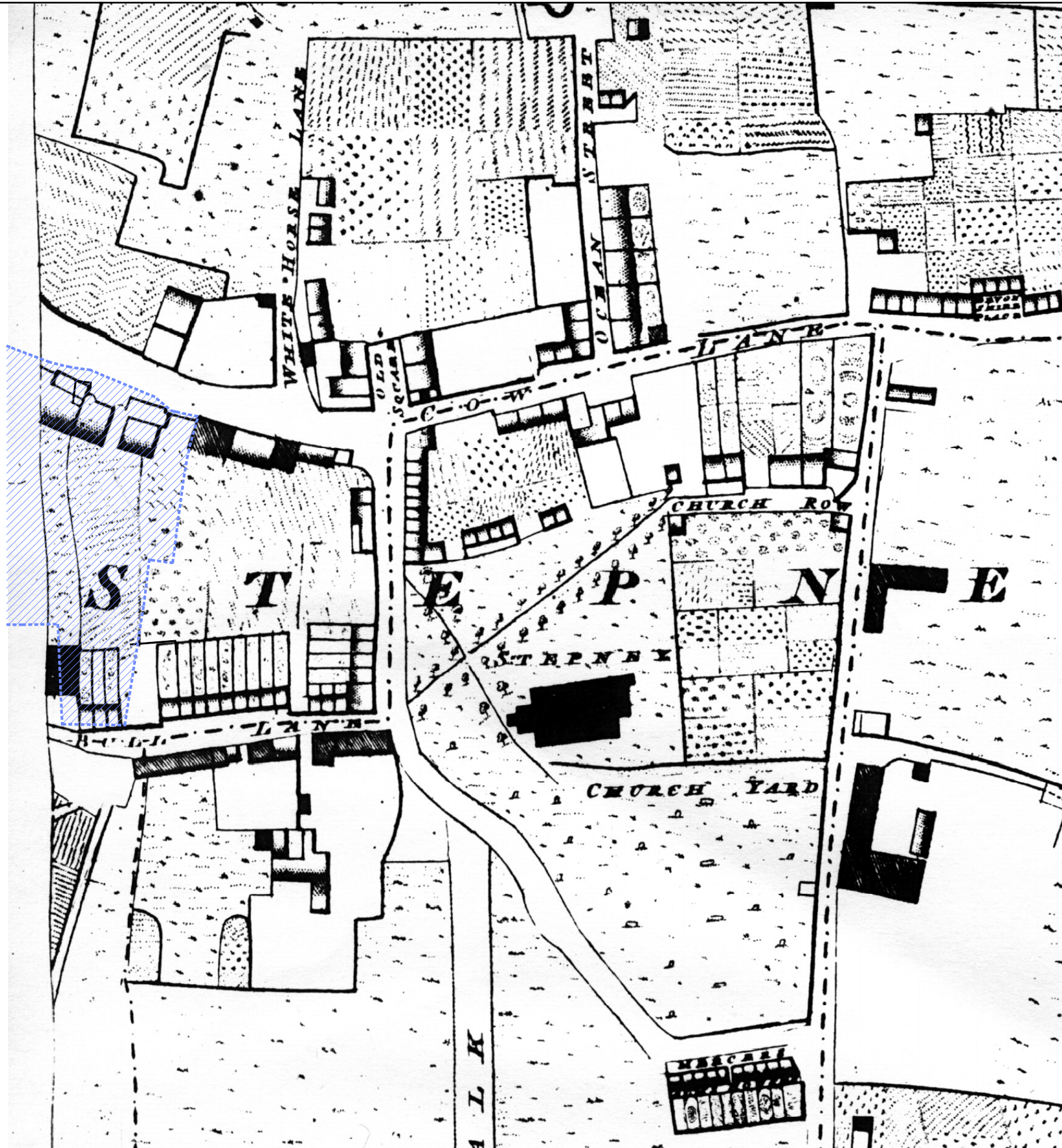
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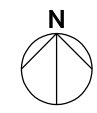
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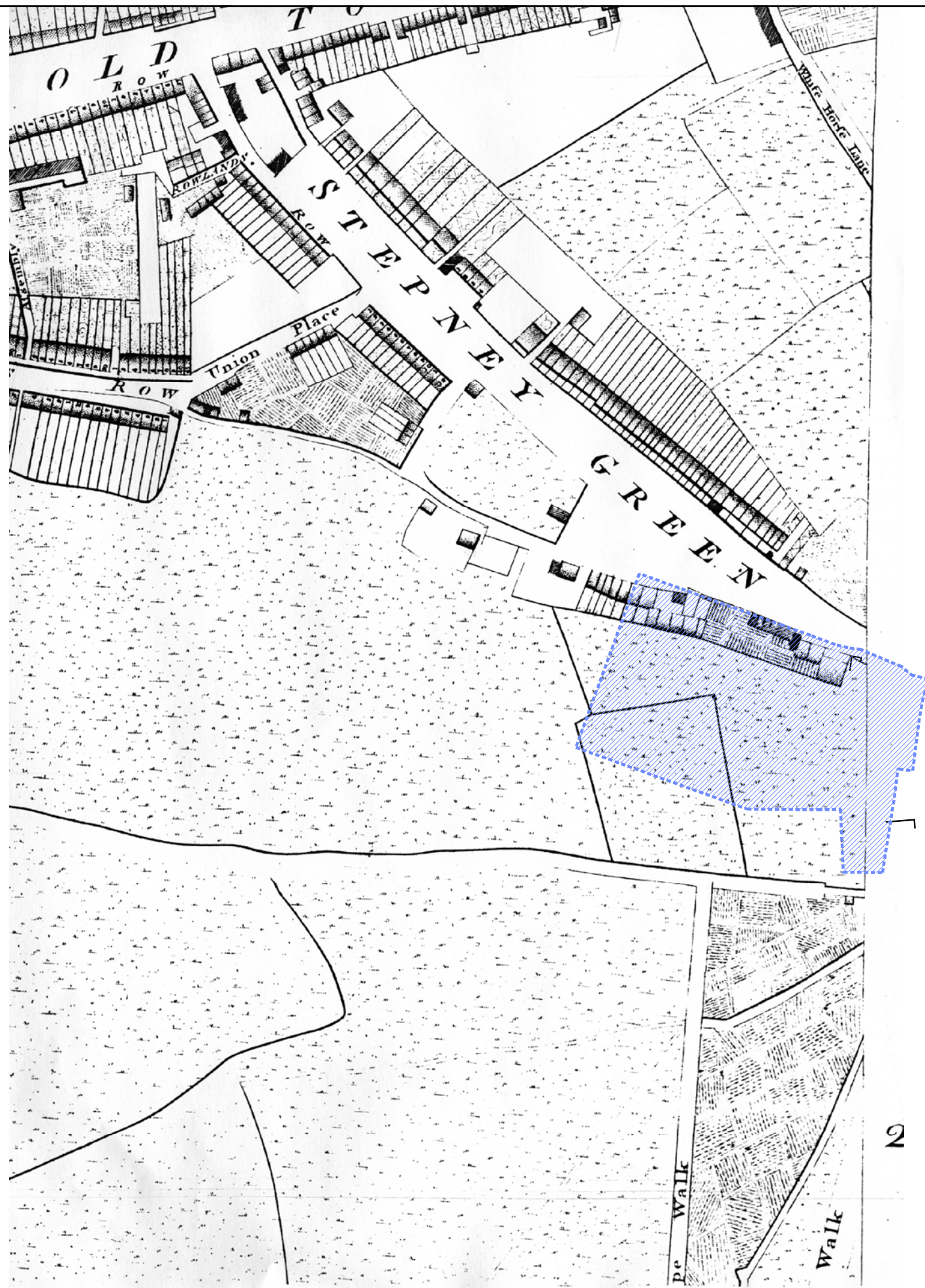
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
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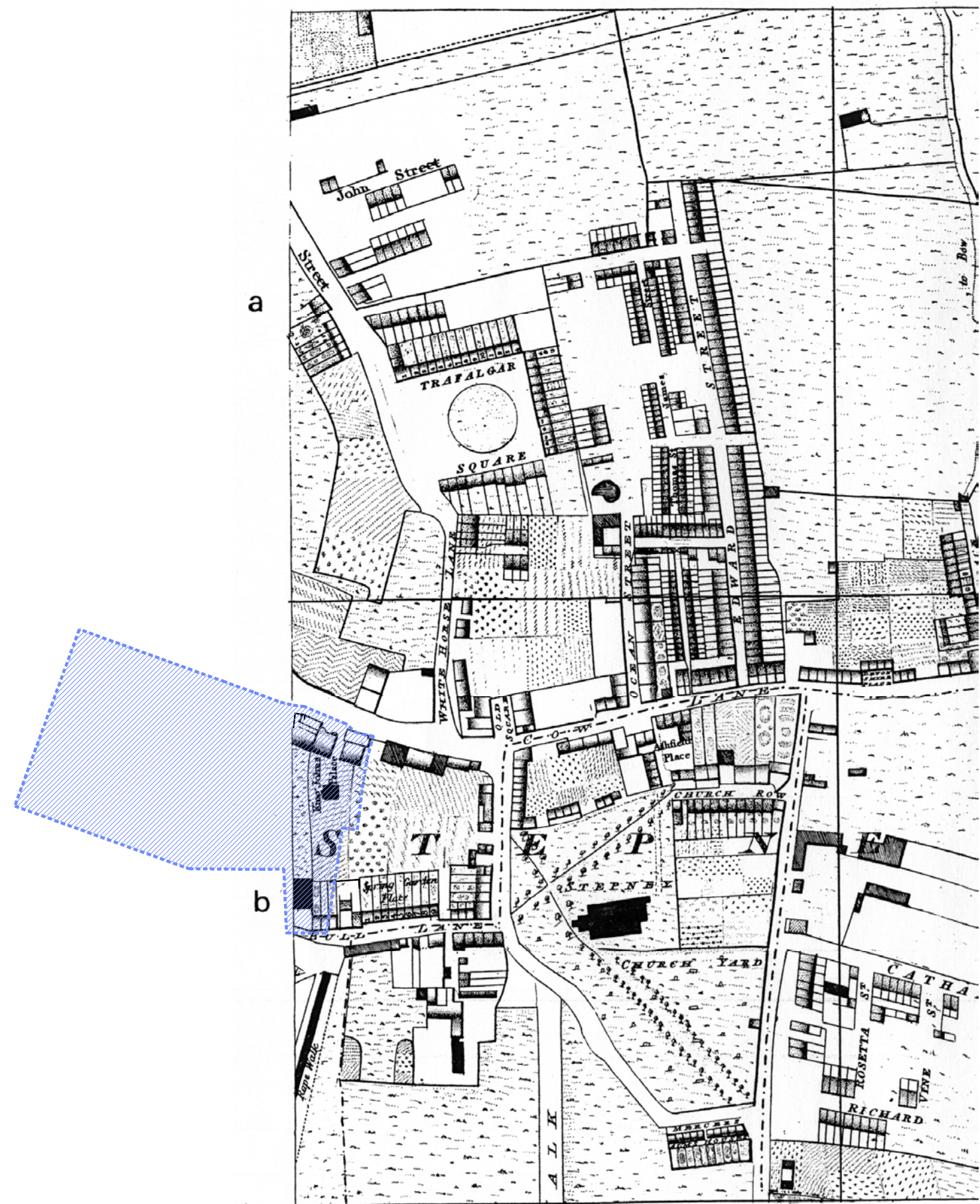
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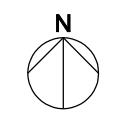
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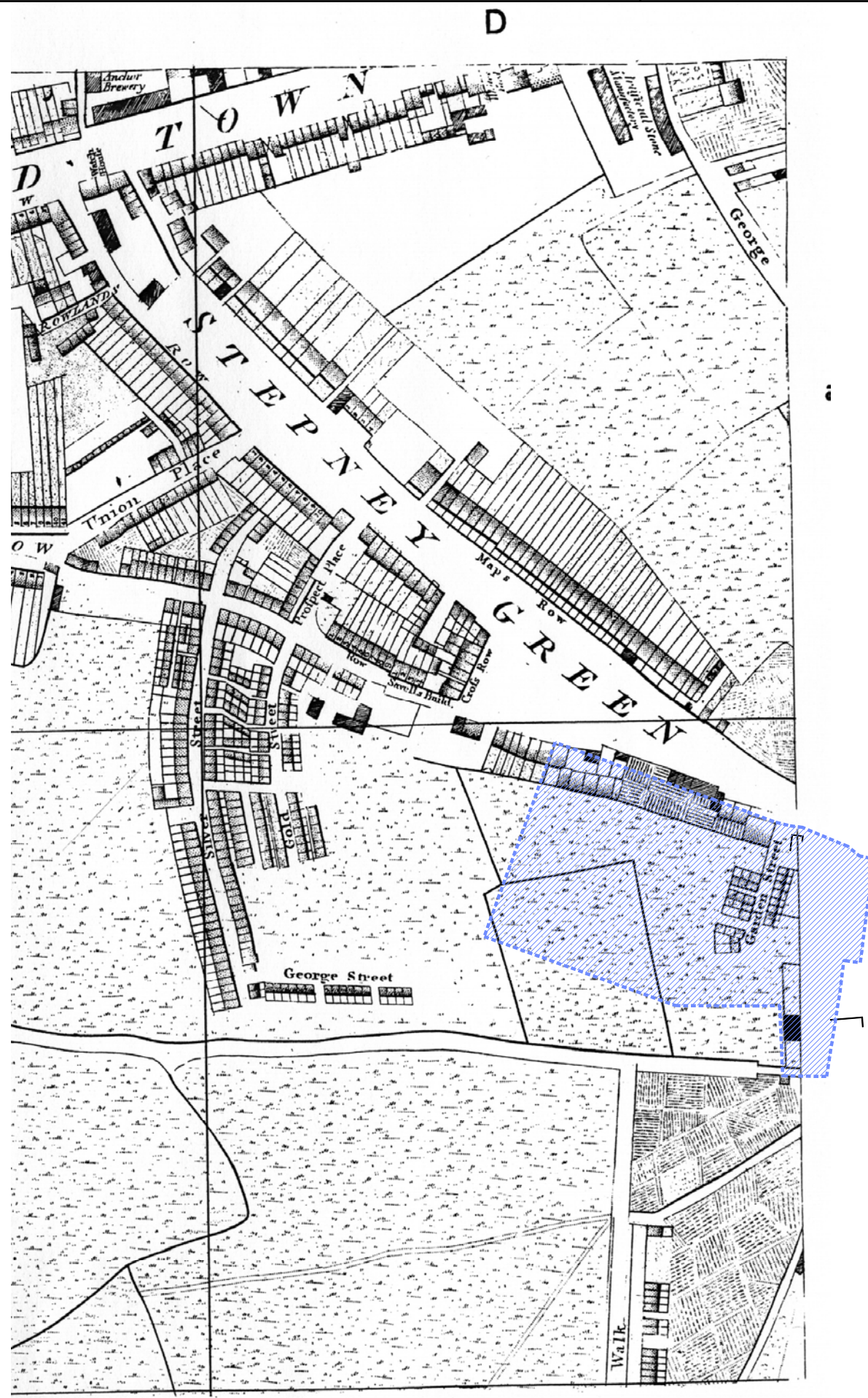
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
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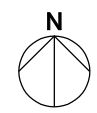


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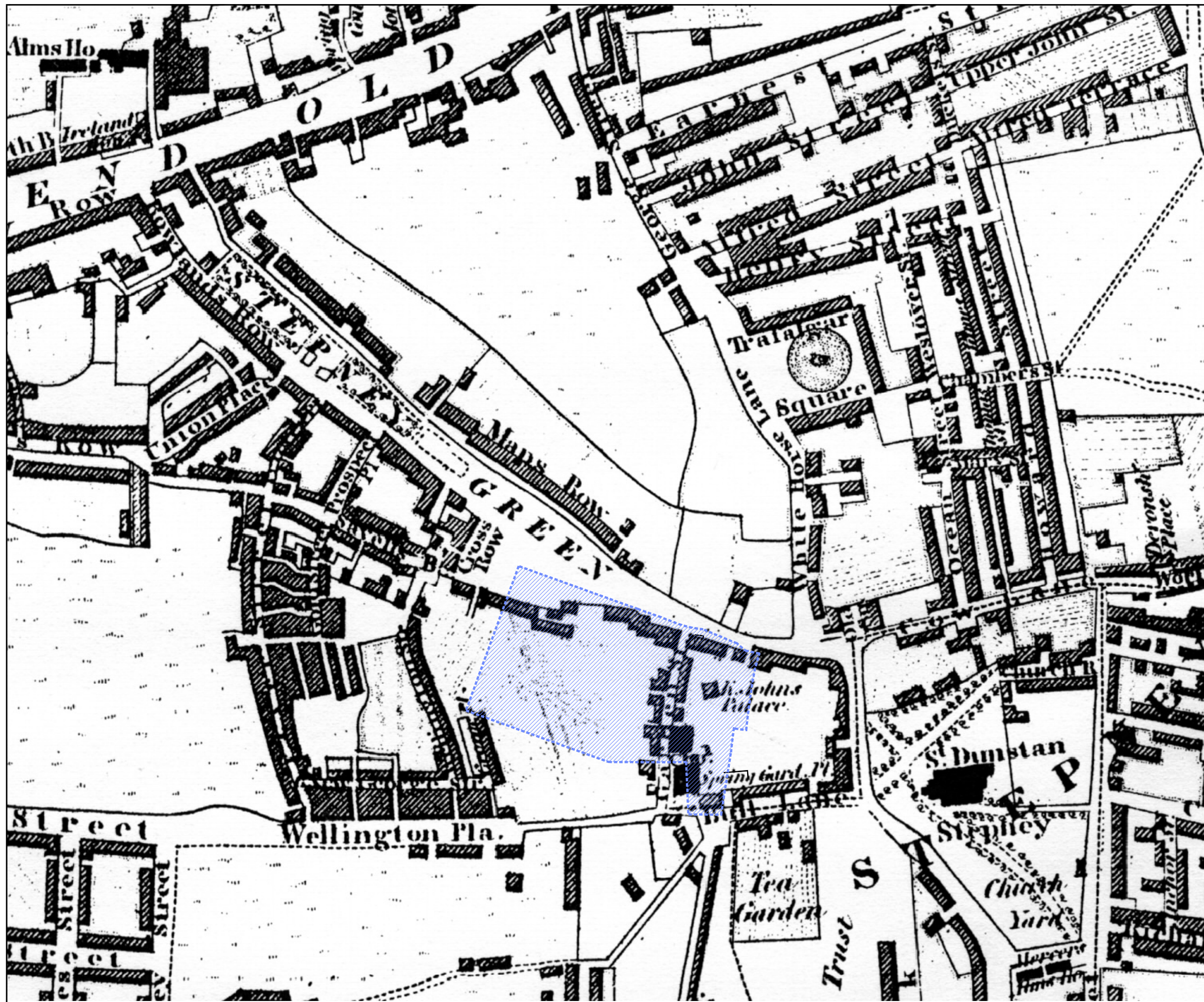

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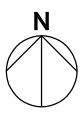


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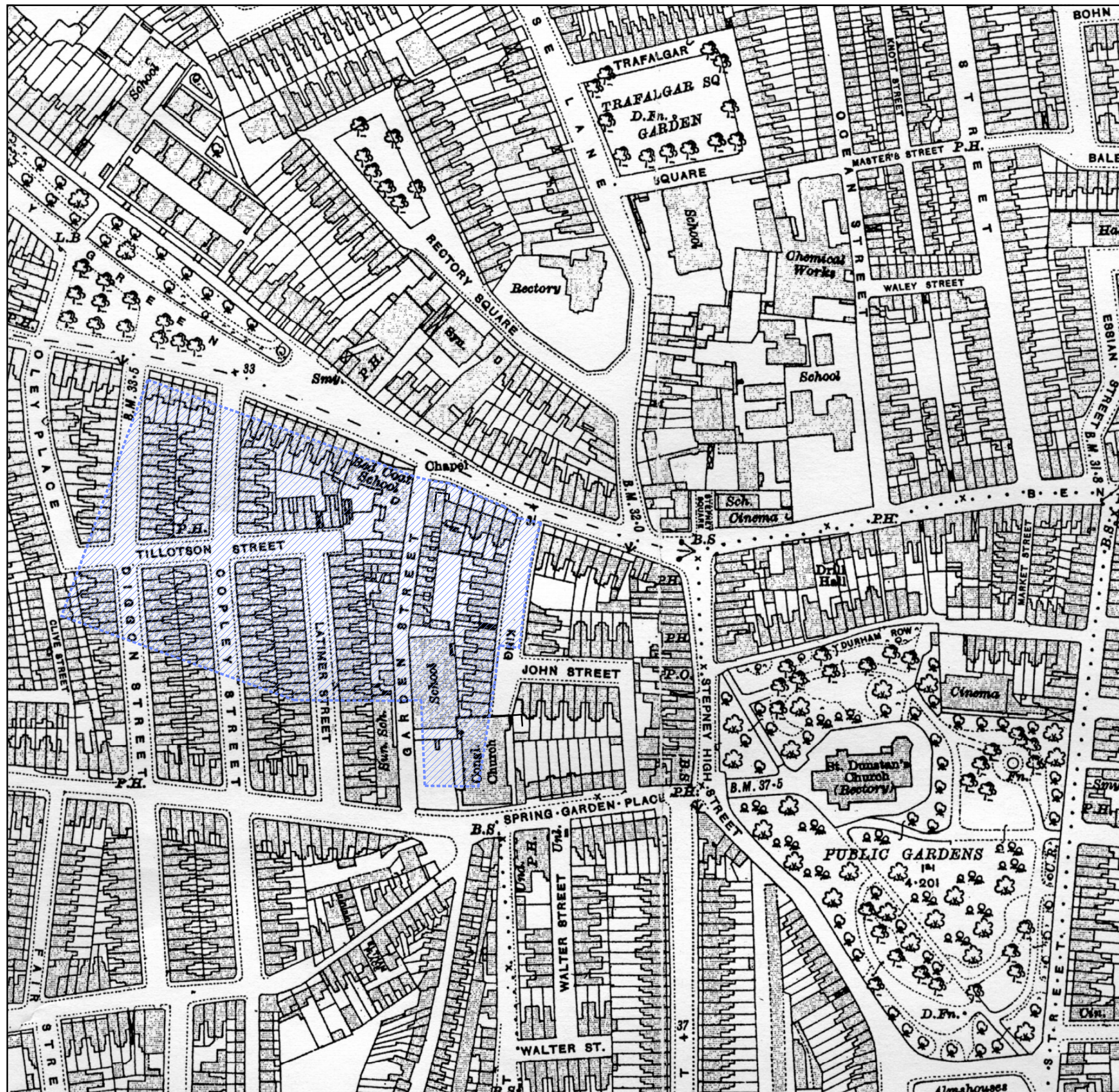
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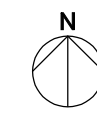
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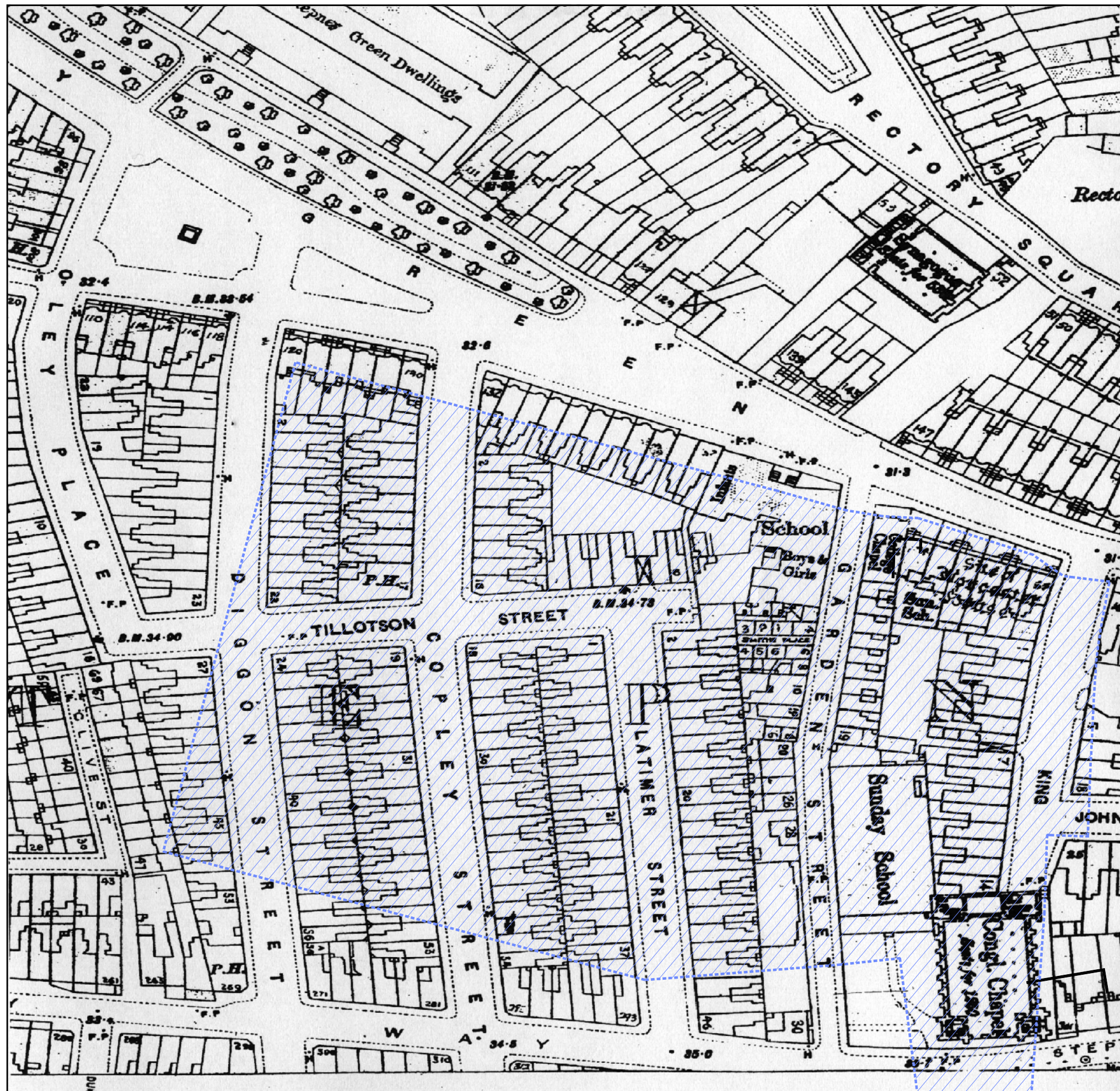
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
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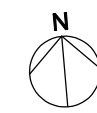
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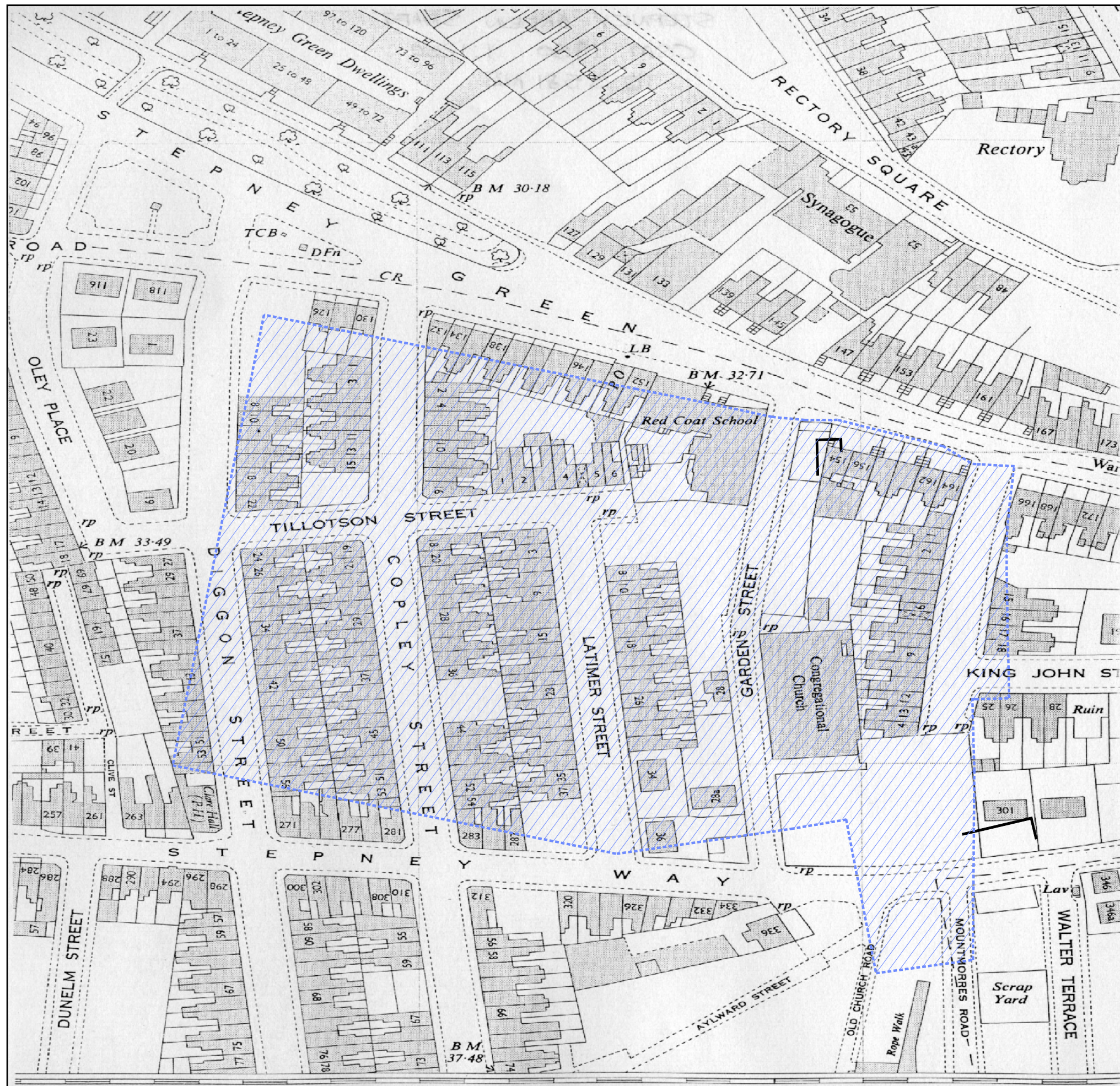
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
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TITLE:
STEPNEY GREEN SHAFT
HISTORICAL MAPPING
ORDNANCE SURVEY 1948

SCALE: NTS @ A1


DRAWING AND CAD FILE No.: P30103-C1M15-E00-D-50111

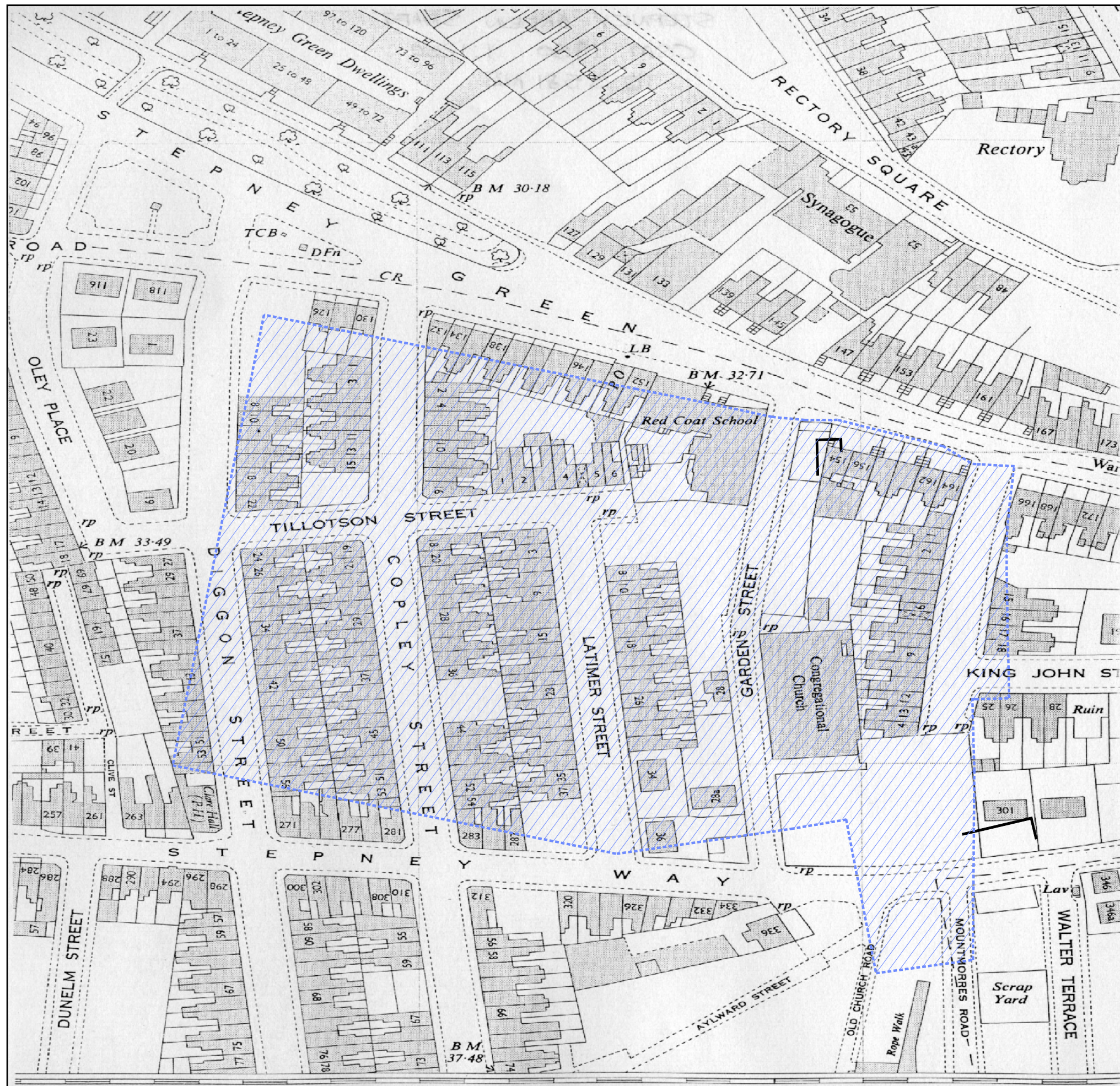
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
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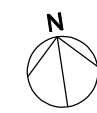




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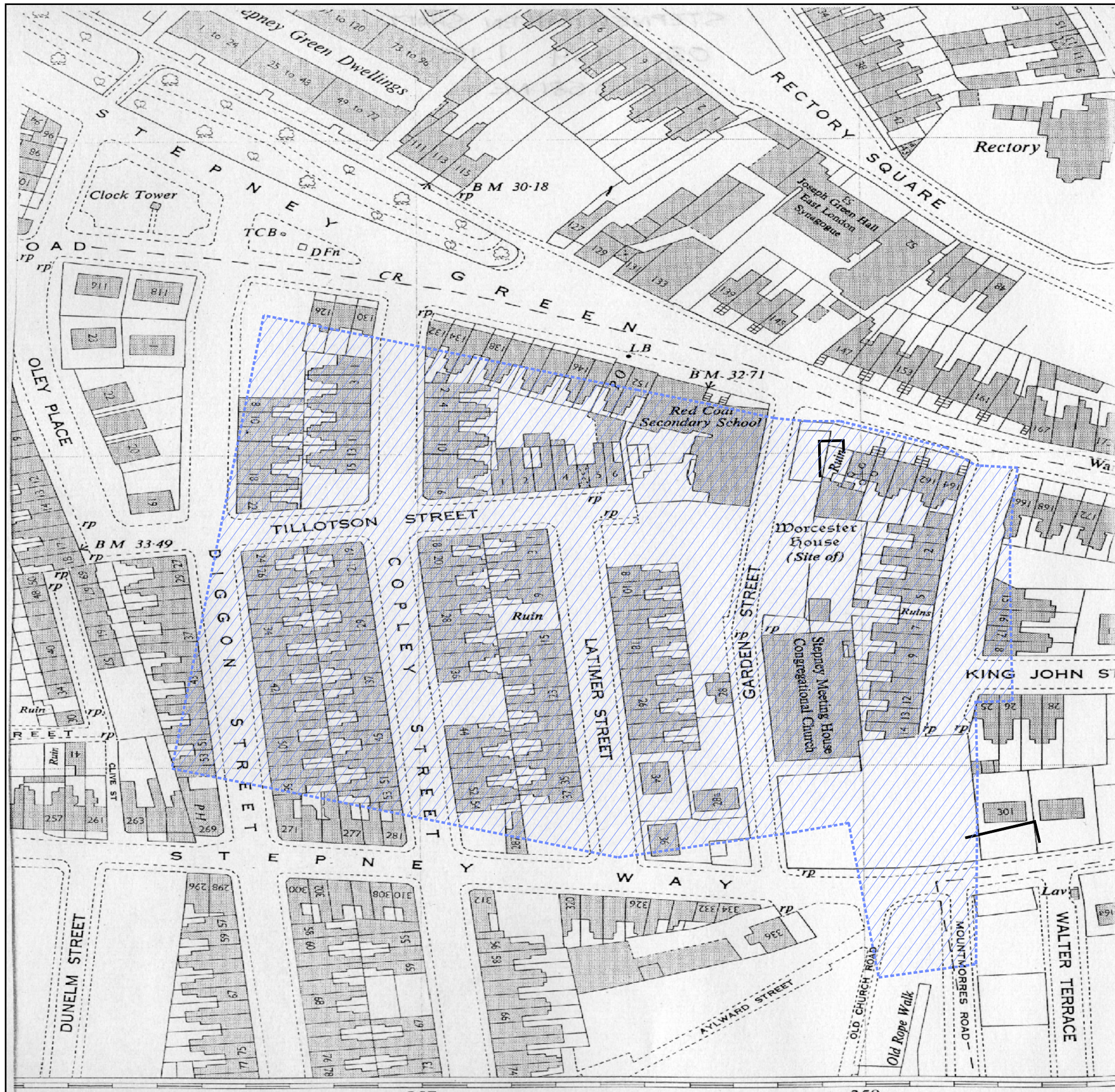
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
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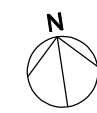
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REV	DATE	DESCRIPTION	DJC	MC	DRW	ACC
A02	05/12/2008	SCHEME DESIGN 3 ISSUE				
			BY	CHKD	APP	CAD ACC

LEGEND

 Crossrail Worksite



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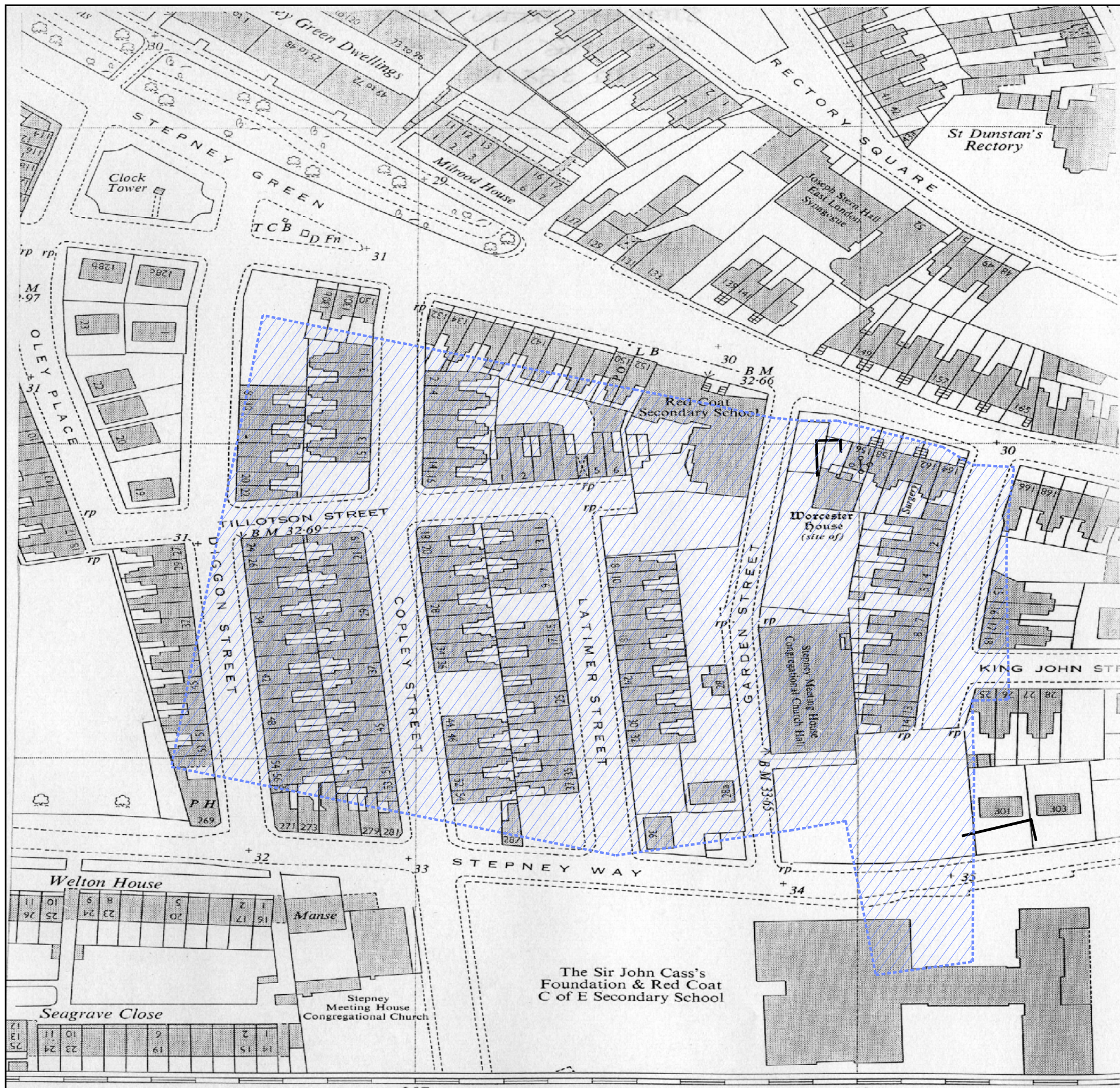
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TITLE:
 STEPNEY GREEN SHAFT
 HISTORICAL MAPPING
 ORDNANCE SURVEY 1954


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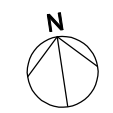
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REV	DATE	DESCRIPTION	BY	CHKD	APP	CAD	ACC
A02	05/12/2008	SCHEME DESIGN 3 ISSUE	DJC	MC	DRW		

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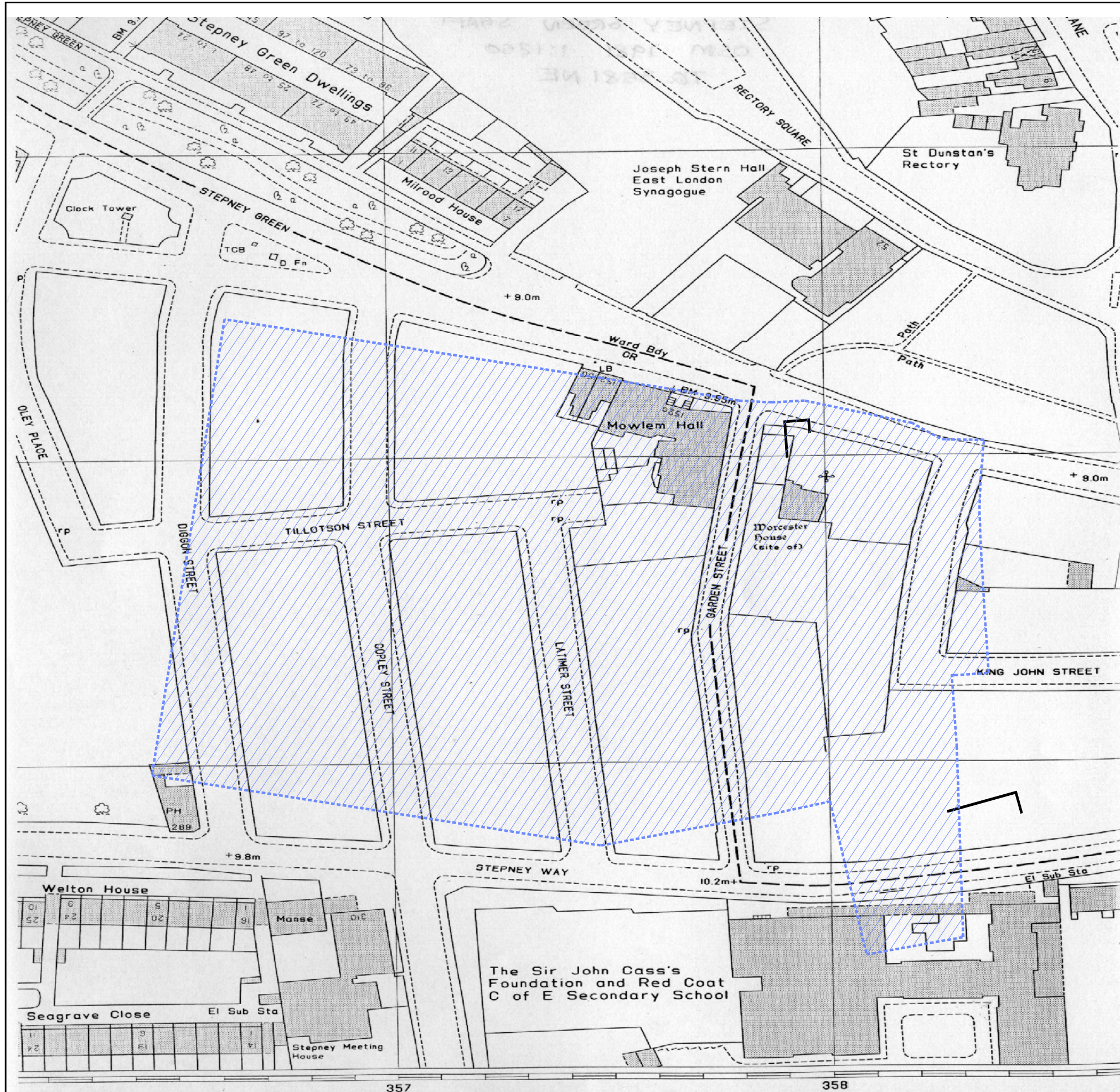
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 HISTORICAL MAPPING
 ORDNANCE SURVEY 1966**

SCALE: **NTS @ A1** DRAWING AND CAD FILE No: **P30103-C1M15-E00-D-50114** REV: **A02**

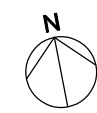
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A02	05/12/2008	SCHEME DESIGN 3 ISSUE	DJC	MC	DSW		

LEGEND

Crossrail Worksite



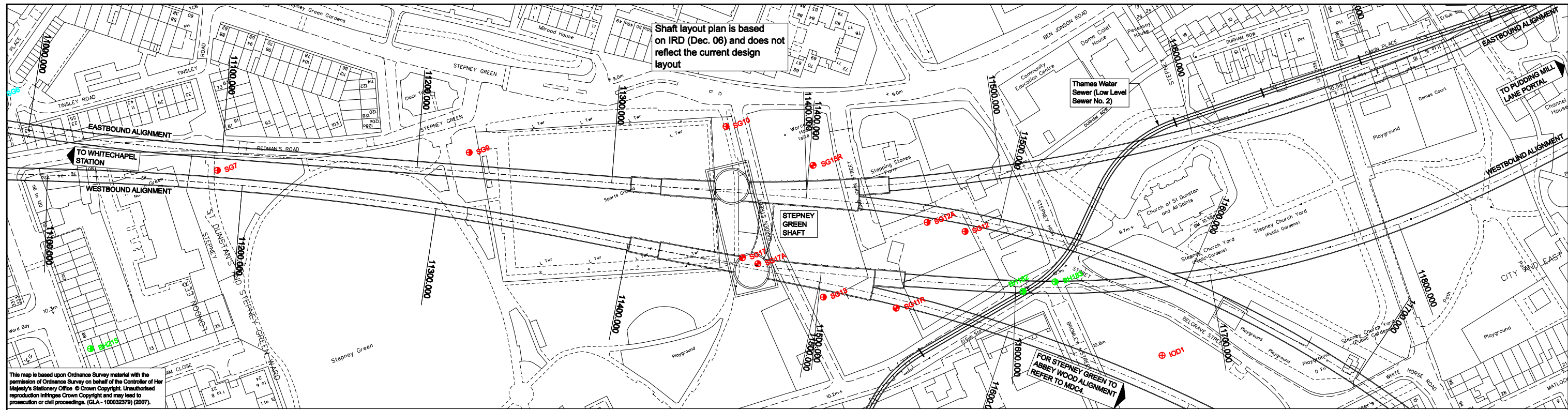
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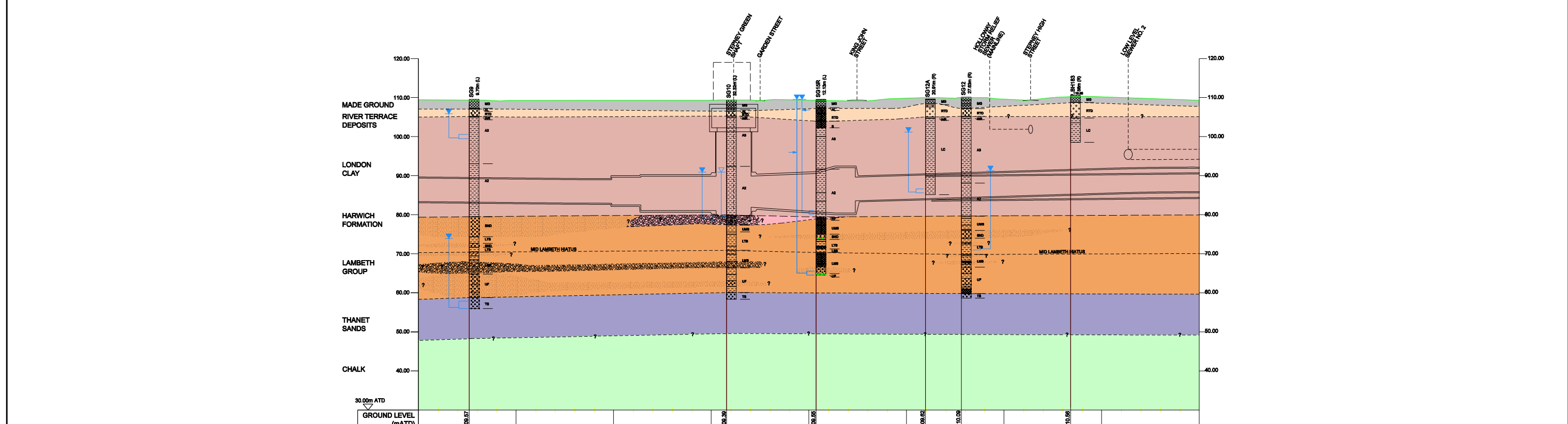
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TITLE:
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 HISTORICAL MAPPING
 ORDNAVANCE SURVEY 1981

SCALE: NTS @ A1 DRAWING AND CAD FILE No: P30103-C1M15-E00-D-50115 REV: A02



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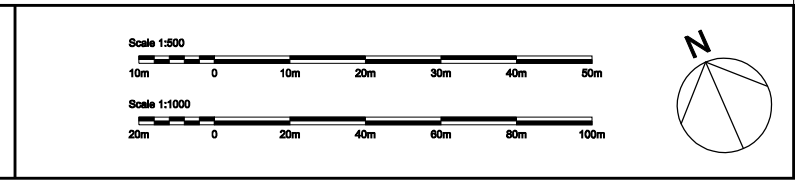
Longitudinal Section - Scale H=1:1000 V=1:500

- KEY**
- Crossrail Boreholes Package 2 (Fes) (2003)
 - Crossrail Boreholes Package 3 (Nh) (2005)
 - Crossrail Boreholes Package 8 (Nh) (2005)
 - Third Party Boreholes
 - 18.32m (L) Offset from centre line (Left or right)
 - - - Interpreted Geological Boundary
 - - - Existing Ground Level
 - Gravel layers, potentially water bearing (principal particle size gravel or cobbles) Within LC and LG
 - Sand layers, potentially water bearing (principal particle size -sand or silt) Within LC and LG
 - Recorded water level during water strike
 - Water strike level
 - Maximum recorded groundwater level (Piezometer)
 - Piezometer tip level and sand filter zone
 - Arrow indicates maximum recorded groundwater level (Piezometer) within reliable data set
 - Piezometer tip level and sand filter zone of faulty piezometer
 - Indicates uncertainty in stratum boundary level and/or extent

- NOTES**
- The scheme plan and vertical alignment is revision MDC3-002 alignment. This drawing represents the existing geotechnical information provided by GCG and third party information gained from other sources. This includes Norwest Holst reports 1D0101-G0G00-00024 - 35; FES Reports 1D0101-C1G-00010-12; GCG Interpretative Report (1D0101 CIG00-00507 - 9).
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 - The geotechnical long sections have been interpreted principally from the boreholes closest to the section line. However, the overall geological structure has been interpreted from all the data available. Where exploratory holes are offset from the section line, strata boundaries shown on the long section may not coincide with the strata boundaries within individual exploratory holes.
 - For detailed information regarding stratigraphy and material type, reference should be made to the individual factual exploratory hole records for development of design sections.
 - Most reliance has been placed on the Crossrail ground investigation boreholes.
 - Chainages shown on plan and sections are indicative only, and subject to change. Both sections chainages increase running west to east.
 - Some boreholes are not shown on the section due to absence of detailed material descriptions.
 - Drawings based on available information up to April 07.

REV	DATE	DESCRIPTION	BY	CHKD	APP	CAD	ACC
A01	17/12/2007	FIRST ISSUE - SCHEME DESIGN	REH	BUL	DSW		

STRATIGRAPHIC UNITS		A2,A3,B	London Clay Formation	LMB	Lower Mottled Beds
MG	Made Ground	LC	Sub Strata	LG	Unclassified
AL	Alluvium	HF	Unclassified London Clay	UF	Lambeth Group
LS	Langley Silt	USB	Upper Shelly Beds	TS	Upton Formation
RTD	River Terrace Deposits	UMB	Upper Mottled Beds	BUB	Thanet Sand Formation
WR	Weathered London Clay	LTB	Laminated Beds	CK	Bullhead Beds
		LSB	Lower Shelly Beds		Chalk



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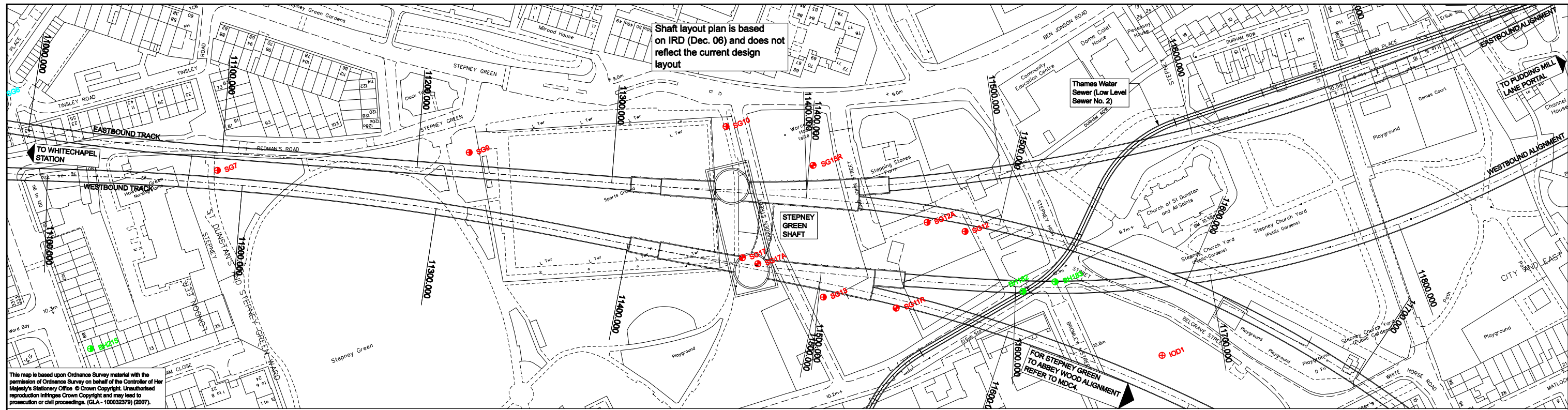
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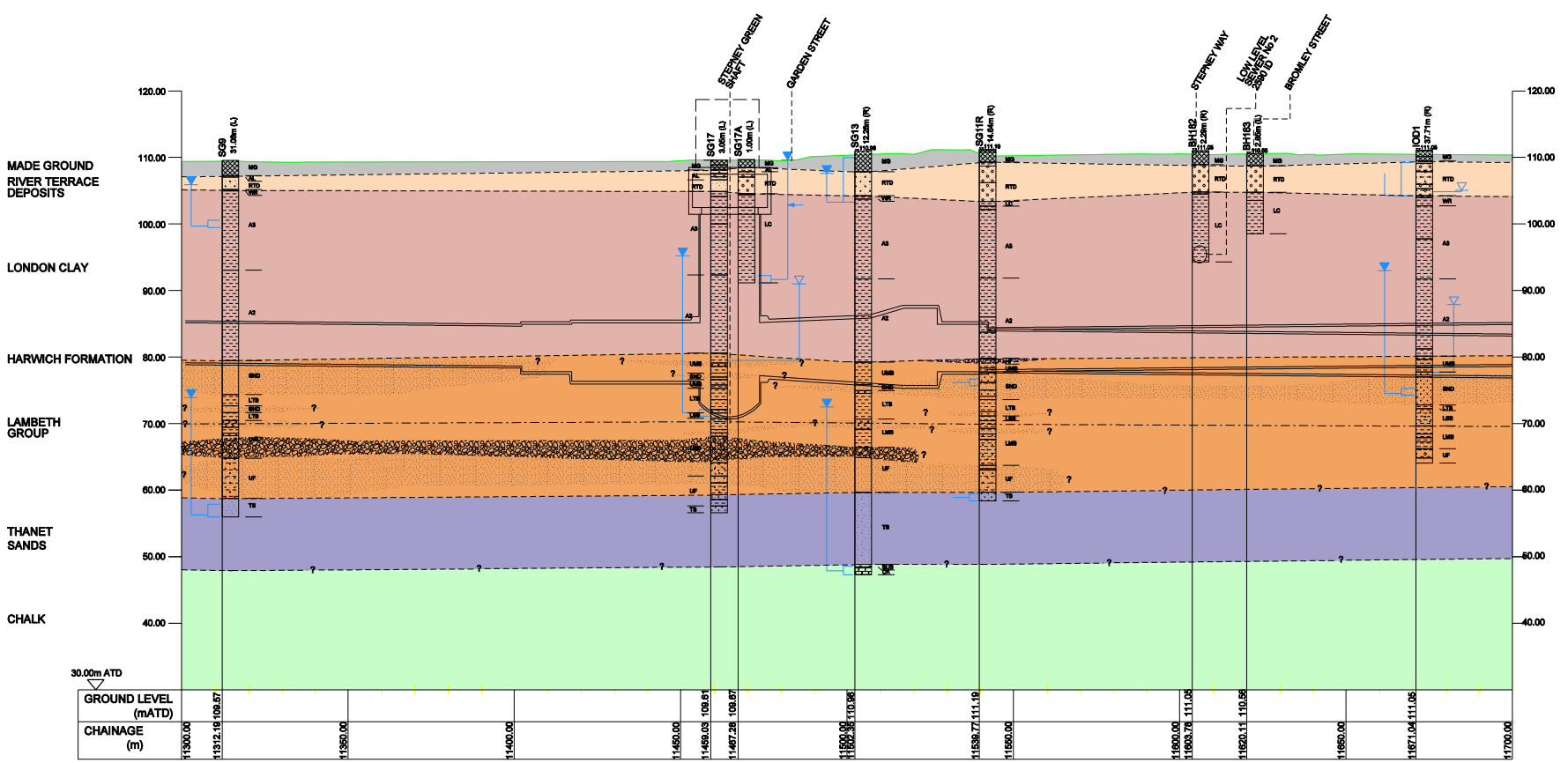
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 GEOLOGICAL SECTION**

SCALE: 1:1000 @ A1
 DRAWING AND CAD FILE No: P30101-C1M15-G00-D-50007
 REV: A01

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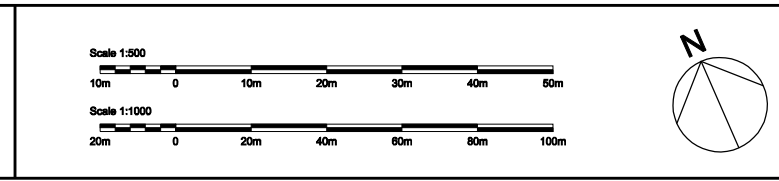
This drawing is part of an interim submission. Further development is required prior to full submission in February 2008.

- KEY**
- Crossrail Boreholes Package 2 (Fes) (2003)
 - Crossrail Boreholes Package 3 (Nh) (2005)
 - ⊕ Crossrail Boreholes Package 8 (Nh) (2005)
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 - - - - - Interpreted Geological Boundary
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 - Recorded water level during water strike
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- NOTES**
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 - Drawings based on available information up to April 07.

REV	DATE	DESCRIPTION	BY	CHKD	APP	CAD	ACC
A01	17/12/2007	FIRST ISSUE - SCHEME DESIGN	REH	BUL	DSW		

STRATIGRAPHIC UNITS		A2,A3,B		LMB	
MG	Made Ground	LC	London Clay Formation	LG	Lower Mottled Beds
AL	Alluvium	Sub Strata	Unclassified London Clay	UF	Unclassified Lambeth Group
LS	Langley Silt	HF	Harwich Formation	TS	Upnor Formation
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WR	Weathered London Clay	UMB	Upper Mottled Beds	BUB	Bullhead Beds
		LTB	Laminated Beds	CK	Chalk
		LSB	Lower Shelly Beds		



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TITLE:
**STEPNEY GREEN WESTBOUND ALIGNMENT
 GEOLOGICAL SECTION
 WESTBOUND TUNNEL**

SCALE: 1:1000 @ A1
 DRAWING AND CAD FILE No: P30101-C1M15-G00-D-50017
 REV: A01

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9.2 Previous Archaeological Investigation and Consultation



Meeting Notes

Meeting Archaeological remains and the proposed Crossrail works at Stepney Green
Date 24 February 2004
Place Stepping Stones Farm
Prepared by Nick Elsden/George Dennis **Date of Issue** 13 July 2004

(external party)

Attendees

Steven Brindle	EH Inspector of Ancient Monuments for London region Head of EH Greater London Archaeology Advisory Service (GLAAS))
Robert Whytehead	EH GLAAS officer
Nick Truckle	EH regional archaeological science advisor for London
Jane Sidell	

Crossrail attendees

Cathy Payne	Environment and Land Use Planning Team
Gisela Boavida	Environmental Consultation Manager
George Dennis	MoLAS (Crossrail Project Manager)
Nick Elsden	MoLAS (Crossrail Project Officer)

Copies to:

- | | | Action |
|----|--|--------|
| 1 | NE and GD explained the archaeological and historical background to the site, and CP the current proposals for permanent construction and temporary works (construction compound/'worksite'). | |
| 2. | In summary, the potential archaeological remains consist of a moderate potential for prehistoric remains, which might possibly include burials; and a high potential for the remains of the grounds, gardens and satellite buildings associated with the 16th to 19th-century Worcester House, and various non-conformist sects which utilised its grounds following the Civil War, notably a 1674 Meeting House. Known resources include the below ground remains of Worcester House itself, and two sets of above ground structures, representing the ruined walls of a c 1811 Baptist College, and a c 1862–3 Congregationalist Church. | |
| 3 | EH/GLAAS stated that it would be acceptable to mitigate the impacts of the permanent works, a vent and construction shaft, by <i>preservation-by-record</i> (ie archaeological excavation). This area forms only a small percentage of the whole proposed Crossrail site, the remainder of which would be occupied by temporary works, and could include a small proportion of the 16th-century Worcester House, and its grounds, gardens, outbuildings, etc). | |
| 4 | The principle of <i>preservation-in-situ</i> for standing remains was discussed. There are three groups of such structures at Stepping Stones Farm, of which two fall within the area of the proposed Crossrail works. | |
| 5 | It was noted that current Crossrail proposals include the need for protective works for the standing remains of the brick-built 'Baptist College' of c 1811, located in the angle of Garden Street and Stepney Green. | |
| 6 | The impact on the standing walls of the 1860s Congregational Church was also discussed. The eastern c 11.7m of the wall are faced with stone (Kentish rag) on the north face, and also over the whole of the blocked-in doorway forming the eastern end of the wall (this doorway was originally an external structure | |

prolonging the northern wall of the church). Current Crossrail plans for the proposed construction compound ('worksite') have landtake that includes the western c 8m of the wall. This 8m length is very close to the distance over which there is no stone facing.

- 7 SB said that it would be preferable to preserve the wall in its entirety, but if necessary, it could be appropriate to preserve the brick-built section *by record*, allowing its demolition, whilst preserving the stone-faced section *in situ*. In either event, supporting and protective measures would be required during the works, and restoration following them. In this respect, it should be noted that the doorway at the eastern end of the wall is showing cracks between the blocking and the doorway, and between the doorway and the walling around it.
- 8 A masonry gatepost at the southern edge of the site lies outside of the proposed Crossrail works, and is thus not at risk.
- 9 EH/GLAAS would be seeking *preservation-in-situ* wherever possible for the below-ground remains over the temporary worksite, subject to field evaluation to provide data around which the mitigation measures (*ie* detailed design of the temporary works) could be based.
- 10 EH/GLAAS stated that extensive archaeological evaluation would be required in order to understand the presence, extent, nature, and depth below ground level of archaeological remains on the site, in order that adequate mitigation measures could be devised for the potential and known below ground remains. It was noted that archaeological remains might exist across all of the site, not just in the immediate vicinity of the parts of Worcester House which were exposed and left *in situ* in 1985. The latter lie in the northern c 43m of the area bounded by Garden Street, Stepney Green, and King John Street.
- 11 EH and GLAAS would not require that such evaluation should take place preceding the Hybrid Bill, but it was noted that they would want a commitment from Crossrail that such works and subsequent mitigation measures would take place if Crossrail was approved, and with an appropriate timescale to ensure that subsequent archaeological mitigation could take place in advance of construction.
- 12 It was remarked that although the currently-available information would suggest that the remains of Worcester House lie c 1.9 below ground level, this seemed to be too deep, although ground levels within parts of the farm have clearly been built up above those of the streets outside. This illustrates the need for field evaluation before determining protective measures in detail.
- 13 EH/GLAAS suggested that it would be a positive benefit if such evaluations formed a 'community excavation'. This would help to ameliorate the negative effect of such works within the public amenity of Stepping Stones Farm. MoLAS have previous experience of such projects.
- 14 Following the results of archaeological field evaluation, the measures necessary to protect archaeological remains could be devised, in consultation with EH and GLAAS. Given that this could have a notable effect on the layout or construction techniques used in this major tunnelling worksite, it would be preferable for Crossrail if this were to take place as soon as possible. If such decisions were not completed in time for the Hybrid Bill, however, it would affect the level of detail in which Crossrail could describe proposed activities and structures within the construction compound ('worksite'), which could well affect other disciplines within the ES and consultation.



Meeting Note

Meeting Meeting to update on archaeological issues at Stepney Green and Whitechapel
Date 13 July 2004
Place Crossrail, 1 Butler Place
Prepared by Cathy Payne **Date of Issue** 14 July 2004

(external party)

Attendees Nick Truckle EH GLAAS officer
 Jane Sidell EH regional archaeological science advisor for London

Crossrail attendees

Cathy Payne Environment and Land Use Planning Team
 Richard Davies Design Manager, Whitechapel Station
 Gordon Torp Petersen Tunnelling Design Manager
 George Dennis MoLAS
 Nick Elsdon MoLAS

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Action

1. Introductions

2. Structure of the meetings

CP explained the purpose of the two meetings programmed for today and for 28 July. The first meeting is to examine issues at two key sites – Stepney Green and Whitechapel Station. The second meeting is to provide information on proposed generic mitigation, other issues of concern (principally Palaeolithic remains and timber trackways in alluvium) and on other sites.

3. Stepney Green

3.1 Notes of the previous meeting.

CP circulated notes of the previous meeting held on site (24 February 2004) and apologised for the delay. NT/JS indicated they were content with the minutes after a brief read through, although CP asked for any comments to be sent through to Crossrail.

3.2 Update on Stepney Green issues

NE updated on the situation at Stepney Green since the last meeting. Crossrail are proposing preservation by record for any remains in the deep box and on the western (Astroturf) worksite. Preservation in situ is proposed for any remains on the worksite to the east of Garden Street. NE indicated that the site layout had been revised since the previous meeting – all infrastructure with deep foundations and heavy loadings has been moved to the western part of the site. Crossrail is now starting to look in more detail at protective measures for the worksite to the East of Garden Street.

NE updated on borehole information which had been received since the last meeting. Two of the boreholes provided levels for archaeological remains on the site.

NT welcomed the change to the site layout, but asked for some additional information to properly understand the impacts. In particular, he asked for

cross-sections of the site to show the levels and a plan showing archaeological remains on the site, together with proposed works.

CP indicated that this information was being worked on and Crossrail would aim to provide more information at the next meeting on 28 July. GTP noted that the design team were examining levels across the site in relation to the level of the top of the diaphragm wall, which was a key constraint.

NT also indicated that he would expect that test pits would need to be dug to provide information to properly design the protective works. As mentioned at the last meeting, this could involve the community in any excavation. Crossrail are committed to undertaking this evaluation work, but were not able to say when this would be undertaken. There were difficulties of land access prior to Royal Assent. CP indicated that Crossrail could raise this with London Borough of Tower Hamlets.

NT noted that the evaluation may not be undertaken prior to Royal Assent. He indicated that any protective works scheme which was written would need to be flexible to accommodate the results of evaluation, and he promoted undertaking evaluation ASAP. He would expect that the Crossrail would set out how any evaluation would be undertaken so that delay was avoided once the Bill was approved.

4. Whitechapel Station

4.1 Introduction to the station design

RD provided an introduction to the design of Whitechapel station.

4.2 Archaeological issues

NE provided a summary of archaeological issues at the site. Most of the site is suitable for preservation by record. However, Crossrail did want to raise the issue of the potential location of the Red Lion Tudor Theatre. NE summarised the documentary evidence for the presence of the theatre on the site. There is only a potential for the presence of the theatre, although this is the most favoured location. In addition, there is a question over the survival quality of any remains.

NT accepted that there was no other acceptable location for the Whitechapel ticket hall. With reference to PPG16, he indicated that preservation by record would be an appropriate response taking into account the importance of the Crossrail scheme and the fact that there were no suitable alternatives for the location of the ticket hall.

NT suggested that Crossrail undertake additional documentary research. Crossrail agreed to undertake additional desk based study.

NT also suggested evaluation should be undertaken. NE noted that since evaluation would only show a limited portion of the site, it would be likely only to show the absence of remains, but would not be sufficient to confirm the presence of the theatre. Crossrail noted that undertaking evaluation prior to Royal Assent may not be practical, but would look at the possibility.



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001	15/03/2004	FIRST ISSUE					



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TITLE:
**STEPNEY GREEN SHAFT
 ARCHAEOLOGY
 LEVEL PLAN**

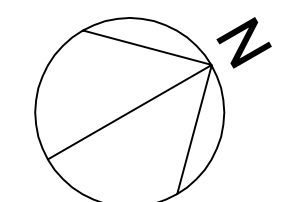
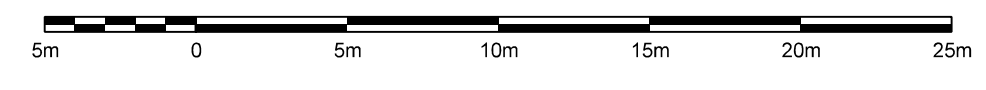
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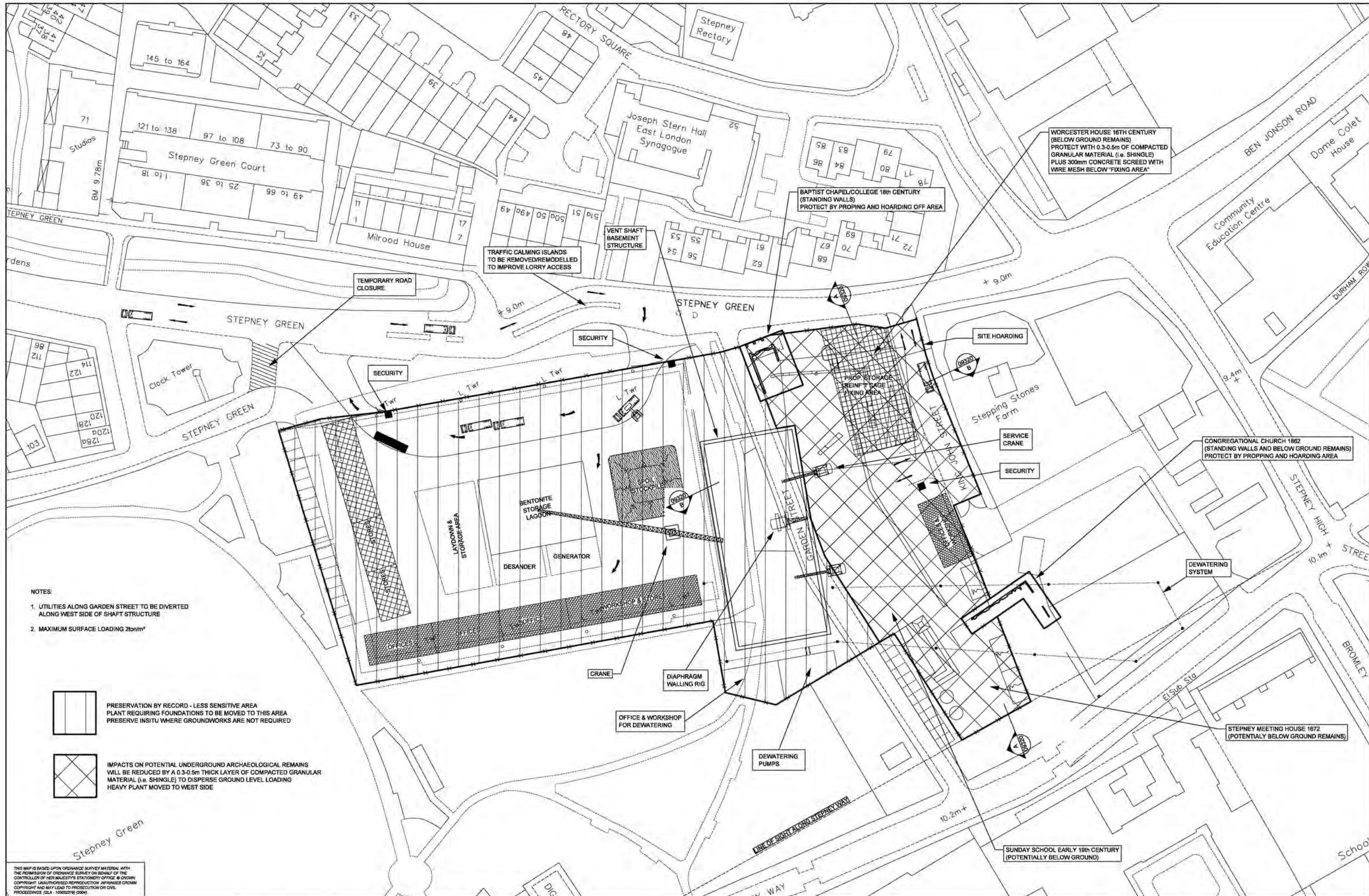
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TITLE:
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 ARCHAEOLOGY
 LEVEL PLAN**

SCALE: **1:250 @ A1**

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REV: **R1**

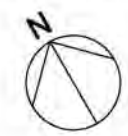


- NOTES:
1. UTILITIES ALONG GARDEN STREET TO BE DIVERTED ALONG WEST SIDE OF SHAFT STRUCTURE
 2. MAXIMUM SURFACE LOADING 2ton/m²

- PRESERVATION BY RECORD - LESS SENSITIVE AREA PLANT REQUIRING FOUNDATIONS TO BE MOVED TO THIS AREA PRESERVE INSITU WHERE GROUNDWORKS ARE NOT REQUIRED
- IMPACTS ON POTENTIAL UNDERGROUND ARCHAEOLOGICAL REMAINS WILL BE REDUCED BY A 0.3-0.5m THICK LAYER OF COMPACTED GRANULAR MATERIAL (i.e. SHINGLE) TO DISPERSE GROUND LEVEL LOADING HEAVY PLANT MOVED TO WEST SIDE

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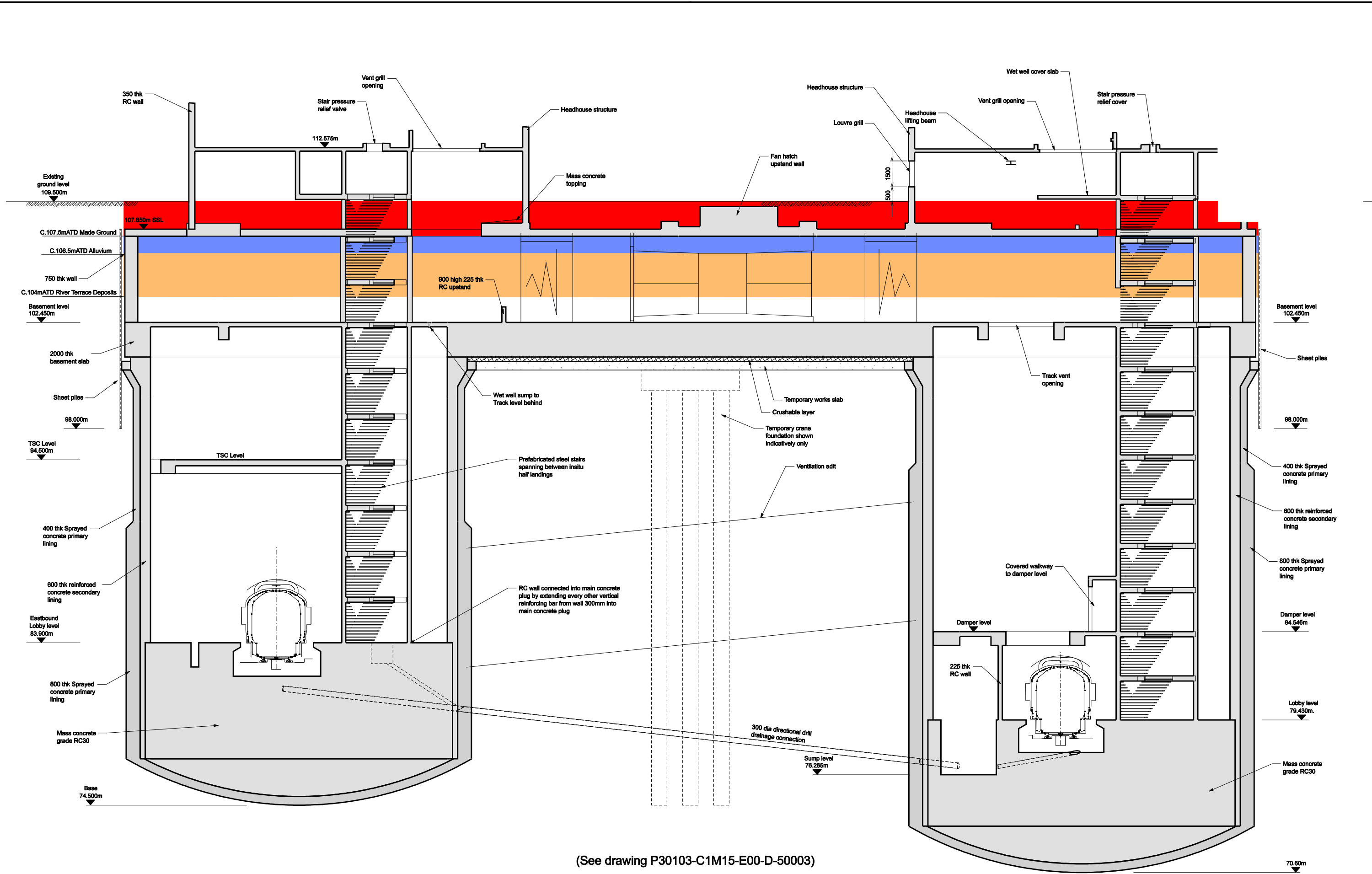
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TITLE:
**STEPNEY GREEN SHAFT
 ARCHAEOLOGY
 GENERAL PLAN**

SCALE: 1:500 @ A1
 DRAWING AND CAD FILE No: 1D0300-C1W15-C00-P-09300
 REV: R1

9.3 Site Deposit Model

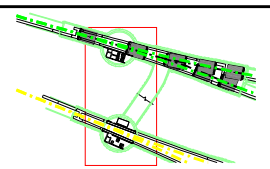


(See drawing P30103-C1M15-E00-D-50003)

Eastbound Shaft

Westbound Shaft

REV	DATE	DESCRIPTION	BY	CHKD	APP	CAD	ACC
A01	05/12/2008	SCHEME DESIGN 3 ISSUE	REH	B.L	DRW		
			VRM	MC	DRW		



Key

- Made ground
- Alluvium (possible Archaeology)
- River Terrace deposits

NB. Alluvium unlikely to be uniform across site

Scale 1:100

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TITLE:
 STEPNEY GREEN JUNCTION
 POTENTIAL SURVIVAL OF ARCHAEOLOGICAL
 DEPOSITS

SCALE:
 1:100 @ A1

DRAWING AND CAD FILE No:
 P30103-C1M15-E00-D-50160

REV:
 A01

RESTRICTED

9.4 Previous Archaeological Interventions in the Area

The list below comprises a gazetteer of archaeological excavations and observations within the vicinity of the site.

SHS79

Stepney High Street, E1

Archaeological periods: Medieval, Post-Medieval

NGR TQ 3580 8160

Excavation carried out by ILAU in 1979.

Excavation revealed evidence of early occupation in the form of a Saxon/Norman pit and two late medieval pits. The area had been cultivated from at least the 16th c, and an isolated hearth of the same period was recorded.

WOR85

Stepney Green, E1

Archaeological periods: Post-Medieval

NGR TQ 3580 8170

Evaluation carried out by DGLA (N) in 1985.

Excavation revealed the remains of the octagonal gatehouse tower of the former Worcester House, built in the late 16th century. A substantially constructed range of buildings represented the rear of the gatehouse and the NW wing of the house itself. A less substantial set of structures was also recorded, either ancillary buildings of the east wing or later infilling of the former courtyard. The south wing of the house was outlined by two rooms, though structural differences from other parts were noted. The buildings appear to have been only slightly modified, if at all, before demolition in 1858.

DRW04

21-23 Durham Row, Stepney Green, E1

Archaeological periods: Post-Medieval

NGR TQ36008165

Evaluation encountered 19th to 20th century Made Ground.

RCT05

Sir John Cass Foundation: Redcoat Church of England, Stepney Way, E1

Archaeological periods: Modern

Evaluation modern Made Ground and 20th century pottery.

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

SHY04**Shandy Park, Duckett Street, Stepney, E1****Archaeological periods: Post-Medieval**

Watching brief encountered Post-medieval industrial dumped deposits and a 19th century cemetery.

XRE03**Crossrail Standing Building Recording****Archaeological Periods: Post-medieval**

Recording of a 19th century Baptist Chapel/College and Congregational Church.

WHH94**Medical Centre, White Horse Road, Stepney, E1****Archaeological Periods: Prehistoric; Medieval; Post-medieval**

See Also: 'London Archaeologist Round-up 1994': Three trenches were excavated. In all three trenches, most of the trench had been destroyed almost down to the natural gravel by 18th-c and later disturbance and no pre-modern archaeological features were found. The only finds were a possible Prehistoric flint and some Medieval and Post-medieval pottery.

CLX05**1 Coleman Street, EC2****Archaeological Periods: None**

Watching brief, no archaeology encountered. Modern brick rubble overlying natural gravels.

CZT06**583 Commercial Road, E1****Archaeological Periods: None**

Evaluation, no archaeology encountered.

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

9.5 Gazetteer of the Known Archaeological Resource

Record ID	Description	Subject(s)	Period(s)	Relevant Sub-sites
MLO1982	Stepney High Street, TQ 3585 8163, fragments of two, Late Bronze Age or Early Iron Age jars, possibly excavated from within a pit and interpreted as funerary deposits were recorded during an excavation by the ILAU (Site Code SHS79).	Funerary deposit	Late Bronze Age or Early Iron Age	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO11881	Stepney, TQ 3590 8160, Early Medieval & medieval village of Stepney, the name derived from <i>Stebunhithe</i> meaning 'Stebbs landing place', a landing probably at Ratcliff. The name was attached to a settlement ½ a mile inland in the vicinity of St Dunstons Church. The manor of Stepney (present day Tower Hamlets, Hackney & Haringay) in 1086 was largely held by the Bishop of London being largely rural, with marsh to the south near the Thames and forested to the north.	Village	Early medieval & medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO2772	Stepney High Street, TQ 3585 8163, an excavation by the ILAU (Site Code SHS79) recorded that the site appeared to have been used for cultivation from at least the 16 th century, the remains of a 16 th century hearth was also found, but no associated building remains were evident.	Cultivation soil & Hearth	Medieval and Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO3422	440-450 Commercial Road, TQ 3566 8116, location of a post-medieval terraced house, not Listed.	Terraced House	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO3784	42-48 Redmans Road, TQ 3535 8183, location of a post-medieval terraced house, de-Listed.	Terraced House	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO3872	Stepney High Street, TQ 3585 8163, a single Saxo-Norman pit and two late medieval pits were recorded during an excavation by the ILAU (Site Code SHS79). The site appeared to have been used for cultivation from at least the 16 th century, the remains of a 16 th century hearth was also found (See MLO2772).	Occupation evidence	Early medieval & medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO3915	Stepney, TQ 358 818, location of a medieval plague pit, found to the rear of the Thames Police Court in 1929; the exact location is unclear.	Plague Pit	Medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO3988	Stepney Green, TQ 3580 8169, location of the home of the Marquis of Worcester, built in the late 16 th century. Trial trench evaluation of the site identified the semi-octagonal western gatehouse tower and a range of buildings constructed from soft red bricks set in yellow mortar. The buildings appear to have been altered little between the late 16 th century and 1858 when they were demolished for housing.	House	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

Record ID	Description	Subject(s)	Period(s)	Relevant Sub-sites
MLO8091	Stepney High Street, TQ 3589 8155, location of a house owned in 1299 by the Lord Mayor of London; with parliament being held there. By the late 18 th century it had become the Spring Garden Coffee House. Not Listed.	House & Moated site	Medieval & Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO8337	29 Aston Street, TQ 3618 8144, unspecified post-medieval house or shop, now de-Listed, noted at this location.	House / Shop	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO9252	Salmon Lane, TQ 3635 8123, location of a medieval and post-medieval road running from TQ 36050 81350 to TQ 36650 81100.	Road	Medieval and Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO23051	Stepney, TQ 3580 8160, Roman red ware cup with handle found at an unspecified location on this site.	Find spot	Roman	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO23059	White Horse Road, TQ 3585 8150, the route of the medieval road between Ratcliffe and Mile End via Stepney (TQ 35700 82100 to TQ 36000 80900).	Road	Medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO23250	Stepney, TQ 3590 8160, a medieval or post-medieval moneybox in a red glazed ware with a globular body, a hen and three chickens on the top, was found in an unspecified location.	Find spot	Medieval or Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO23318	Stepney, TQ 3580 8160, two Roman Unguentaria of bluish-green glass found at an unspecified location on this site.	Find spot	Roman	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO60242	White Horse Road, TQ 3610 8162, a prehistoric struck flint of unidentified function was found during an archaeological evaluation in 1994 (Site Code WHH94).	Find spot	Prehistoric	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO60243	White Horse Road, TQ 3610 8162, a medieval potsherd was recovered with a brick paver, suggesting medieval occupation in the vicinity, during an archaeological evaluation in 1994 (Site	Find spot	Medieval	Stepney Green Shaft, Stepney Green

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

Record ID	Description	Subject(s)	Period(s)	Relevant Sub-sites
	Code WHH94).			Construction Compound & Stepping Stones Farm Construction Site
MLO60244	White Horse Road, TQ 3610 8162, pits of 19 th century date and associated with houses occupying the site between 1804 and 1950 were recorded during an archaeological evaluation in 1994 (Site Code WHH94). Pottery dated to the 17 th and 18 th century was also recovered suggesting occupation in the vicinity at this time.	Find spot	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO60245	White Horse Road, TQ 3610 8162, the corner of a 18 th or possibly 19 th century brick built structure was recorded during an archaeological evaluation in 1994 (Site Code WHH94).	Structure	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO63478	Stepney Green E1, TQ 3580 8170, the remains of a 16 th century octagonal gatehouse tower belonging to the former Worcester House, were revealed during an excavation by the Department of Greater London Archaeology in 1985 (Site Code WOR85).	Gatehouse Tower	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO63480	Stepney Green E1, TQ 3580 8170, a 'substantially constructed' range of post-medieval buildings representing the rear of the gatehouse and the northwest wing of Worcester House were recorded (Site Code WOR85).	Gatehouse House	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO63482	Stepney Green E1, TQ 3580 8170, a set of post-medieval structures less substantial than those of the northwest and south wings (MLO63480 & MLO63483) were recorded during an excavation by the Department of Greater London Archaeology (Site Code WOR85). These building were interpreted as either ancillary buildings of the east wing or infilling of the former courtyard.	Building	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO63483	Stepney Green E1, TQ 3580 8170, the south wing of post-medieval Worcester House was excavated (Site Code WOR85). Two rooms were recorded forming the outline of the wing, the building appeared to have been slightly modified prior to its demolition in 1858.	House	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO66623	Stepney High Street, TQ 3585 8163, a series of medieval occupation features (scoops, postholes and a ditch) were recorded during an excavation by ILAU (Site Code SHS79).	Occupation evidence	Medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO71221	Stepney High Street, TQ 3598 8159, location of a burial ground. Holmes notes that the site covered an area of approximately 6 acres and that during the time of the plague c.150 bodies were interred each day. The area was laid out as a public garden in 1887.	Church and Churchyard	Medieval and Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones

Archaeology Detailed Desk Based Assessment – Stepney Green Shafts

Record ID	Description	Subject(s)	Period(s)	Relevant Sub-sites
				Farm Construction Site
MLO71223	Shandy Street, TQ 3610 8200, location of a post-medieval cemetery known as the East London Cemetery, sometimes called the Beaumont Burial Ground. Noted by Holmes as covering 2.5 acres and being much over crowded. It was laid out as a public garden in 1885.	Cemetery	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO77951	Land at Shandy Park Duckett Street Stepney, TQ 3603 8195, the location of a 19th century cemetery evidenced by human bone and a gravestone. Later dump deposits revealed evidence of local clay pipe making and sugar refining industries. Unspecified archaeological work (Site Code SHY04)	Cemetery	Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO78293	21-23 Durham Row, TQ 36000 81650, archaeological evaluation by PCA (Site Code DRW04) revealed a heavily mixed 19 th /20 th century made ground deposit derived from the construction and subsequent demolition of the Victorian house that occupied the site. A thick 19 th century garden soil was also recorded sealing undisturbed brick earth deposits.	Made ground	Modern	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO93221	25 White Horse Lane, TQ 35833 81861, Grade II Listed Building; an early 19 th century building in brick, of two storeys with four windows including one blank on the first floor and a coped parapet. The roof was not visible at the time of recording. The first floor windows have segmented arches. The ground floor has round arched windows and door. All glazing bars were intact. The entrance to the rear under the southern end of building leads to a cobbled yard. This was the headquarters of the Stepney Horse and Motor Haulage Company. Nos 15 to 21 (odd) and Nos 25 to 29 (odd) form a group.	Build, Yard, Road Transport Depot	Post-medieval Unknown Post-medieval	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site
MLO98101	Stepney Way [Sir John Cass Foundation, Redcoat Secondary School] Stepney, TQ 35880 81520, made ground and 20th century pottery were recorded during an archaeological evaluation carried out by AOC Archaeology (Site Code RCT05). Thames River Terrace gravel was recorded between 8.28m AOD and 8.88m AOD.	Made ground	Modern	Stepney Green Shaft, Stepney Green Construction Compound & Stepping Stones Farm Construction Site

9.6 Standing Buildings Recording at King Johns Street, Stepney Green



**Structures at King John Street,
Stepney Green, London E1
Architectural and historical
appraisal**

1E0418-C1E00-00002

Custodian

George Dennis

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NOTE

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Structures at King John Street, Stepney Green, London E1 (Stepney College and Stepney Meeting, or Congregational Church)

Architectural and historical appraisal

Andrew Westman

**Museum of London Archaeology Service,
January 2004**

Summary

An appraisal of structures standing at Stepping Stones Farm, in an open space between Stepney High Street and Garden Street, E1, has concluded that, in the north-west corner of the site, they belonged originally to a Baptist Chapel, which fronted on to Stepney Green, to the north, and, in the south-west quarter of the site, a Congregational Church, which fronted on to Spring Garden Place (now Stepney Way), to the south. The limited archaeological evidence of the surviving fabric confirms, in each case, documentary evidence for their construction, use and disuse. The Baptist Chapel was constructed *c* 1811 as the chapel of what was commonly known as Stepney College, built partly on the site of Worcester House, an aristocratic mansion of 16th-century or earlier date. From *c* 1850 this chapel was used by Plymouth Brethren. The Congregational Church was built in 1862–3 to replace a meeting house built, in 1674, partly on the same site and partly to the west, serving the Stepney Meeting, a notable early Protestant Non-Conformist congregation founded in 1644. Both buildings suffered bomb damage during the Second World War (1939–45). The chapel was burnt out leaving only its front entrance and stair vestibule standing, while the Congregational Church was demolished in 1950–1, except for its rear wall. A stone gate pier surviving at the southern edge of the site was at one side of an open passage that originally ran alongside the church between Spring Garden Place and King John Street, where a doorway, surviving in the rear wall of the church, was subsequently blocked.

Figures

A plan and photographs of the standing building remains, with extracts from Rocque's map of 1745 and the 1870 Ordnance Survey map, and an illustration of the Congregationalist church (before completion), are appended at the end of this document.

Location and description

Structure 1

Located at the north-west corner of the site, Structure 1 consists of three adjacent brick walls aligned to Stepney Green, to the north, and evidently forming the northern part of a building, originally rectangular in plan. The brick walls stand about 2m high along the west side of the building, next to the western edge of the site on Garden Street, and rise to a maximum of 4–5m on the north side. The northern wall of this structure contains a porch, projecting slightly to the north, with a large doorway formed by a pointed arch; the porch is

flanked by two lancet windows. The structure is faced with red bricks and has stone dressings.

The brickwork comprises a core of bricks (generally 95–105mm broad, 60–65mm thick and 215–220mm long), varying in colour from dark red through purple to grey-yellow, hand-made and unfrogged, laid mainly to English bond to form a wall two bricks thick, set in a soft, white, limey mortar. This core brickwork forms the internal face of the wall of the building, although this has been generally rendered with a mortar similar to the bonding material, now patchy. At least two courses of timber have been set into the internal wall face, forming lacing timbers. A short iron girder projects horizontally into the building from the internal face of the west wall, some 3–4m from the doorway. This girder, and traces of the ends of steps in the internal wall face in the north-west corner of the building, between the girder and the doorway, indicate the position of stairs, the foot of which would have originally been just inside the doorway. The steps would have risen against the north and west walls, turning in the corner, to be supported by the girder. Although the position of the doorway is symmetrical in the north wall of the building there was no evidence of a similar stair in the north-east corner. A stone corbel in the internal face of the east wall corresponded in level, but not in plan, to a similar corbel in the internal face of the west wall, which supported the iron girder; the east corbel presumably supported floor joists. The level of these corbels and the girder would not have given enough headroom, by comparison with the top of the entrance doorway, to have represented the level of the first floor. Therefore there must have been some further arrangement of the stairs and floor joists, leading up to the level of the first floor, all of which are now lost. The possibility that the ground floor was lower internally than the sill of the doorway, which survives, is unlikely. The end of a stone window sill survives in the west wall, but this by itself is not a definitive indicator of floor level.

The exterior of the building is faced with fine dark orange-red bricks, relatively uniform in size (110mm broad, 65mm thick and 222mm long, or $4\frac{3}{8}$ x $2\frac{1}{2}$ x $8\frac{3}{4}$ inches), hand-made and unfrogged, laid to Flemish bond and set in fine lime mortar. The joints are relatively thin, and some pointing and scoring of them is visible in places, despite being weathered. A plinth runs along the base of all three walls, and buttresses project to the north against the ends of the west and east walls, both the plinth and the buttresses having stone copings. The doorway is formed by a two-centred arch of two orders, each comprising a similar roll and hollow moulding. A rectangular drip mould surrounds the arch, with a similar roll and hollow, and the top of this is combined with a similarly moulded stone string-course running around the exterior of the building. On the porch this drip mould is surmounted by a blank stone frieze and a stone coping, the frieze being painted with an inscription, in which only the word 'COLLEGE' can now be made out. The stone used is rather soft, light cream in colour, possibly Bath stone.

Structure 2

Located roughly in the centre of the western half of the site, Structure 2 is a wall running from west to east for a distance of about 21m and rising to a maximum relative height of about 6m. The ground to the south is markedly higher in level than that to the north, and to the north, in any case, the ground is highly uneven: a large amount of earth and rubble appears to have been heaped against the centre of the north face of the wall, presumably to support it. The wall is built of brick, faced to the north with ragstone. In the south face, where the brickwork is exposed, shallow arches of progressively larger size towards the centre, and chimney flues rising at a shallow angle from both ends towards the centre, suggest that originally the structure rose to an apex. At the eastern end of this face the wall

returns to the south, in two places; these return walls flank a doorway, formed by a pointed arch, constructed in stone on both faces of the wall and subsequently blocked with brick. The structure was evidently the north wall of a building, the largest part of which, extending originally to the south, has been demolished.

The brickwork consists of mixed light pink and yellow stock bricks (105–110mm broad, 65–70mm thick and 220–230mm long), laid generally to English bond and set in soft, cream-coloured, limey mortar containing frequent fine quartz inclusions. The south face of the wall was presumably rendered with such mortar, which survives only in sheltered upper corners of the arches, having been weathered away elsewhere. This, the internal face of the wall, is relatively featureless except for the shallow arches, most of which function as buttresses. Further to the east is a series of three smaller arched recesses. The most westerly of these has been blocked later with brick, while the most easterly arch encloses a fireplace, connected to the eastern chimney flue. The western chimney flue, by contrast, is broken at a higher level, and less survives of the whole wall to the west than to the east. The scars of two walls returning south from the south face of Structure 2, symmetrically arranged in plan about the implied centre-line of the building, suggest that the original building was divided longitudinally from south to north into a central area and areas to either side, perhaps a nave and aisles. A doorway to the extreme east, faced with stone to both north and south, may have been entirely external.

The height of the fireplace suggests that ground level on the southern side of the structure is not far from the floor level of the original building, which, in turn, is markedly higher than ground level to the north and east. The sill of the doorway to the extreme east indicates the original ground level, and suggests that the building was flanked to its east by an open-air passage at this low level running between the doorway at its north end, entered from King John Street, and a gate at its south end, marked by Structure 3 (below), which gave on to Spring Garden Place.

To the north Structure 2 is faced over most of its surface, to the east, with square-cut blocks of light grey and off-white ragstone, in a variety of sizes between 250 x 200mm and 100 x 80mm. These blocks are squared up and laid randomly, with fine recessed joints, with dressings of well-squared blocks of a harder, light yellow stone. To the west, beyond a wall scar of mortar, about one-third of this wall face is plain brick, very like the brickwork on the internal face. The upper part of this wall is more weathered than the lower part, and a scar near the extreme west end indicates the presence originally of another brick return wall to the north. Presumably the western part of the north face directly adjoined another building, and only the part to the east, faced with stone, was external.

The building originally extended somewhat further to the west than the end of the surviving wall. If, as the remains of chimneys in this wall suggest, this building had a pitched roof with its ridge somewhere to the west of the centre of the surviving structure, the building must have extended longitudinally to the south for a considerable distance, possibly as far as the southern edge of the site, in line with Structure 3.

Structure 3

This is a stone gate pier up to 2m high at the southern edge of the site, aligned in plan to Structure 2, and in line with the east side of the doorway and wall at the extreme east end of Structure 2.

Documentary evidence and historical interpretation

Both Structures 1 and 2 may confidently be identified as parts of two respective buildings appearing on late 19th and early 20th-century maps of the area. Structure 1 corresponds to a Baptist Chapel, which fronted on to the east end of Stepney Green, while Structure 2 conforms to the north wall of a Congregational Church, a much larger building, which ran from King John Street in the north as far as Spring Garden Place (now, in part, Stepney Way) in the south. Structure 3 is shown specifically on a large-scale map of 1873, and corresponds to the south-east corner of the premises of the Congregational Church, to which it was related.

Baptist Chapel

Structure 1 comprises most of the north front of the Baptist Chapel and parts of the two adjacent west and east side-walls of the chapel. The chapel is shown on maps as a relatively small, narrow building, set back a short distance from the pavement to the north, suggesting that the north front contained its main entrance. The internal staircase probably led to a gallery at the north end, perhaps with very narrow galleries along the west and east sides of the interior. This arrangement suggests that the site was fairly constrained from the beginning, and the building may have been constructed next to a pre-existing building to its east, which was larger and more important. The materials, construction technique and style, evidenced in the surviving structure, suggest a date of construction at some time probably early in the 19th century. The use of a Gothic-style hollow roll moulding for the doorway, drip mould and string course suggests a date in the 19th century; a slightly earlier date would be unlikely, although not impossible. The relative unsophistication of the Gothic architecture may suggest an early 19th-century date, but there may have been economic constraints keeping it simple. That said, the quality of the materials and other aspects of the work is generally good. The technique of using internal lacing timbers in brickwork fell out of use early in the 19th century, suggesting that the building would have been constructed with such timbers no later than about 1830. The chapel is shown on the first edition of the Ordnance Survey large-scale map, surveyed in 1870.

Other documentary evidence indicates that the chapel was built *c* 1811, when Garden Street was laid out, in the north-west corner of the grounds of what had been Worcester House, an aristocratic mansion of 16th-century or earlier date. A terrace of houses already existed to the east, adjoining the gatehouse of Worcester House, which had sheltered several prominent 17th-century Non-Conformists at times when they were subject to persecution. In 1809 a college was established to train Baptist ministers, known as Stepney College, and the chapel was built to serve the college. From *c* 1850, when the college moved to Regent's Park, the chapel was used by Plymouth Brethren.

Contemporary drawings show the chapel on the corner of Stepney Green and Garden Street as a two-storey building, with a large multi-light arched window above the doorway in the front porch. A large-scale map of 1870 shows a single space in the interior, lit by three windows in the west wall, and states 'Sittings for 150'.

Congregational Church

Structure 2 comprises most of the north wall of the Congregational Church, which did not extend very much further to the west than the surviving wall. A garden is marked there on the 1870 map; a path is shown running directly across the garden from west to east, to an

entrance at the south end of the west wall of the church. A second path winds from this entrance up to the centre of a rectangular area marked off in front of another building that partly adjoins the church to the north-west, marked 'Sunday School'. Perhaps the marked-off area was used as a small playground. The church and the school were associated with each other. The church may also have been related to a terraced house, which directly adjoined the church in the western half of its north wall; this explains the area of plain brick exposed in the western half of the north face of the surviving structure.

The Congregational Church was a large building (about as large in plan as the parish church of St Dunstan, to the east), documented as constructed in 1862–3 to replace Stepney Meeting House, which had stood largely to the west of the later church and partly on the same site. The meeting house was built in 1674 to serve the Stepney Meeting, a notably early congregation of Dissenters founded in 1644. The total cost of the new church was £9,700, including purchase of necessary land, and its architects were C G Searle, Son and Yelf, and the builders, Dove Brothers.

The church was aligned from north to south, supported by substantial buttresses on its east and west walls, with short cross-wings or small transepts at the north and south ends. The latter wings or transepts projected in plan further to the east than to the west; the fireplaces on the east side in the surviving structure suggest that there was a separate room there, perhaps a vestry, which is confirmed by the large-scale 1870 map. The buttresses imply that the main body of the building was high; higher, at least, than the surviving structure, which has no buttresses. In fact drawings and other contemporary documents show that the nave of the building formed a single roofed space, about 75 feet (23m) high, with a tower and spire above the south-east corner rising a total of 150 feet (45m) and a smaller, secondary tower above the north-east corner. The building is documented as having been 96 feet (29m) long and 57 feet (17m) wide, lit by tall windows between the buttresses in the side walls and by a large rose window above the main entrance in the south wall. The 1870 map states that the church contained 'Sittings for 1170', while other documents state its capacity was 740 on the ground floor and 610 in side and end galleries, for a total of 1,350.

By contrast with the south front the 1870 map shows the north wall, which corresponds to Structure 2, fronting directly on to King John Street, and implies that there was not even a pavement next to the wall. The main part of Structure 2 is without a doorway. The south front of the church is shown set back slightly from a pavement, forming the main entrance, and several piers in front support railings and gates.

The maps do not explicitly show the doorway at the east end of the surviving structure. Instead there is a small gap between the north-east corner of the church and the corner of King John Street, to the north, which latter point is also the north-east corner of the entire rectangular plot occupied by the church. Presumably the doorway was open to the air to both north and south, as the stone facing on both sides suggests, and therefore could have led to an open passage or area along the east side of the church. Structure 3, a stone gate pier, could have been in line with the doorway, and may have supported a gate at the southern end of this open area. The 1870 map suggests that this open passage was also connected to an adjacent end-of-terrace house further to the east in King John Street. If so, the latter may have been a vestry house or similar dwelling. A contemporary drawing in the *Illustrated London News* (although not necessarily showing the church as actually built) suggests that some kind of passage existed at the north-east corner of the site, and another entrance to the church was under the secondary tower, facing east.

The present level of the ground where the church originally stood is markedly higher than the ground level to the north and east, and the line of the implied open passage or area

immediately to the east of the church is at the lower level. This suggests that the body of the church was raised, and indeed a basement is documented. Perhaps debris from demolition of the church backfills this original basement, up to the original floor level of the church.

Both the chapel and the church are shown on maps later than 1870. The buildings are documented as having been damaged by bombing during the Second World War (1939–45), and successive Ordnance Survey plans show later developments. By 1948 the chapel was a roofless ruin, while the church is shown as if it were still roofed; in fact the church is said to have taken several direct hits and to have been unusable. By 1950 the church is no longer shown, and is stated to have been demolished in that year. Between 1965 and 1979 the remaining houses and post-War ‘prefabs’ on the site were removed, leaving the edges of King John Street and the surviving walls of Structures 1 and 2; ‘Stepping Stones Farm’ is identified by 1989.

Conclusions

Late medieval Stepney comprised a small village centred on the parish church of St Dunstan and one or two great aristocratic houses such as Worcester House, a 15th-century suburban mansion, with a few very scattered and distant hamlets. From the 16th century onwards ribbon development occurred mainly to the north-west of this centre, along the Mile End Road, which was the main road east out of London, and to the south, along the banks of the River Thames. The population of the area was similarly mixed, and included craftsmen avoiding the commercial restrictions imposed by livery companies in the City of London, traders serving travellers, and people in various industries to do with the Thames and shipping. It is unsurprising therefore that from the early 17th century, in an age when religion was a highly important aspect of life and was always easily identified with political loyalty, Stepney was known for the variety and number of its religious free-thinkers. These were everyone, including Roman Catholics as well as Protestant Dissenters, who did not conform to the precepts of the established Church of England.

The Stepney Meeting, founded in 1644, is the second-oldest permanent Protestant non-conformist congregation in London, and was for many years one of the best known. The principal founder was Henry Burton, a charismatic preacher who had been an Anglican rector and, before the Civil War (1642–50), had suffered severe punishment for his dissident religious views. During the relative toleration extended to such sects in London during the Civil War and ensuing Commonwealth, the congregation met in the house of William Greenhill, in the centre of Stepney. With the Restoration of royal government in 1660, however, such easy conditions ended. During a short period of toleration after the Declaration of Indulgence 1672, non-conformist ministers were licensed, although many others must have stayed underground. It was in this climate that, under its minister, Matthew Mead, Stepney Meeting acquired a large meeting house, built for the purpose in 1674 in the south-west corner of the present site, on what had been the orchard and gardens of Worcester House. This building intentionally looked like a private house, rather than a conventional place of worship, in order not to attract undue attention and provoke official anger. Nevertheless in 1682 the building was raided and all its fittings smashed by soldiers quartered in the Tower of London (VCH 1998). After the political and religious settlement of 1688–9, and the Toleration Act 1689, there were many fewer restrictions on Non-Conformity. Most places of worship certified under this act were described as ‘independent’, while others were Baptist, Presbyterian and Quaker. In the county of Middlesex as a whole, in the late 17th and 18th centuries, there were generally about 40–50 such places, several being in Stepney (VCH 1998). Members of the Stepney Meeting had

use of a burial ground set aside for them near the parish church of St Dunstan (all parishioners having a right of burial in the parish, provided this was done according to the rites of the Church of England).

In the late 18th century Methodism developed: thousands gathered to hear the celebrated preacher, John Wesley, and to sing hymns, and ‘it was stated in 1772 that the Independent minister of Stepney meeting, who was ordained to the church in 1746, “by closely connecting himself with the Methodism has raised that Congregation to an amazing height” ’ (VCH 1969, 146). Methodism became more permanent in character, with a larger number of more exclusive adherents, only after about 1800. Censuses in 1851 and 1902–3 showed that religious non-conformists of every kind formed at least half the population in certain areas of Middlesex, Stepney being second highest in the list (although this picture is complicated by the fact that historically the boundaries of Stepney have fluctuated widely). Places of worship were not the only consequence. In the early 19th century the creation of a college, in the north-west corner of the site, to train Baptist ministers, is of a piece with the setting up of schools in the area, at around the same time, for both local and other children. At least three schools stood along Garden Street, for example, during the 19th century.

By the middle of the 19th century the area of Stepney was becoming very much more built-up and crowded, and conditions more slum-like. Stepney College moved away, leaving the chapel for use by local members of the Plymouth Brethren. It was in this situation that the original meeting house was demolished and a new church building constructed on an altogether grander scale. The new church, faced with ragstone with Bath stone dressings, and boasting a tall spire and a prominent rose window, became known as the ‘Non-Conformist cathedral of east London’.

After near destruction c 1940 by German bombing from the air during the Second World War, the Congregational Church joined with the John Knox Presbyterian Church nearby. The combined church continues at 145 Stepney Way, to the west of the site (contacts.urb2.org.uk).

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References and works consulted

Illustrated London News, 12 Dec 1863

McDonnell, K G T, *Medieval London suburbs*

Morris, D, 2002 *Mile End Old Town 1740–1780: a social history of an early modern London suburb* (East London History Soc)

OS [Ordnance Survey], 1873 1:1,056 (surveyed 1870), *London*, sheet 7.59

OS, 1875 1:2,500 (surveyed 1870), *London*, sheet 37

OS, 1894 1:1,250 (revised), *London*, sheet

OS, 1916 1:2,500 (revised 1914), *London*, sheet 5.12

OS, 1938 1:1,250 (revised), *London*, sheet

OS, [various dates: 1948, 1950, 1954, 1965, 1979, 1989] 1:1,250, sheet TQ 3581 NE

Ridge, T S, 1988 *Mile End Green and Stepney Green Open Space, and a history of Garden Street* [typescript, Tower Hamlets Local History Library]

Rose, M, 1961 *The East End of London*, 78–9

Stepney Meeting House Archives, Tower Hamlets Local History Library [W/SMH/A etc]

VCH [Victoria County History], 1969 *Middlesex*, vol 1, 146–7 (University of London)

VCH, 1998 *Middlesex*, vol 11, 81–3 (University of London)

Appendix 1

Boreholes at Stepping Stones Farm, Stepney Green

These two borehole records have been extracted from Central Section (part) Archaeological Monitoring of Boreholes, Liverpool Street to Canary Wharf, report number 1E0418-C1E00-00001.

Borehole location (locations of Structures 1 and 2 approximate)



	SG15R	SG13	SG11R	SG12
Location	535807.92E 181673.31N 9.55m OD	535787.54E 181608.79N 10.96m OD	535820.02E 181589.61 11.19m OD	535867.45E 181612.80N 10.09m OD
Relationship to standing building remains	c 30m south-east of structure 1	c 10m west of structure 2	c 19m south of structure 2	c 40m east of structure 2
observations	Modern 9.55m – 8.95m OD Post-medieval dumps (+ Tudor/Stuart, edge-rebated brick – see note below) 8.95m – 7.75m OD Reworked brickearth 7.75m – 7.45m OD Natural Gravels 7.45m OD and deeper	Modern 10.96m – 7.86m OD No deeper observations	Modern 11.19m – 9.99m OD Cemented red brick foundation 9.99m – 9.29m OD Natural Gravels 9.29m OD and deeper	Modern 10.09m – 9.34m OD Post-medieval dumps 9.34m – 7.89m OD Natural Gravel 7.89m OD and deeper

Tudor-Stuart style brick

A brick found in Borehole SG15r conforms generally to the dimensions of Statute Bricks of the Charter of 1571. Although bricks were sometimes made of these dimensions before this time, it does suggest that it was made *c* 1570–1700, compatible with the construction of Worcester House in 1596.

Interpretation

Borehole SG15R recorded deposits likely to be associated with the 17th-century Worcester House, *c* 1.2m thick, the top of which was 0.6m below ground level. These may represent demolition debris from the 19th-century or an earlier phase of demolition of the house.

Borehole SG11R encountered what appear to be foundations from the Congregationalist church, *c* 0.7m thick, the top of which was 1.2m below ground level. Note that this level is *c* 0.5m *higher* than the ground levels to the north at SG15R and SG12.