

Archaeological Desk-Based Assessment

On behalf of

Elysium Garden (East London) Ltd

Concerning

Land adjoining Federation of Synagogues Cemetery

Upminster Road, Rainham,

Essex RM13 9RY

February 2019



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Contents:

1	Non-Technical Summary.....	1
2	Introduction.....	2
3	Methodology	3
	3.1 Aims and Objectives	3
	3.2 Criteria for Assessment of Potential and Importance of Heritage Assets.....	3
	3.3 Consultation of Archaeological Records.....	4
4	Site Description.....	5
	4.1 Site Location	5
	4.2 Designated Heritage Assets.....	5
	4.3 Geology & Topography.....	5
5	Cultural Heritage Features Gazetteer & Map.....	6
6	Archaeological Assessment	8
	6.1 Prehistoric (800,000 BC – AD 43)	8
	6.2 Romano-British (AD 43 – 410).....	9
	6.3 Medieval.....	10
	6.4 Post-Medieval.....	10
7	Proposals	12
8	Archaeological survival & impact of proposals	16
9	Conclusions & Recommendations.....	17
10	Copyright	18
11	Bibliography.....	18
12	Cartography.....	19
13	Appendix 1: Historic Maps.....	20

1 Non-Technical Summary

This Archaeological Desk Based Assessment (ADBA) assesses the impact of the proposed plans for the continued burial ground use at the Federation of Synagogues Cemetery, with new chapel, gate house, car park, access roads, burial plots/ chambers, memorial wall, footpaths and landscaping.

Note: within the limitations posed by dealing with historical material and maps, the information in this document is, to the best knowledge of the author and Border Archaeology, correct at the time of writing. Further investigation, more information about the nature of the present buildings and/or more detailed proposals for development or updated plans may require changes to the document. Proposed plans referenced in this document were received 05/02/2019.

The site lies in an Archaeological Priority Area as designated by Havering Borough Council, which is deemed as having a high potential for prehistoric and palaeoenvironmental deposits.

The site has a high potential to contain remains dating to the prehistoric and Roman period. There have been a number of significant features and finds dating to both periods within the study area which indicates a relatively high level of activity within the area. Further to which, the site contains a set of rectilinear crop marks in the south-eastern extent, which it has been suggested, follows a similar layout to that of a standard Roman villa.

The site has a moderate potential to contain remains dating to the medieval period. There have been a number of medieval features recorded within the study area, as well as a 'lost' manor that is thought to have been in the vicinity of the site. However, there is nothing to suggest that a structure of this description exists within the boundaries of the site.

There is a low potential for remains dating to the post-medieval period. During this period the site remained undeveloped and lay in open fields.

It is recommended that further investigation of the rectilinear cropmarks takes place in order to establish their nature and extent. This could take the form of a geophysical survey or targeted trial trenching of the area.

Considering the high potential for archaeological survival within the site and the level of prehistoric and Romano-British activity that has been recorded in the area, and the fact the site is within an Archaeological Priority Area, it is likely that further archaeological investigatory work will be required across the site. It is recommended that a programme of pre-determination fieldwork take place to establish the likely nature and extent of archaeological survival. This may lead to targeted or open area excavation, or a watching brief during initial groundworks.

2 Introduction

Border Archaeology has been commissioned by Elysium Garden (East London) Ltd to carry out an ADBA regarding the proposed building works at land adjoining Federation of Synagogues Cemetery, Upminster Road North, Rainham, Essex RM13 9RY. The scheme comprises the development of a new section of cemetery, complete with a new chapel, gate house, car park, access roads, burial plots/ chambers, memorial wall, footpaths and landscaping.

This ADBA assesses the impact of the proposed works on buried heritage assets (archaeological remains). It forms an initial stage of investigation of the area of proposed development (hereafter referred to as the 'site') and may be required in relation to the planning process in order that the local planning authority (LPA) can formulate an appropriate response in the light of the impact upon any known or potential buried heritage assets.

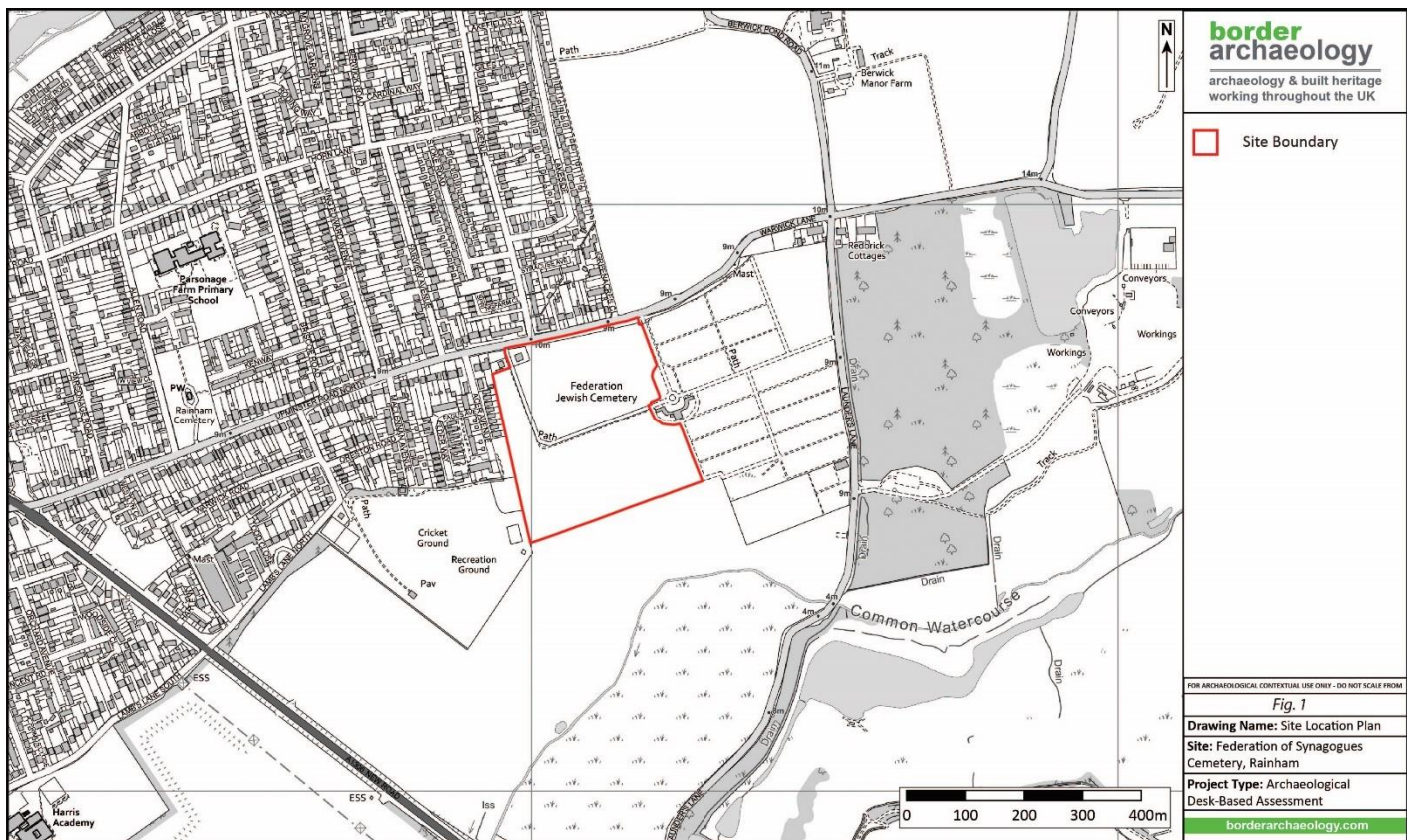


Fig 1: Site location plan

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3 Methodology

3.1 Aims and Objectives

This ADDBA seeks to identify any known or potential archaeological and built-heritage assets (both designated and undesignated) in the vicinity of the specific study area and to establish the importance of these archaeological and built heritage assets (including an assessment of their character, extent and quality) within a local, regional and national context.

3.2 Criteria for Assessment of Potential and Importance of Heritage Assets

- Potential

This assessment contains a record of the known and potential archaeological and built-heritage assets in the vicinity of the proposed scheme. The potential for encountering a particular resource in the vicinity of the site has been assessed according to the following scale:

Low – Very unlikely to be encountered.

Moderate – Possibility that features may be encountered in the vicinity of the site.

High – Remains highly likely to survive in the vicinity of the site.

- Importance (Value)

The criteria used to determine the importance of archaeological and built heritage assets in the vicinity of the proposed scheme (*Table 1*) has been informed by guidelines for assessing cultural heritage assets contained in the *Design Manual for Roads and Bridges Vol. 11 Section 3 part 2* (Highways Agency 2009). BA is also fully cognisant of general guidelines on the assessment of heritage assets contained in the *National Planning Policy Framework, Planning Guidance Section 16* ('Conserving and Enhancing the Historic Environment') and relevant local planning policy guidance contained in the London Borough of Havering Core Strategy and Development Control Policies Development Plan Document (adopted 2008) (https://www.havering.gov.uk/download/downloads/id/1632/core_strategy_development_control.pdf, p. 163, accessed 12/02/2019) and the London Borough of Havering Heritage Supplementary Planning Document (adopted 2011) (https://www.havering.gov.uk/download/downloads/id/117/heritage_supplementary_planning_document.pdf, Chpt 5, accessed 12/02/2019).

Table 1: Factors for assessing the importance of archaeological and built heritage assets

Very High	World Heritage Sites (including nominated sites). Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives.
High	Scheduled Monuments (including proposed sites). Undesignated assets of schedulable quality and importance. Assets that can contribute significantly to acknowledged national research objectives.
Medium	Designated or undesignated assets that contribute to regional research objectives.
Low	Designated and undesignated assets of local importance. Assets compromised by poor preservation and/or poor survival of contextual associations. Assets of limited value, but with potential to contribute to local research objectives.
Negligible	Assets with very little or no surviving archaeological interest.
Unknown	The importance of the resource has not been ascertained.

3.3 Consultation of Archaeological Records

In order to understand the full archaeological and historical context of the site, information was collected on the known cultural heritage features within a 500m study area around the site, the results of which are shown on a Cultural Heritage Features Map (see Section 5, *fig. 2*). These show the location of known cultural heritage features (including SAMs, archaeological events and monuments) within the study area, which have been assigned a unique cultural heritage reference number (**BA 1,2,3**, etc.). These are listed in the associated gazetteer.

The research carried out for this ADBA consists of the following elements:

- Greater London Historic Environment Record (GLHER) - this includes information from past investigations, find spots and documentary and cartographic sources.
- Historic England – information on statutory designations including SAMs, registered parks and gardens and listed buildings along with identified Heritage at Risk.
- The National Record of the Historic Environment database (<http://pastscape.org.uk>)
- British Geological Survey (BGS) – solid and drift geology digital map; BGS geological borehole record data.
- Internet sources, including LPA local plan and information on conservation areas, archaeological priority areas and locally listed buildings.
- Google Earth historical aerial photographs.

4 Site Description

4.1 Site Location

The site lies immediately south of the Upminster Road North, to the west of Acer Avenue. To the east lies the current Rainham Jewish Cemetery, with an open field to the south. The site lies in the historic parish of Rainham before being absorbed into the administration of the London Borough of Havering.

The site lies 1km south-east of the River Ingrebourne, and 3.8km north-east of the modern bank of the River Thames. Prior to reclamation of the Thames floodplain, the area would have been a braided channel across a broad floodplain. The edge of the floodplain, defined by alluvium on the BGS mapping, lies 1.5km south-west of the site. Ground levels from bench marks taken along Upminster Road North 280m north-west of the site and 120m north-east of the site are recorded at 9m Ordnance Datum (OD).

4.2 Designated Heritage Assets

The site lies in an Archaeological Priority Area as designated by Havering Borough Council and is listed as having potential for prehistoric deposits beneath alluvial deposits.

The site does not contain any designated (protected) heritage assets, such as scheduled monuments, listed buildings or registered parks and gardens. The site does not lie in a Conservation Area.

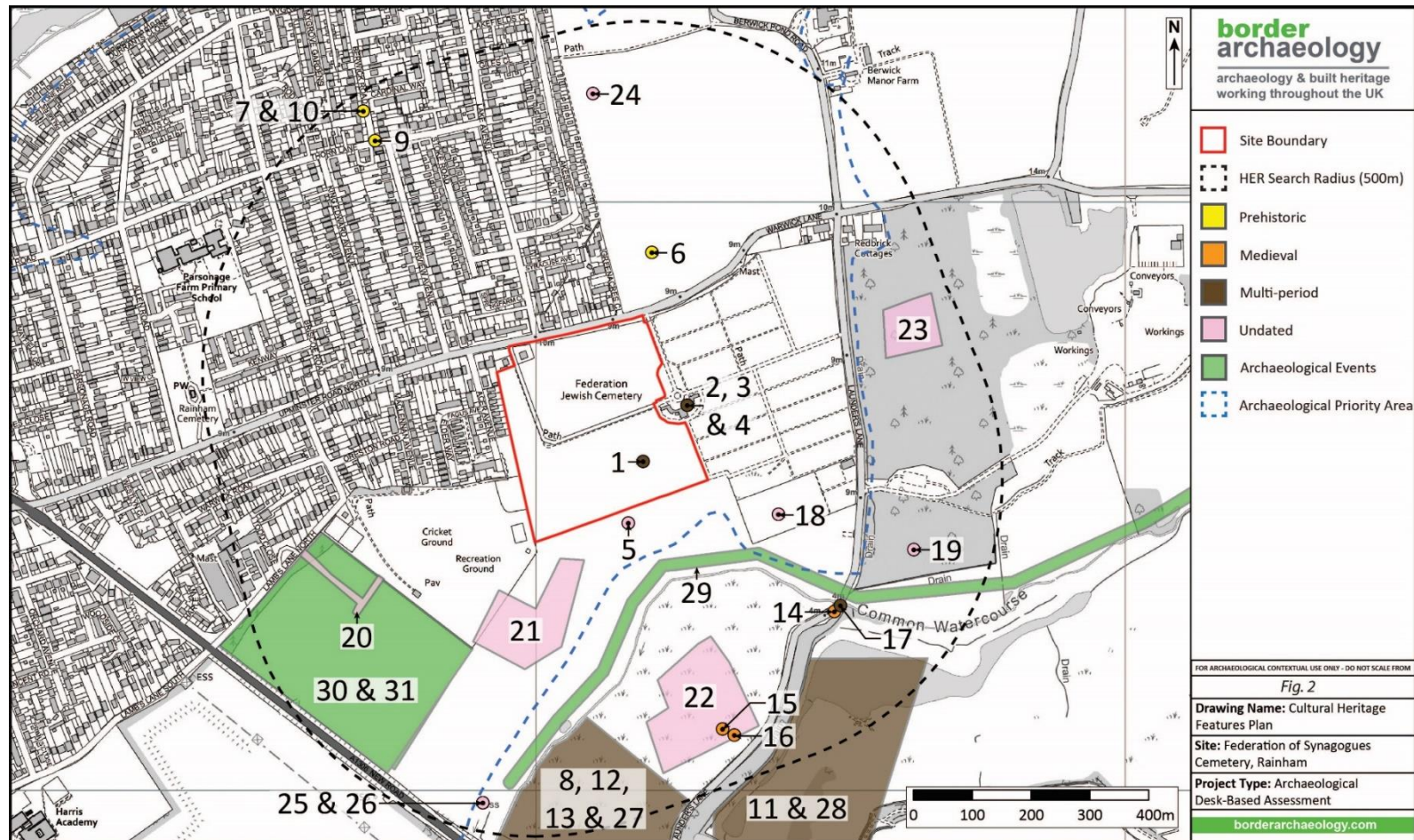
4.3 Geology & Topography

The BGS digital solid and drift geology data shows that the site lies on the gravels of the Taplow Terrace, from the Middle Thames Valley. The Taplow Gravel terrace is the second youngest of the Thames Terraces in East London and typically comprises sand and gravel with lenses of silt, clay or peat. It would have been high and well drained ground and suitable for settlement. The alluvial floodplain of the River Thames extended 1.5km south-west of the site.

Peat deposits have been recorded in the area to the south of the site and are significant as historically they formed in wetland regions, providing favourable conditions for organic preservation. Peat deposits can provide valuable palaeoenvironmental data in the form of pollen, floral and faunal remains and indicate ancient land surfaces.

There is currently no geotechnical data available for within the site however boreholes taken 150m to the south/south-west of the site record between 0.7 - 0.9m of undated made ground overlying River Terrace gravels. One borehole approximately 250m south-west of the site recorded peat at 0.9m below ground level (mbgl).

5 Cultural Heritage Features Gazetteer & Map



#	GLHER No	Name	Date	NGR
1	MLO109188	Series of Rectilinear Cropmarks	Neo-RB	TQ 5418 8256
2	060069/00/00	Findspot: Isolated Fragments of BA Pottery	Bronze Age	TQ 5425 8265
3	060070/00/00	Findspot: Isolated Finds of IA/RB Pottery, Animal Bones & Building Material	IA/RB	TQ 5425 8265
4	060071/00/00	Medieval Occupation Evidence, Launderers Lane	Medieval	TQ 5425 8265
5	060073/00/00	Extensive Cropmark Site Showing Ditches & Part of a Rectilinear Enclosure	Undated	TQ 5415 8245
6	060078/00/00	Ring Ditch	Prehistoric	TQ 5419 8291
7	060604/00/00	Findspot: Cores, Axes & Flakes	Palaeolithic	TQ 5370 8315
8	MLO54022	Early Neolithic Ring Ditch	Neolithic	TQ 5409 8191
9	060021/00/00	Findspot: Oval Flint Scraper	Neolithic	TQ 5372 8310
10	060026/00/00	Neolithic Occupation Site	Neolithic	TQ 5370 8315
11	MLO99049	Late Bronze Age Cemetery & Iron Age - late Romano-British Occupation	BA-RB	TQ 5448 8205
12	MLO23662	Pit containing Late Iron Age & Romano-British Pottery	IA/RB	TQ 5409 8191
13	MLO7224	Medieval Rectangular Enclosure, Pit & Post Holes	Medieval	TQ 5409 8191
14	060068/00/00	Findspot: Medieval Cooking Pot Sherd	Medieval	TQ 5450 8230
15	060392/00/00	Manor of Launderers	Medieval	TQ 5431 8210
16	061028/00/00	Les Launderers, Medieval Farm/Wood	Medieval	TQ 5433 8209
17	060386/00/00	Launderers Bridge	Med./PM	TQ 5451 8231
18	MLO100575	Oval Cropmark Enclosure	Undated	TQ 5440 8246
19	MLO100576	Linear Cropmarks	Undated	TQ 5464 8241
20	MLO100591	Linear Cropmarks	Undated	TQ 5366 8235
21	MLO100592	Linear Cropmarks	Undated	TQ 5398 8230
22	MLO100593	Ditch/Enclosure Cropmarks	Undated	TQ 5428 8214
23	MLO100597	Possible Double Ditched Enclosure Cropmarks	Undated	TQ 5463 8279
24	060403/00/00	Cropmark of Enclosure & Possible Field System	Undated	TQ 5409 8318
25	062122/00/00	Water Channel	Undated	TQ 5355 8169
26	062123/00/00	Peat	Undated	TQ 5355 8169
27	ELO8464	Excavation: Great Arnold's Field, Launderers Lane	1963	TQ 5409 8191
28	ELO4378	Excavation: Moor Hall Farm, Launderers Lane	1977-1979	TQ 5448 8205
29	ELO1236	Fieldwalking Survey: Horndon-Barking Natural Gas Transmission Pipeline	1992	TQ 5507 8274
30	ELO19033	Excavation: Spring Farm, New Road	2007	TQ 5367 8223
31	ELO10346	Excavation: Spring Farm, Lambs Lane North	2007-2008	TQ 5368 8222

6 Archaeological Assessment

There have been a significant number of past archaeological investigations dated to the prehistoric and Romano-British period within the study area (*fig 2*, see Section 5) and in close vicinity to the site, and as such the archaeology of the area is relatively well known. The area was also the subject of a study that assessed six multi-period sites in the Havering and Upminster area which revealed extensive Mesolithic, Early Neolithic, Iron Age and Romano-British activity (MOLA 2013), namely at Moor Hall Farm (**28**), 500m south-east of the site.

In the south-eastern extent of the site are a set of rectilinear cropmarks (**1**), identified from Google Earth satellites and recorded on the GLHER that have yet to be archaeologically investigated.

6.1 Prehistoric (800,000 BC – AD 43)

The Lower (800,000 – 250,000 BC) and Middle (250,000 – 40,000 BC) Palaeolithic saw alternating warm and cold phases and intermittent, seasonal occupation. During the Upper Palaeolithic (40,000 – 10,000 BC), after the last glacial maximum, and in particular after around 13,000 BC, further climate warming took place and the environment changed from steppe-tundra to birch and pine woodland. It is probably at this time that England saw continuous occupation. Erosion has removed much of the Palaeolithic land surfaces and finds are typically residual.

The Mesolithic hunter-gatherer communities of the postglacial period (10,000 – 4,000 BC) inhabited a still largely wooded environment. The river valleys and coast would have been favoured in providing a predictable source of food (from hunting and fishing) and water, as well as a means of transport and communication. Evidence of activity is characterised by flint tools rather than structural remains.

The Neolithic (4000 – 2000 BC), Bronze Age (2000 – 6000 BC) and Iron Age (600 BC – AD 43) are traditionally seen as the time of technological change, settled communities and the construction of communal monuments. Farming was established and forests cleared for cultivation. An expanding population put pressure on available resources and necessitated the utilisation of previously marginal land. Approximately 500m to the south of the site an archaeological rescue excavation in the 1960s (**8**, **27**) recorded a substantial Neolithic ring ditch with an internal diameter of 15.3m and up to 2.1m in width. The ditch contained Neolithic pottery including Mildenhall style bowls and worked flint. A central pit was also discovered which contained later Neolithic pottery sherds. A Neolithic axe was also recovered. The GLHER also records another ring ditch (**6**), approximately 240m north-east of the site as observed in aerial photographs of the area. Burnt flint and cores found 350m south-east of the site during pipe laying (**29**) suggest Neolithic and Bronze Age activity close to the site.

Excavations carried out in 1977 – 79 at Moor Hall Farm/ Launder's Lane (**11** & **28**), 500m south-east of the site, revealed further late Neolithic activity as well as a late Bronze Age and early Iron Age cemetery site containing ten cremation burials. The burials were found in groups on level ground on the top of a small hill. Most of the pots contained grave goods, and some pots appeared to have been placed upside down. A hut circle was also recorded and dated by pottery to the Late Bronze Age. Further hut circles were dated to the Iron Age, and part of an Iron

Age farmstead was recorded which comprised of huts, wells and pits, storage pits, penannular gullies and post holes as well as roundhouses containing burnt daub deposits. Iron Age pottery assemblages were also recorded. During drainage work construction in 1965 another Neolithic occupation site (10) was discovered, 470m to the north-west of the site, which contained artefacts dating from the Palaeolithic and Neolithic periods. Findspots of axes, cores and flint scrapers (7) and an oval flint scraper (9) were also found 470m to the north-west of the site in close proximity to the Neolithic occupation site (10).

Bronze and Iron Age (2 & 3) pottery was found immediately to the east of the site during grave digging for the existing cemetery, as well as an 'urn' fragment which may represent funeral and settlement activity. Information on the GLHER (3) suggests the cemetery may have been the site for a large Iron Age farmstead, with burials and a complete flagon also recovered.

The discovery of two Iron Age cremation pits at Spring Farm (31), 500m south-west of the site suggests multi-period occupation. One cremation contained a complete vessel the other vessel fragments, and an Iron Age pit and posthole were also recorded.

6.2 Romano-British (AD 43 – 410)

After the Roman foundation of Colchester (*Camulodunum*) and London (*Londinium*) in the mid first century AD, a network of settlements and roads was established in the Thames Valley. During the 400-year Roman period, London became Britain's major port and commercial and administrative capital. Settlement and land use in the general area would have been strongly influenced by its growth and development by the 2nd century AD. Small nucleated settlements and an organised system of larger villa estates typically located along the major roads, acted as both markets and as producers supplying the city, particularly with agricultural produce (Museum of London 2000, 150). The prosperity of these settlements appears to have followed the general socio-economic trends that characterise the Roman period; prosperity in the early 2nd century followed by a general decline in the late 2nd to early 3rd century and a brief revival in the 4th century (*ibid.*, 151).

The site is located 21km due east of the Roman City of *Londinium* (London). The London to Colchester Roman road, Ermine Street, is projected to run 6.7km north-west of the site continuing east towards Chelmsford along the line of London Road/Main Road (Margary 1973).

The site contains, in its south-eastern quarter, a set of rectilinear crop marks (1), identified on Google Earth and recorded in the GLHER. It has been suggested that they represent a possible Roman Villa, with a winged form, legible rooms and a walled farmyard to the north. Other interpretations have included a prehistoric or Roman trackway with accompanying enclosure ditches. A Romano-British farm/settlement was recorded during excavations at Moor Hall Farm along Launder's Lane (28), 500m south-east of the site, evidencing a change in field systems and agricultural activity taking place around 200 AD. Roman pottery sherds were also found at Spring's Farm (30), 500m south-west of the site.

6.3 Medieval

Following the withdrawal of the Roman army from England in the early 5th century AD the whole country fell into an extended period of socio-economic decline. In the 9th and 10th centuries, the Saxon Minster system began to be replaced by local parochial organisation, with formal areas of land centred on nucleated settlements served by a parish church.

The area of Rainham lay approximately 13km to the east of the River Lea, which formed the boundary with Mercia. Essex was conquered by the Danes in the 9th century and the River Lea was adopted as the boundary of the Danelaw following the settlement between Alfred the Great and Guthrum. The land to the east of this was subsequently reintegrated although certain Danish customs and laws remained in place in the former Danelaw areas.

Havering lay within the Hundred (a large early administrative unit) of Chafford, and settlement during this period comprised villages and farmsteads along the Thames and its tributaries. It is thought that farming was less intensive during this period than in the previous Roman period. By 604 AD it is documented that the area was part of the kingdom of East Saxons (VCH Essex, 7).

It has been suggested that the Barking and Havering area may have originally been one large Middle Saxon royal estate possibly run by Havering manor (Rippon 1996). In the late 7th century this large royal estate began to subdivide and slowly turned into a rural landscape with settlement becoming more densely populated with land being reclaimed from the marshes to use for arable and agriculture.

The multi-period site at Great Arnold's Field, Launder's Lane (**27**), 500m south-east of the site recorded medieval features, with a pottery assemblage dating to the 11th/12th centuries and medieval rectilinear enclosures. Medieval activity has also been recorded at Spring Farm (**30**) 500m south-west of the site, that included an enclosure and several ditches. There is only one findspot recorded on the GLHER for the medieval period (**14**) which was found at Launder's Lane, 500m south-east of the site consisting of a cooking pot sherd with finger indent decoration, and was recorded as being found by a stream crossing of Launder's Lane 'near a henge'.

6.4 Post-Medieval

During the early part of this period the site lay within open fields to the south of the main road. Chapman & Andre's 1777 map of Essex (*Fig 3; Appendix 1*) shows the site at this time to be undeveloped and in an open field still. Much of the surrounding area is also open farmland interspersed with farms or larger halls or manors. To the south-west of the site it is possible to see the edges of Rainham, Wenington (Wennington) and Averley Marshes, which at this time are still very much intertidal. Moor Hall can just be seen to the south-east of the site, and it is possible to see a small bridge along Launder's Lane that crosses the Common Watercourse.

The 1799 Ordnance Surveyors map of Purfleet (*Fig 4; Appendix 1*) shows the area of the site expanded, so it is possible to see Berwick Ponds to the north, and the Common Watercourse that runs east – west to the south of the site. It is possible to see from this map that the area is mainly used for farmland, although an expanse of land to the south of the site is marked as marshland, especially that which lines either side of the watercourse. To the

west it is possible to see the settlement of Rainham which features buildings along either side of the main Upminster Road.

The 1839 Tithe map of Rainham (*Fig 5; Appendix 1*) shows the site to be completely undeveloped and in an area of open field. The plots of land can be seen divided up into their various apportionments, but it is difficult to see the large houses and manors that were depicted on the earlier 1777 map. Along the southern boundary of the site there is a small plot with what appears to be a structure within it, though it is difficult to tell from the scale of the map any further detail.

The First Edition 6" Ordnance Survey Map of 1872 & 1875 (*Fig 6; Appendix 1*) still shows the site as open undeveloped field, with what appears to be a drainage ditch crossing the south-western corner. The land surrounding the site is open and undeveloped, with Ayletts 'Elliot's' farm to the east. It is clearer to see now that the structure seen along the southern boundary of the site in the previous Tithe map is actually two small houses called 'Spring Cottages'. Launder's Lane can be seen running in a north-south alignment to the east of the site, and to the south of the site it is possible to make out a small water course running east – west through the fields.

The Second Edition 25" Ordnance Survey Map of 1897 (not reproduced) shows no changes to the site or immediate surrounding area, with Spring Cottages still evident along the southern boundary of the site. The watercourse to the south of the site has some area marked down as marshland, but otherwise the area is open fields. The Third Edition 25" Ordnance Survey Map of 1920 (not reproduced) also shows no further changes to the site.

The Fourth Edition 25" Ordnance Survey Map of 1947 (*Fig 7; Appendix 1*) shows a much greater degree of change to the surrounding area, and on a smaller scale for within the site. By this time the site and the land to the east has been apportioned for the 'Jew's Cemetery' with the first plots laid out to the southwest of the site. There is now a central road leading to an oval central space from which the four corners of the cemetery are to expand out from. The area of the site itself has at this time, only an 'L'-shaped road allowing access from the north-west corner of the site from the Upminster Road to the centre of the cemetery plot. There are also two fairly large buildings in the north-western corner of the site. The area around the site, by this time, has developed substantially since the previous Ordnance Survey map and it is no longer a rural landscape, with housing development to the west of the site. The plots for the houses here have large gardens or expanses of land attached to them, and there is now also a recreation ground to the immediate south-west of the site and to the south, 'Spring Cottages' are now a row of five terraces.

Today the site is still undeveloped and aside from further urban development in the wider region, has remained virtually as it was on the 1947 OS map. The Ordnance Survey 1:25000 map of 1959 (not reproduced) shows the site as it is today, although at some point between 1947 and 1959 the row of terraces to the south of the site, depicted in earlier maps as 'Spring Cottages' have been demolished. The current cemetery which is immediately west of the site provides a stark contrast to the undeveloped land to the east. LiDAR 50cm Digital Terrain Model (*Fig 8; Appendix 1*) of the site and surrounding area did not show up any potential features for within the site.

7 Proposals

The proposed scheme comprises the extension of the eastern half of the Federation of Synagogues Cemetery, with the construction of a new chapel, gate house, car park, access roads and burial plots/ chambers.



Fig 9: Masterplan of Federation of Synagogues Cemetery, Rainham (Liz Lake Associates, 09/2018, Fig no. 01 B)

The burial plots will provide space for up to 20,000 burials, and will comprise concrete lined vaults 4.2m deep that will have the capacity to contain up to four coffins horizontally stacked.

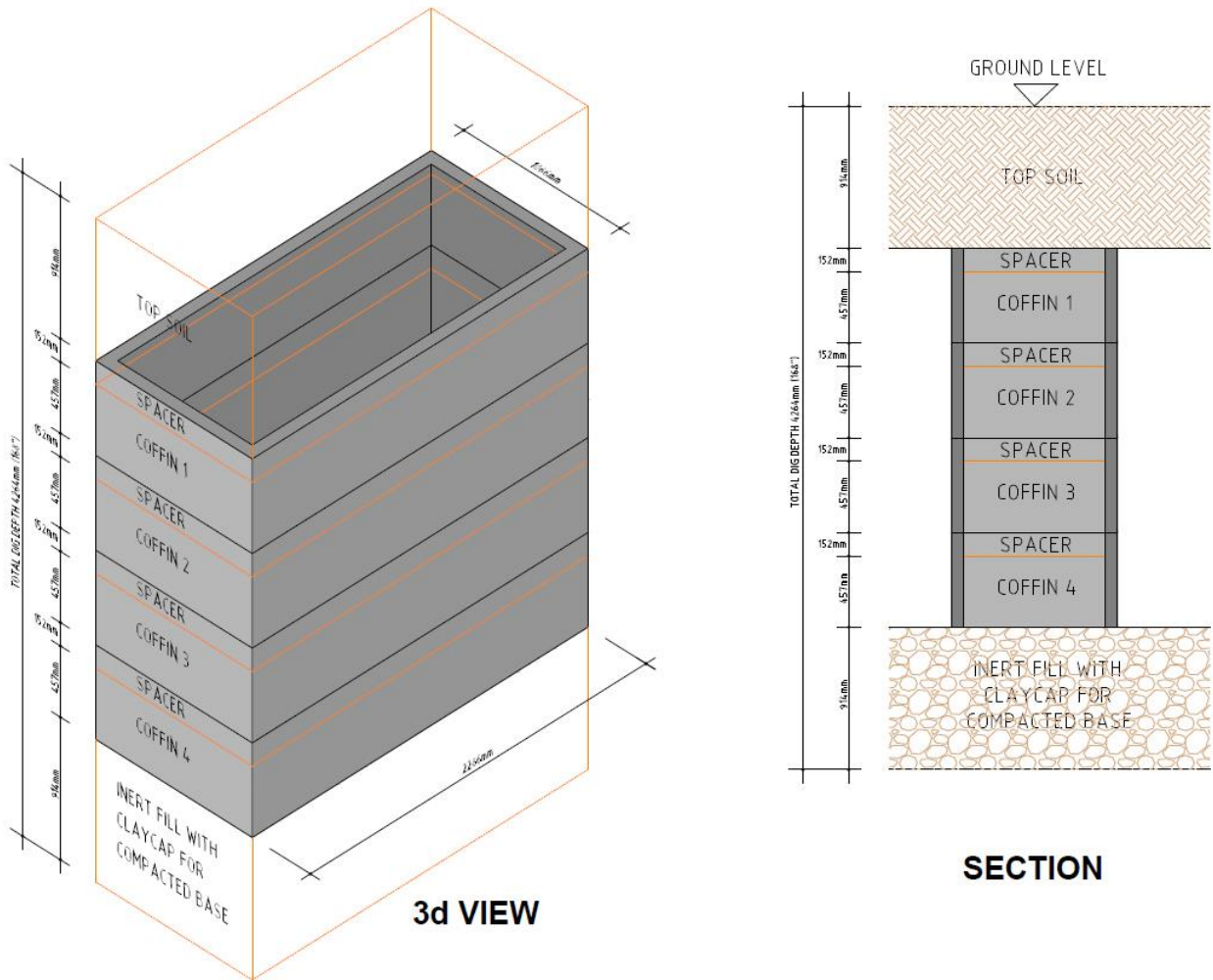
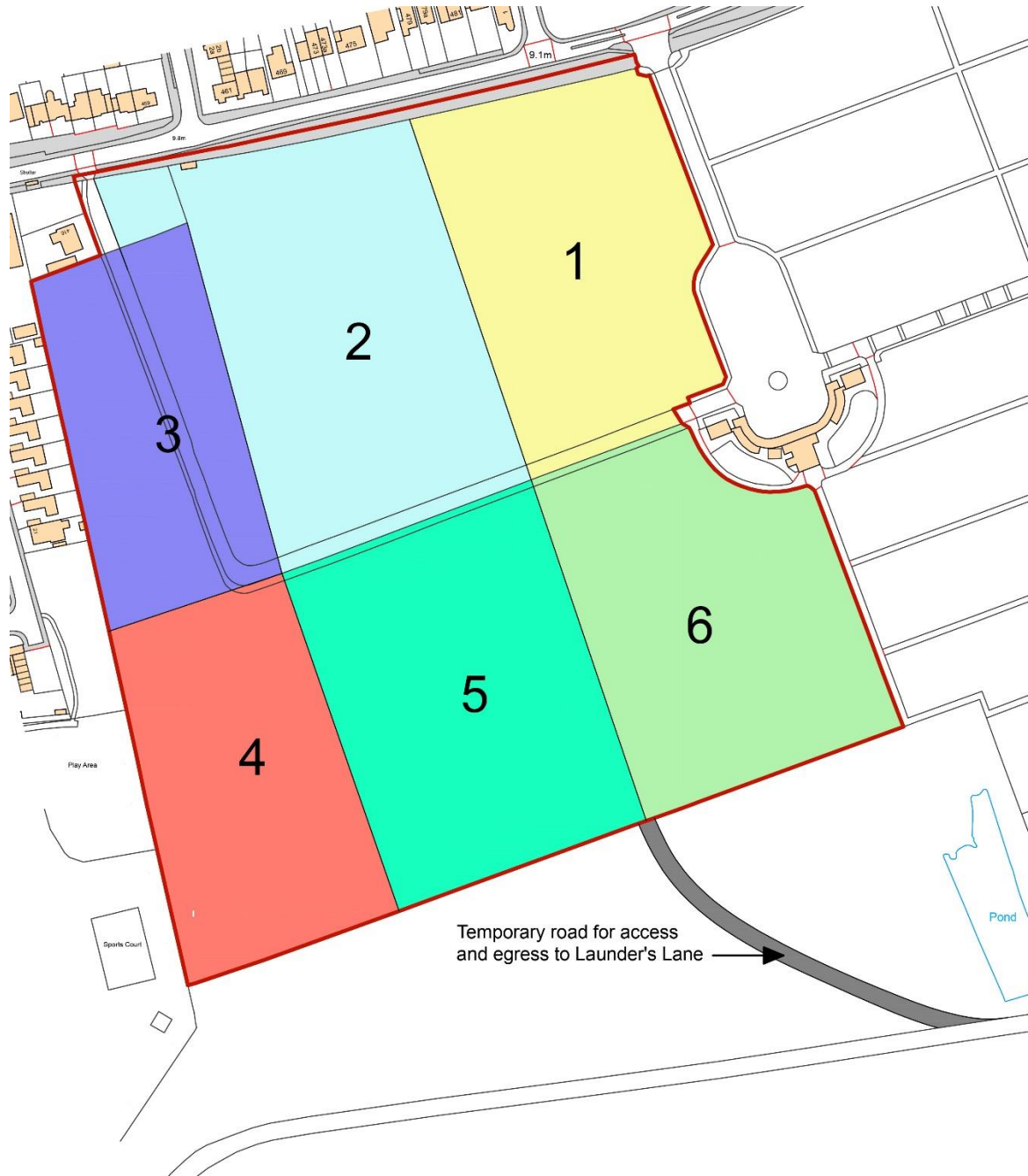


Fig 10: Burial vault section (Loxton Design Ltd, received 13/02/19)

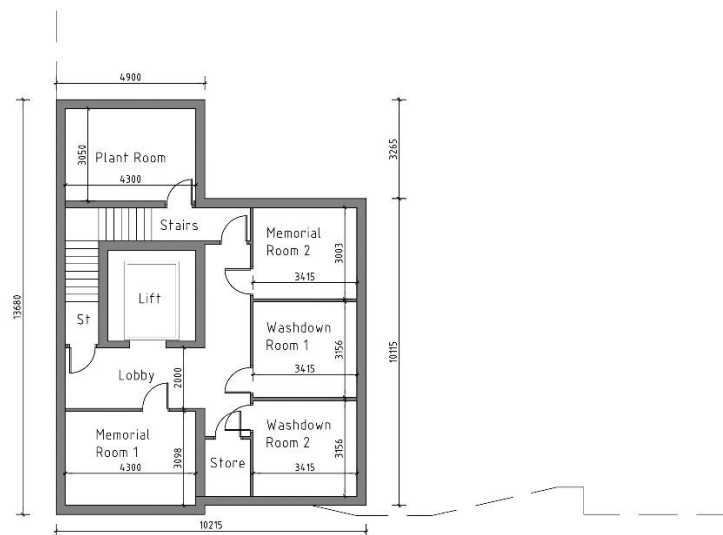
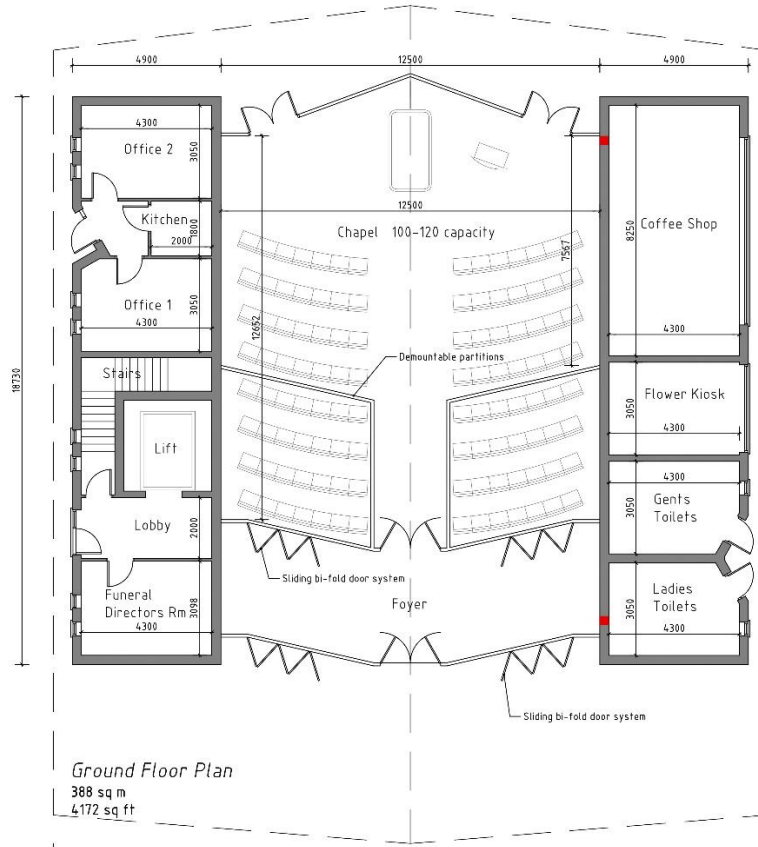
The cemetery has been divided up into zones (as seen on *Fig 11* below). It is proposed that ground level in Zones 1 & 2 will be raised by 1.5m, meaning that the excavation depth within these zones will be 2.7m below the existing ground level. Zones 3, 4, 5 & 6 will have maximum excavation depths of 4.2mbgl.



ZONING OF SITE FOR INSTALLATION OF BURIAL VAULTS

Fig 11: Plan of zoning for vault installation (Loxton Design Ltd, received 13/02/19)

The new Chapel will comprise a basement level that will extend 3.3mbgl, with the lift shaft extending to 3.9mbgl.



Basement Plan
106.80 sq m
1149 sq ft

Fig 12: Proposed chapel floorplans ground floor & basement (Loxton Design Ltd, Dwg. No. 18/408/P08, 09/2018)

8 Archaeological survival & impact of proposals

The following section discusses past impacts on the site which may have comprised archaeological survival, e.g., building foundations, quarrying identified from historic maps and geological data which may reflect the likely depth of deposits.

In accordance with the NPPF 2018, this is followed by a statement on the likely potential and significance of buried heritage assets within the site, derived from current understanding of baseline conditions, past archaeological investigations and professional judgement.

Cartographic evidence shows that the site has never been developed, and has existed as open field or farm land next to an area of reclaimed marshland. Boreholes taken within 150m south of the site show between 0.7 – 0.9m of undated made ground overlying River Terrace gravels, and one borehole 250m south of the site recording peat at 0.9mbgl.

It is therefore considered that archaeological survival for within the site is likely to be **high**.

The potential for remains dating to the prehistoric period within the site is considered to be **high**. There have been extensive archaeological investigations within the study area for the site, revealing multi-period occupation with particular emphasis on the prehistoric period. Further to this, the location of the site on high, well drained gravel terraces on the edge of the Thames floodplain would have made this a favourable location for settlement. Any finds or features dating to this period would be of **moderate** to **high** significance depending upon their nature and extent.

The potential for remains dating to the Roman period within the site is considered to be **high**. The site contains a set of rectilinear crop marks which, it has been suggested, exhibit similarities to the layout of a standard Roman villa. A Romano-British settlement was recorded 500m south-east of the site at Moor Hall Farm, further suggesting Roman activity in this area. Structural remains dating to this period would be considered to be of **high** significance.

There is a **moderate** potential for remains dating to the medieval period within the site. There have been finds and features dated to the medieval period recorded within the vicinity, and it has been suggested that here may be a 'lost' manor in the area, although there is nothing to suggest remains of this sort lie within the boundaries of the site. Remains dating to this period would be considered to be of **high** significance depending upon nature and extent.

There is a **low** potential for remains dating to the post-medieval period to be found within the site. The site has remained undeveloped until the present day, being used for farm land. Any remains dating to this period would likely be agricultural in nature (ditches, field shelters) and would be of **low** significance.

The proposed scheme will require deep excavation across virtually the entire site, with excavated depths ranging from 1.5mbgl (service trenches, landscaping, new road layout) to 4.2mbgl for the deepest burial vaults. Boreholes taken in the vicinity of the site show natural gravels and peat deposits encountered at 0.9mbgl, which indicates

that the proposed development would completely remove any archaeological deposits within the excavated areas, and extend into the underlying natural terrace gravels. The significance of any remains so affected would be reduced to negligible.

9 Conclusions & Recommendations

The site does not contain any designated (protected) heritage assets, such as listed buildings, scheduled monuments or registered parks and gardens. The site does lie in an Archaeological Priority Area, as designated by Havering Borough Council, for potential prehistoric and palaeoenvironmental deposits.

The site has a high potential for remains dating to the prehistoric and Romano-British periods. There is a moderate potential for the medieval period and low potential for post-medieval remains.

With regards to buried heritage assets, owing to the size of the site and scale and depth of the proposed development, as well as the potential for archaeological remains it is anticipated that the LPA will require a programme of archaeological investigation works prior to initial groundworks. Aerial photographs have identified rectilinear crop marks within the south-east area of the site which share similar features to that of a standard layout Roman villa. Historic reports of excavations of the eastern half of the developed cemetery recorded Roman-British pottery which suggests activity in the vicinity.

In order to understand further the nature and extent of the rectilinear crop marks in the south-eastern extent of the site, a geophysical survey of the area or targeted trial trenching is recommended. Depending on the results of the survey and/or the trial trenching, further archaeological work may be required on targeted areas, or as an open area excavation.

Considering the high potential for archaeological survival within the site and the level of prehistoric and Romano-British activity that has been recorded in the area, and the fact the site is within an Archaeological Priority Area, it is likely that further archaeological investigatory work will be required across the site. It is recommended that a programme of pre-determination fieldwork take place to establish likely nature and extent of archaeological survival. This may lead to targeted or open area excavation, or a watching brief during initial groundworks.

10 Copyright

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11 Bibliography

Greater London Historic Environment Record: HER Report and GIS Dataset

National Heritage List for England

Bridgland, D.R., 1994, *The Pleistocene of the Thames*, Quaternary of the Thames, Geological Conservation Review Series, No. 7, Chapman and Hall, London

Margary, I., 1973, *Roman Roads in Britain*. John Baker

MoLAS, 2000, *The Archaeology of Greater London*, London

MoLAS, 2004, *Great Arnold's Field post-excavation assessment*, London

MOLA, 2011, *Assessment of archaeological resource in aggregate areas in the London Borough of Havering*, London

MOLA, 2013, *Archaeological landscapes of east London: six multi-period sites excavated in advance of gravel quarrying in the London Borough of Havering*, London

Rippon, S. 1996, *Essex c 700 – 1066*, in Bedwin (ed), 117 - 28

A History of the County of Essex: Volume 7, ed. W R Powell (London, 1978), British History Online <http://www.british-history.ac.uk/vch/essex/vol7> [accessed 18 February 2019].

12 Cartography

Chapman & Andres 1777 Map of the County of Essex

1799 Ordnance Survey Surveyor's Map of Purfleet

1839 Tithe Map of Rainham

First Edition 6" Ordnance Survey Map of 1872 & 1875

Second Edition 25" Ordnance Survey Map of 1897

Third Edition 25" Ordnance Survey Map of 1920

Fourth Edition 25" Ordnance Survey Map of 1947

LiDAR 50cm Digital Terrain Model

13 Appendix 1: Historic Maps

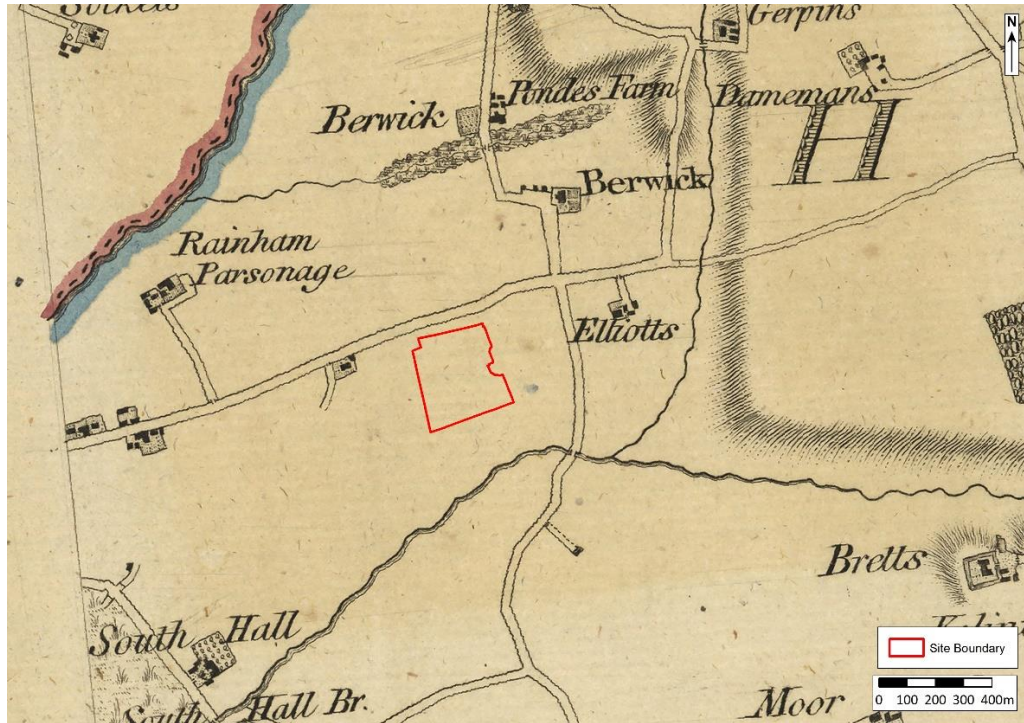


Fig. 3: Chapman & Andres 1777 Map of the County of Essex
(Reproduced by courtesy of the British Library)

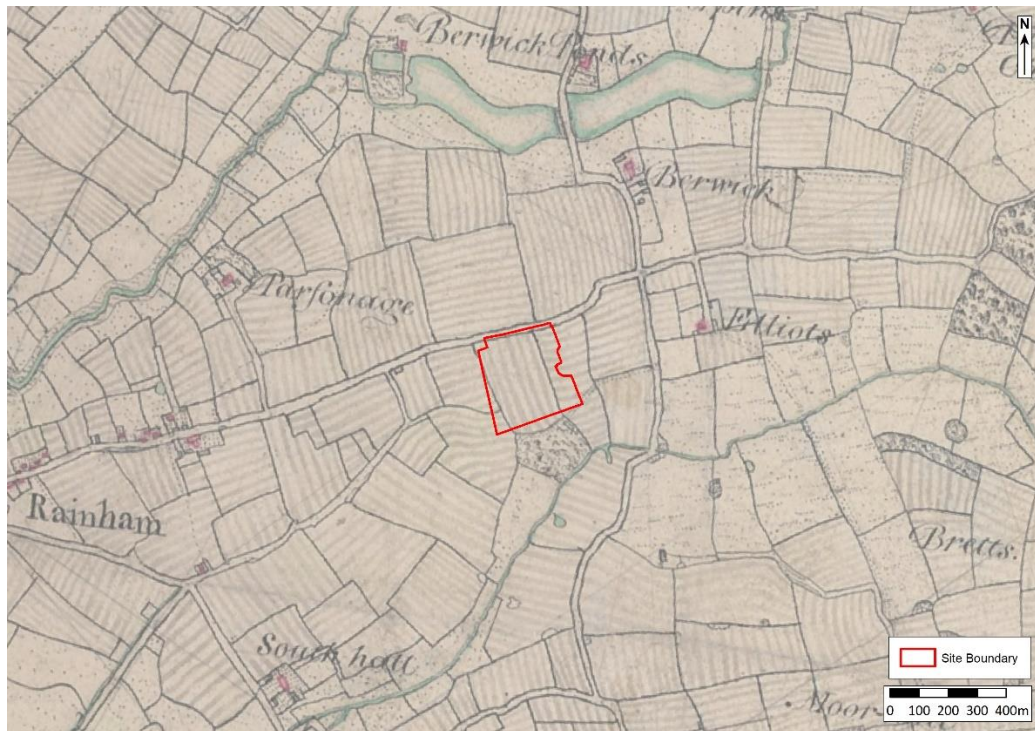
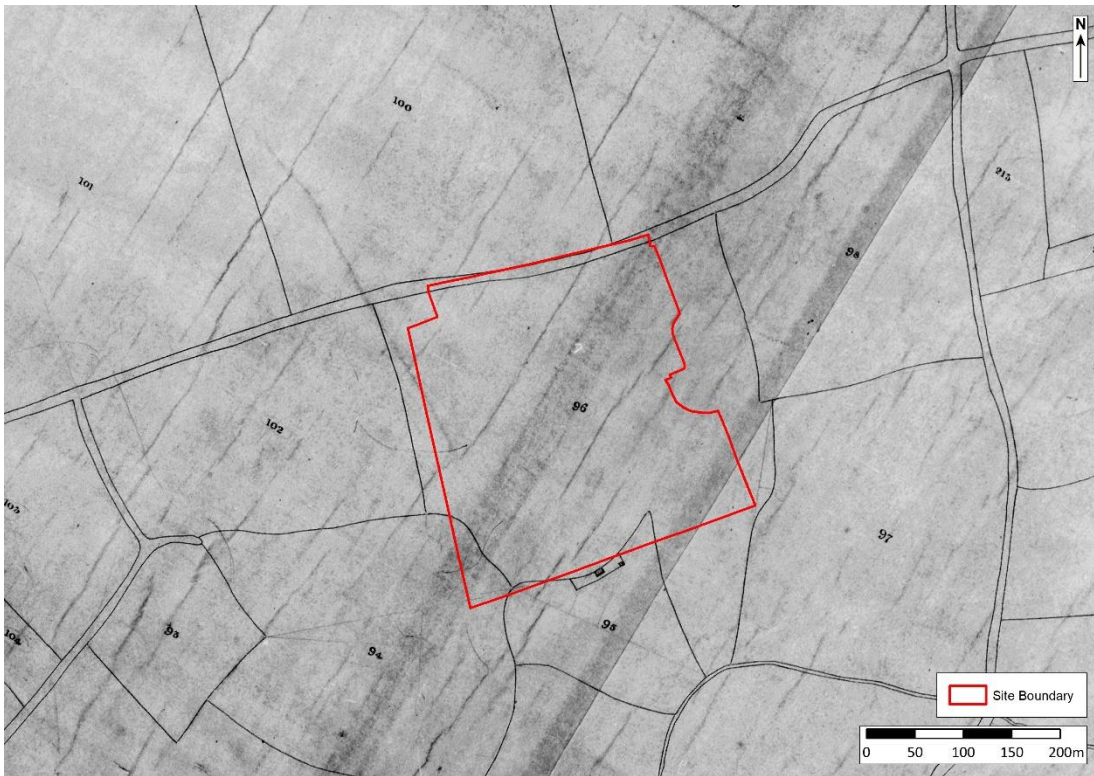
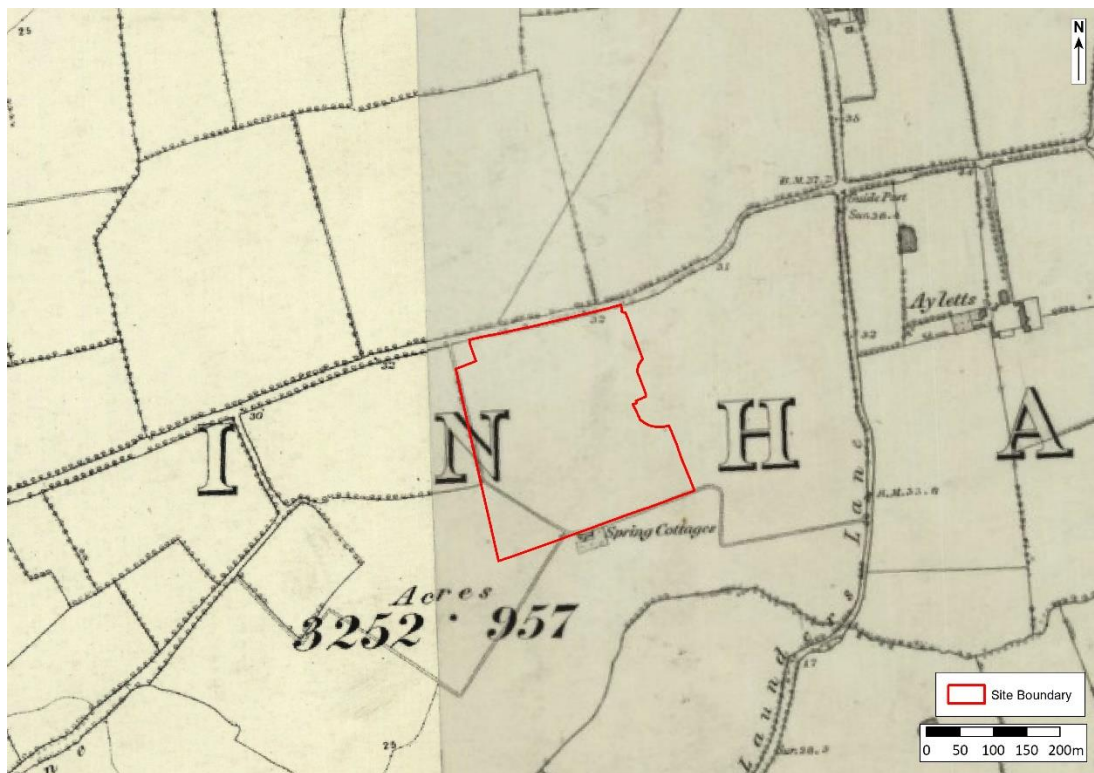


Fig. 4: Ordnance Survey 1799 Surveyor's Map of Purfleet
(Reproduced by courtesy of the National Archives)



*Fig. 5: 1839 Tithe Map of Rainham
(Reproduced by courtesy of the National Archives)*



*Fig. 6: First Edition 6" Ordnance Survey Map of 1872 & 1875
(Reproduced by courtesy of the National Archives)*

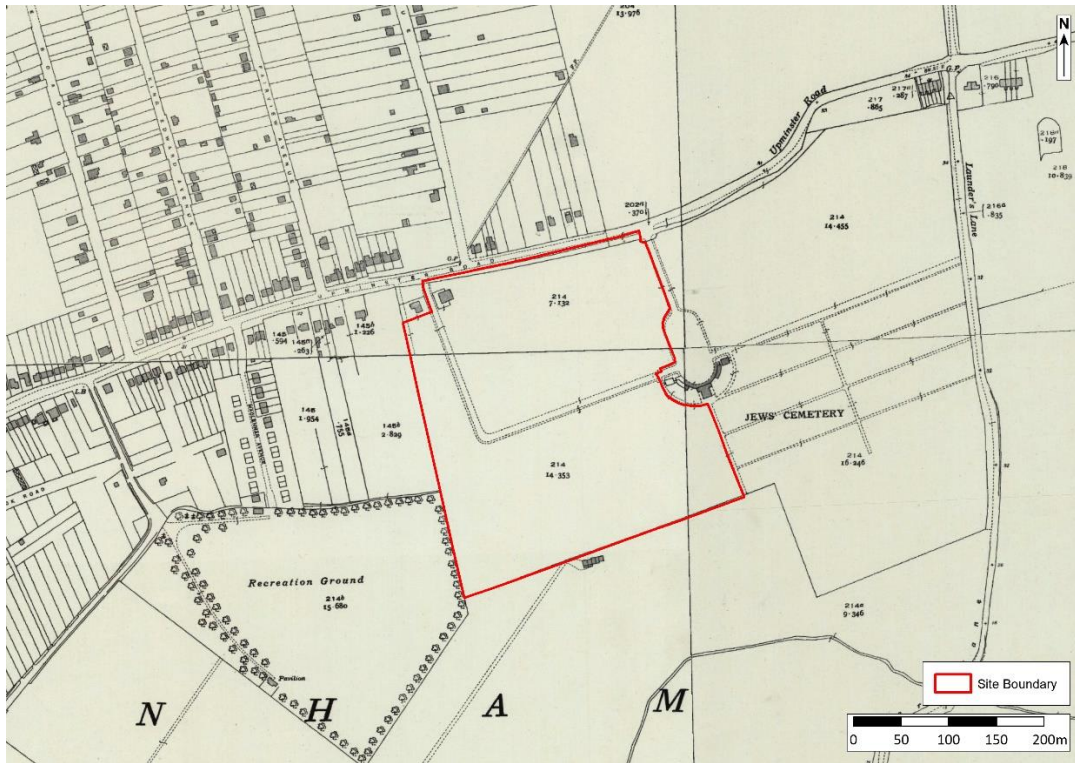


Fig. 7: Fourth Edition 25" Ordnance Survey Map of 1947
(Reproduced courtesy of the British Library)



Fig 8: LiDAR 50cm Digital Terrain Model
(Reproduced courtesy of the Environmental Agency)

Report Title		Report Reference	
Archaeological Desk-Based Assessment: Land adjoining Federation of Synagogues Cemetery, Upminster Road, Rainham, Essex RM13 9RY		BA1905SCR/ADBA	
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