
NORTH PENNINES ARCHAEOLOGY LTD

Client Report No. CP/891/09

**ARCHAEOLOGICAL
DESK-BASED
ASSESSMENT
AT
THAMESMEAD TOWN
FOOTBALL CLUB,
BEXLEY,
LONDON**



**FOR
SAVILLE JONES
CONSULTANTS**

**NGR TQ 479 806 (centred on)
Planning Application Ref:
07/10931/FULM**

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EXECUTIVE SUMMARY

In March 2009, North Pennines Archaeology Ltd were commissioned by Saville Jones Consultants to undertake a desk-based assessment and walkover survey of land at Thamesmead Town Football Club, 30 Bayliss Avenue, Bexley, London, in advance of the proposed redevelopment of the site. The proposed redevelopment is to include the demolition of the existing clubhouse and erection of a new clubhouse, along with a spectator seating area, a new floodlit all-weather pitch, two multi-use games areas, car park and landscaping (Planning Ref: 07/10931/FULM).

The study involved the examination of all pertinent documents and cartographic sources held in Bexley Local Studies and Archive Centre, Bexleyheath, Kent, as well as the consultation of the Greater London Sites and Monuments Record (GLSMR), maintained by English Heritage. The GLSMR is a computerised record of information relating to historic buildings and archaeological sites in the Greater London area including the locations and settings of Scheduled Ancient Monuments, Listed Buildings, Parks and Gardens and other, non-designated archaeological remains.

The research has shown that although there is evidence for human activity in the general area of Bexley from the Palaeolithic Period at Swanscombe, the earliest recorded finds from within a 1km radius of Thamesmead Town Football Club date to the Mesolithic period (c.10000BC to 4000BC).

The potential for Romano-British features surviving sub-surface within the proposed development site is moderate given the discovery of a Roman pottery and features at Summertown Way, to the north of Thamesmead Town Football Club, and the presence of Roman pottery, mortar, tiles and wood found '9ft' below the surface at Crossness, to the north-east of the site.

The potential for early medieval archaeological remains surviving sub-surface within the boundaries of the proposed development area is low given the paucity of finds or sites recorded on the GLSMR, and lack of information gathered from secondary sources consulted during the desk-based assessment. Documentary references to marshland being reclaimed by Lesnes Abbey provide some indication that the ground to the north of the Abbey, which includes the proposed development area, was undeveloped and subject to periodical flooding.

The potential for post-medieval and modern features surviving within the proposed development area is high as shown by cartographic sources. A Signal Butt and linear earthwork are shown located within the proposed development area from the 1860s, along with a tramway close to the periphery, and from the 1930s a Home Guard Gunpowder magazine is also shown within the site, as well as buildings located within 'Haystack Ground'. By the 1980s these features had been removed although there is the potential for foundations to survive sub-surface. None of these features are recorded on the GLSMR. The GLSMR has highlighted that the area of Riverside Golf Course to the north-east of Thamesmead Town Football Club was the site of a landfill, although the date of infill is unknown (thought to be 19th/20th century). Tennis Courts are noted to have existed close to the proposed development area up until the 1980s.

The visual site inspection did not reveal any previously unrecorded archaeological features. The Ridgeway (the line of the Southern Outfall Sewer) is a grassy bank to the south of the football ground and is in use as a footpath; to the north-east is Riverside Golf Course (a former landfill site); the north of the site consists of car parking and residential, and to the west is Crossways Park with footpaths and wooded areas.

EXECUTIVE SUMMARY

The proposed development area at Thamesmead Town Football Club has already been developed with two pitches, clubhouse, spectator stand and car parking. A geotechnical investigation undertaken in 2007 has indicated that made-up ground exists to a depth lower than the intended foundations of the new pavilion so there will be no impact on potential archaeological remains in this area. No works are proposed on the football pitch; therefore any surviving archaeological remains associated with the former signal butt will not be affected by the proposed works.

On the basis of the geotechnical investigation and information provided by Saville Jones Architects regarding the depth to which the intended foundations for the new pavilion are to be excavated, it is not deemed necessary for any further archaeological work to be undertaken prior to the commencement of ground works for the proposed development at Thamesmead Town Football Club.

ACKNOWLEDGEMENTS

North Pennines Archaeology Ltd would like to thank Saville Jones Consultants for commissioning the project.

North Pennines Archaeology Ltd would also like to extend their thanks to staff at the Greater London Sites and Monuments Record for providing the SMR information and staff at Bexley Local Studies and Archive Centre, Bexleyheath, for their assistance.

The desk-based assessment and walkover survey was undertaken by Fiona Wooler. The report was written by and the drawings were produced by Fiona Wooler. The project was managed by Martin Railton, Project Manager for NPA Ltd. The report was edited by Martin Railton.

1 INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 In March 2009 North Pennines Archaeology Ltd were invited by Saville Jones Consultants to undertake an archaeological desk-based assessment of land at Thamesmead Town Football Club, 30 Bayliss Avenue, Bexley, London, in advance of the proposed redevelopment of the site. The proposed redevelopment is to include the demolition of the existing clubhouse and erection of a replacement clubhouse, along with a spectator seating area, a new floodlit all-weather pitch, two multi-use games areas, car park and landscaping (Planning Ref: 07/10931/FULM).
- 1.1.2 Bexley Council have requested that an archaeological desk-based assessment be undertaken of the site, prior to the development taking place, in order to ensure that adequate archaeological records can be made of the site, and to safeguard the heritage interests of the area. North Pennines Archaeology Ltd issued a Written Scheme of Investigation (WSI)¹ setting out the programme of archaeological works which was to include a desk-based assessment and visual site inspection in order to provide information on any potential archaeological remains which may survive on the site, and to assess the likely impact of the proposed development on these remains.
- 1.1.3 It was known that archaeological remains could survive within the site, which would be disturbed by the proposed development. Roman remains have been observed at Summerton Way, to the north of the site. An excavation by the Museum of London Archaeology Service in 1997 revealed a Roman field system and hearth dating to AD250-300. The area has been the focus of industry since the 19th century, and a post-medieval engine house is situated close to the site on Belvedere Road. It is also possible that features relating to the Royal Arsenal may extent this far east.
- 1.1.4 The desk-based assessment comprised a search of both published and unpublished records held by Bexley Local Studies and Archive Centre, Bexleyheath, and the consultation of the Greater London Sites and Monuments Record (GLSMR). The principal objective of this assessment was to undertake sufficient work in order to identify and characterise the archaeological constraints associated with the development area, in order to assess the archaeological and historical potential of the development site.
- 1.1.5 This report sets out the results of the work in the form of a short document outlining the findings, followed by a statement of the archaeological potential of the area, an assessment of the impact of the proposed development, and recommendations for further work.

¹ Railton, M, 2009

1.2 SITE LOCATION

- 1.2.1 The site is located at the south end of Bayliss Avenue, and south of Crossway, on the southwest side of Thamesmead in Greater London, and on the south of the Thames (centred on National Grid Reference TQ 479 806) (Figure 1). The Thamesmead Town Football Club site comprises 3ha of land currently occupied by playing fields and a clubhouse, with Crossway Park to the west, Riverside Golf Course and Driving range to the north-east, a residential area to the north, and Crossness Works to the east. The Eastern Way (A2016) runs to the south of the site. The Ridgeway and Belvedere Road also bound the site to the south-east (Figure 2).

2 METHODOLOGY

2.1 INTRODUCTION

- 2.1.1 North Pennines Archaeology Ltd was commissioned by the client to undertake the desk-based assessment and visual site inspection. All works were consistent with the relevant standard and guidance of the Institute for Archaeologists², and generally accepted best practice.

2.2 DESK-BASED ASSESSMENT

- 2.2.1 The study area consisted of a broad overall history of the site at Thamesmead, which historically was in the county of Kent, with an additional detailed *c.*1km radius search, centred on the proposed development area, which were studied in more depth. The principal sources of information were the Greater London Sites and Monuments Record (GLSMR), historical maps and secondary sources housed at Bexley Local Studies and Archives Centre
- 2.2.2 ***Greater London Sites and Monuments Record (GLSMR):*** the GLSMR was consulted in the first instance. This involved the collection of all available information held within the SMR database within 1km of the site, in order to achieve a full understanding of the nature of the existing resource regarding the geographical, topographical, archaeological and historical context of the site.
- 2.2.3 ***Bexley Local Studies and Archive Centre (BLSAC):*** the BLSAC was consulted in order to study maps and documents relevant to the study area. This included the collection of historic maps, including Tithe and Enclosure, and early Ordnance Survey maps. Early cartographic evidence was also consulted in order to achieve an understanding of the medieval and early post-medieval landscape. Ordnance Survey maps from the 19th and 20th century were also examined to investigate any historical history of the site or relationship with the Royal Arsenal to the west. Published material relating to the locality was also consulted, as well as any relevant newspaper articles.
- 2.2.4 ***Archaeology Data Service (ADS and National Monuments Record (NMR):*** the Archaeology Data Service³ website and English Heritage's National Monuments Record⁴ were consulted for any entries relating to sites or previous archaeological work undertaken outside the 1km buffer zone around the site at Thamesmead in order to enhance and augment the data obtained from a search of the appropriate repositories.
- 2.2.5 The results of the desk-based assessment will be used to inform an assessment of the likely impact of the proposed development on potential archaeological remains

² IfA 2001

³ <http://ads.ahds.ac.uk/> - Accessed 26/03/09

⁴ <http://www.english-heritage.org.uk/server/show/nav.19915> - Accessed 26/03/09

within the Thamesmead Town Football Club site. This will also inform the need for, and scope of, any further archaeological work, or mitigation at the site.

2.3 VISUAL SITE INSPECTION

- 2.3.1 A visual site inspection was undertaken in order to identify any features of potential archaeological interest, including any surviving historic structures or earthworks, and areas of significant disturbance. The principal aim of the visual site inspection was to identify previously unrecorded surface remains within the proposed development area.
- 2.3.2 This information will supplement the results of the desk-based assessment and be used to create a database of archaeological sites within the impact zone of the proposed development.
- 2.3.3 A digital photographic record was made of the proposed development area. A selection of these photographs are included within this report.

2.4 ARCHIVE

- 2.4.1 A full professional archive will be compiled in accordance with the recommendations in *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation*⁵.
- 2.4.2 North Pennines Archaeology Ltd support the **Online Access to the Index of Archaeological Investigations (OASIS)** project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological fieldwork. As a result, details of the results of this study will be made available by North Pennines Archaeology, as a part of this national project under the unique identifier northpen3-57435.
- 2.4.3 One copy of the report will be submitted to the Greater London Sites and Monuments Record, where viewing will available on request.

⁵ Brown, D.H, 2007

3 ASSESSMENT RESULTS

3.1 INTRODUCTION

3.1.1 The assessment results are based on primary documents, most notably maps, and on the secondary sources used in Section 3. The results are presented according to the archive from which they were consulted. There are nine SMR records for the study area, defined as a 1km radius centred on the site. A further three Listed Buildings exist within 1km of the proposed development area. A full list of the sites identified by the assessment is given in the Gazetteer in *Appendix 1*.

3.2 GREATER LONDON SITES AND MONUMENTS RECORD (GLSMR)

3.2.1 **GLSMR:** nine SMR records exist within 1km of the development site; three of prehistoric (Mesolithic *c.* 10000BC to 4001BC) origin, one of Roman origin, four of post-medieval origin (*c.* 1540AD to 1900AD) and one of modern origin (1900-present).

3.2.2 **Listed Buildings:** there are three listed buildings within a 1km radius of the proposed development area at Thamesmead Town Football Club. A full description of each of these buildings is given in *Table 2* in *Appendix 1*, however they all date to the 19th century and relate to the Crossness Pumping Station located to the east, including the Grade I listed Pumping Station itself.

3.2.3 **Scheduled Ancient Monuments:** there are no Scheduled Ancient Monuments within a 1km radius of the proposed development area.

3.2.4 **Conservation Areas:** there are no Conservation Areas within a 1km radius of the proposed development area.

3.2.5 **Previous Archaeological Investigations:** three separate archaeological investigations are recorded in the GLSMR, which have been undertaken within a 1km radius of the proposed development area at Thamesmead Town Football Club. The following table lists this work and the findings:

GLSMR Ref:	Site	Summary Description	Grid Ref	
MLO64189	Slocum Close	Evaluation and excavations undertaken by B McCann, Aug-Sept 1993. Natural sands and gravels were overlain by alternating deposits of peat and alluvium. A preliminary carbon14 date of 5210-4590BC calibrated was obtained from the bottom of the lower peat layer.	Centroid TQ 4711 5059	Peat (Prehistoric – 500000BC to 42AD)
MLO64190		Within the upper layer of peat, a timber feature was partially excavated. It was associated with many small fragments of		Unassigned (Prehistoric – 500000BC to

MLO64191		<p>burnt flint and two areas of charcoal. Its E and W boundaries appear to have been formed by two alluvium filled channels.</p> <p>The E and W ends of a timber feature were formed by two alluvium channels. From the smaller, three fragments of wood, with possible tool marks and spade marks were recovered, the larger channel contained fire-damaged flint pebbles and a number of chestnuts</p>		<p>42AD)</p> <p>Ditch (Prehistoric – 500000BC to 42AD)</p>
MLO67734	Copperfield Road (Voyager's Quay)	<p>A geoarchaeological evaluation was undertaken by the Museum of London Archaeology Service in March 1996. A sequence of interspersed alluvium and peat with carbon14 dates ranging from 4750+-70BP to 3020+-60BP was recorded indicating changes in hydrological conditions from the Middle Neolithic to Late Bronze Age. It probably represents a series of marine transgressions/regressions and there may have been exposed land surfaces above the peat</p>	Centroid TQ 4730 8130	<p>Peat (Bronze Age – 2200BC to 701BC)</p> <p>Peat (Late Neolithic to Early Bronze Age (3000BC to 1501BC)</p> <p>Peat (Neolithic – 4000BC to 2201BC)</p>
MLO71481	Summertown Way, Thamesmead	<p>Excavation undertaken by D Lakin for Museum of London Archaeology Service, June-July 1997. Peats formed the lowest horizon observed. These contained no features or artefacts and were sealed by up to 1m of alluvial deposits. These deposits too were archaeologically sterile.</p>	Centroid TQ 4800 8128	Peat (Prehistoric – 500000BC to 42AD)
MLO71482		<p>A number of ditches were recorded that appeared to be laid out on a linear grid orientated roughly north-south. The ditches were quite broad and relatively shallow with U shaped profiles. Associated with the ditch system were three shallow pits. None of the pits exceeded</p>		<p>Ditch (Roman – 43AD to 409AD)</p> <p>Hearth (Roman – 43AD to 409AD)</p> <p>Pit (Roman – 43AD to 409AD)</p>

MLO75487		<p>250mm in depth but all contained domestic refuse, animal bone, pottery and charcoal. Also associated with the ditch system were a number of postholes and a hearth. The hearth lay to the west of the ditches and was composed of cobbles and irregular nodules set in a shallow cut. Some fragments of quern stone were included in its composition and some fragments of pottery and burnt daub were recovered from its upper surface. Two square postholes nearby may indicate that a timber structure screened or covered the hearth. A series of deposits containing a quantity of late 4th century residual potter were recorded.</p> <p>An evaluation carried out by Pre-Construct across the site at Summerton Way. 88 pits were excavated in a grid pattern and Roman pottery was recovered from a number of them</p>		<p>Post Hole (Roman – 43AD to 409AD)</p> <p>As yet unknown date (Roman)</p>
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3.2.6 ***Geotechnical Investigation:*** in July 2007 a geotechnical investigation was conducted by Albury S.I. Ltd at the site of Thamesmead Town Football Club in order to ascertain the nature and engineering properties of the soils underlying the site. In the location of the proposed new pavilion, Bore Hole 1(BH1) identified approximately 3.40m of modern made ground consisting of dark silty clay with brick and concrete fragments, black organic staining, wood fragments and occasional gravel.

3.2.7 The investigation demonstrated that significant thickness of made ground overlies Alluvium of recent or Pleistocene age, which in turn overlies the Thanet Sand of Palaeocene age and the Lambeth Group of similar age⁶.

⁶ Albury S.I. Ltd, 2007

3.3 CARTOGRAPHIC SOURCES

- 3.3.1 A search of historical and modern maps showing the area was carried out at Bexley Local Studies and Archive Centre. Only those that show the proposed development area or are of direct relevance have been included. The maps are referred to in chronological order:
- 3.3.2 ***Andrews, Dury and Herbert's Map of Kent 1769 (Figure 3)***: the earliest cartographic source consulted during the assessment was Andrews, Dury and Herbert's Map of Kent dating to 1769. This map clearly shows the whole of the Bexley area as being part of Lesnes Hundred at this date. The area of land to the north of the road from Erith to Plumstead is labelled as 'The Marshes', with parallel tracks shown, presumably for access to the marsh and properties such as Halfway House located on the banks of the River Thames, and what appear to be divided fields, or possibly drainage channels. Lesnes Abbey is simply annotated as 'The Abbey' to the south of the marshes, and the rest of the area between the marshes and the main London to Canterbury Road consists of heaths, individual properties and small villages such as Plumstead, Erith and Welling joined together by winding tracks, apart from the London to Canterbury Road itself which, given its straightness, is presumably Roman in origin. The site of the proposed development area at Thamesmead Town Football Club is difficult to accurately locate due to the absence of any points of reference and the scale of the map; however it is possible to note that it lay on The Marshes in 1769.
- 3.3.3 ***A Map of the Hundred of Little and Lesnes and the Hundred of Dartford and Wilmington, Hasted, 1797-1801 (Figure 4)***: this map was included within Edward Hasted's 'The History and Topographical Survey of the County of Kent' which was published 1797-1801. The extract of this map reproduced as Figure 4 clearly shows the area north of the road between Erith and Plumstead as 'The Marshes', with parallel lines of tracks orientated north-south, and horizontal lines of field boundaries or drains. At the north side of the marsh is Halfway House, although by this date the 'Powder Houses' and 'Trip Cock Trees' shown along the banks of the Thames on Figure 3, are no longer annotated, although this does not necessarily mean that they no longer existed by this date. Lesnes Abbey is described as being in 'Ruins', and to the south of the Abbey is a large expanse of woodland annotated 'Abbey Wood' from which the modern name derives. As with Figure 3, it is difficult to locate the site of Thamesmead Town Football Club on this map, however it clearly still lies on The Marshes at this date.
- 3.3.4 ***Mudge's Map of Kent 1801 (Figure 5)***: Mudge's Map of Kent shows the sparsely populated area which is now known as Bexley, with interconnecting tracks meandering across the various heaths, such as West Heath, Lesness Heath and Boston Heath. To the north of this map, and located on the banks of the River Thames, *Tripcock Trees* is once again annotated along with *Plumstead Magazine*, *Halfway House* and *Erith Magazine*. There appear to be fewer tracks across Plumstead Marshes and Erith Marshes on this map, although it is possible that earlier mapping included more parallel lines of tracks as being representative rather than accurate. A track orientated west-east, projecting from what may roughly be the line of Harrow Manor Way, close to Plumstead Magazine, may be what would later be known as Cross Manor Way. The marshes themselves appear to be divided into

small fields, although these lines may actually have represented drainage channels. In the general location of Abbey Wood Station, Harrow Farm is annotated, with a further farm, Abbey Farm, shown to the east. The site of the proposed development area at Thamesmead Town Football Club remains on the marshes.

3.3.5 ***Erith Tithe Map and Award 1843 (Figure 6):*** Tithe maps and accompanying Awards were produced following the Tithe Commutation Act of 1836. The map contains plot numbers which correspond with numbers in the Award, detailing land ownership, occupant and field names etc. The Tithe Map was only available for viewing and printing on CD-Rom at Bexley Local Studies and Archive Centre, however the Award was available for consultation. Due to the radical changes in the landscape in the second half of the 20th century, with most of the old field patterns and road alignments now obliterated, it is slightly difficult to assess the exact locate of the proposed development area at Thamesmead. It is possible, however, to use what may be the north-south alignment of Harrow Manor Way, and Cross Manor Way (orientated east-west) and suggest that the site lies approximately in the location of Plot 72. The Award records the following information about the various plots around the proposed development area at this date:

Plot No.	Landowner	Occupier	Description	State of Cultivation	Acreage (acres, roods and perches)
66	Earl of Thanet	Robert Rook	Not given	Grass	9a 2r 27p
71	Not given [listed under 'Roads and Waste']	Not given	Cross Manorway		3a 1r 36p
72	Francis Dashwood	Anthony Flicker	Not given	Grass	3a 2r 12p
73	James Page	Thos? Wallace	Pages Marsh	Grass	18a 0r 1p
123	Francis Dashwood	Anthony Flicker	Eight Acres	Arable	10a 2r 39p
124	Francis Dashwood	Anthony Flicker	Hook and Hatchet	Arable	7a 0r 14p
125	Francis Dashwood	Anthony Flicker	Ten Acres	Arable	7a 1r 17p

From this information it is possible to note that field drainage of at least some of the former marsh must have taken place to allow the cultivation of arable crops, as shown by Plots 123, 124 and 125.

3.3.6 ***First Edition Ordnance Survey Map c.1860 (6" to 1 mile scale) (Figure 7):*** this map is the first to clearly show the area of what would become Thamesmead in the latter part of the 19th century. Harrow Manor Way is clearly annotated (also marked as a Parliamentary Boundary), with a small settlement, railway line and station at Abbey Wood. The line of a tramway cuts across, what is still labelled as Plumstead

Marshes and Erith Marshes, from Plumstead Station to the west and heading in a north-easterly direction and crossing Cross Manor Way then towards the Thames. When consulting later mapping it does appear that the line of the tramway later became the line of the Southern Outfall Sewer, now known as The Ridgeway. Using the line of the tramway, and then considering that this may have been the route of the later Southern Outfall Sewer, it does appear that a 'Signal Butt' is located in the approximate location of the proposed development site, along with a 'flagstaff'. It is presumed that this 'Signal Butt' may have related to the Royal Arsenal located to the west at Woolwich, and which would gradually encroach eastwards onto the marshes by the early 20th century.

- 3.3.7 ***First Edition Ordnance Survey Map c.1860 (25" to 1 mile scale) (Figure 8):*** the 25" version of the First Edition Ordnance Survey map provides a clearer indication of the form this Signal Butt took, and that is located within the proposed development area. It is shown as a rectangular earthwork, with a flagstaff on the top, and to the east a linear earthwork running alongside either a track or a stream. Cross Manor Way is shown orientated east-west to the north of this feature, and the tramway is shown heading towards the Thames, also with a linear earthwork along its northern side and small buildings to the south-east side.
- 3.3.8 ***Second Edition Ordnance Survey Map 1897 (25" to 1 mile) (Figure 9):*** The Signal Butt is clearly visible on this map, as well as the linear earthwork to the east. The feature to the east of the linear earthwork appears to be shown as a stream on this map, which flows under Cross Manor Way, turns eastwards then follows the line of the former tramway (now shown as tree-lined) towards the Thames. A 'School' is annotated just to the north-east of the proposed development area.
- 3.3.9 ***Second Edition Ordnance Survey Map 1899 (6" to 1 mile scale) (Figure 10):*** by the date of publication of this map, the 'Southern Outfall Works' at Crossness have been constructed. The line of the tramway is still shown but not labelled as such. The Signal Butt with linear earthwork remains extant within the proposed development area at Thamesmead Town Football Club.
- 3.3.10 ***Ordnance Survey 1909 (25" to 1 mile scale) (Figure 11):*** this map shows the land to the south of the proposed development area, however it has been included here as it indicates that by this date the Southern Outfall Sewers had been constructed along the north side of Belvedere Road.
- 3.3.11 ***Ordnance Survey c.1930 (25" to 1 mile scale) (Figure 12):*** by the 1930s the Royal Arsenal site has extended onto land at Erith Marshes. The Southern Outfall Sewer embankment is clearly visible to the south side of Erith Marshes. The Signal Butt still appears to be extant within the proposed development area with a small structure labelled 'Home Office Gunpowder Magazine'. Immediately to the west of this, a building has been constructed (coloured red on this map), with what appears to be a blast wall surrounding it; this is presumably a gunpowder magazine. Located at the north side of the proposed development area is an enclosure annotated 'E.D. Haystack Ground'. To the north side of Erith Marshes, there are several oval and circular features; these are known as 'Tumps', and were gunpowder magazines relating to the Royal Arsenal. Several of these features have been incorporated into

landscaping when Thamesmead was constructed; one still exists at Manorway Green, one to the north of Crossway and another to the east of Watersmeet Way.

- 3.3.12 ***Ordnance Survey 1965-1970 (1:2500 Scale) (Figure 13):*** this map clearly shows the features relating to the Royal Arsenal in more detail, although they are not labelled. Several drains are shown running across the site of Thamesmead Town Football Club, with the Signal Butt still extant. On the north side of the proposed development area are a number of small buildings, with the label 'Ruin'.
- 3.3.13 ***Ordnance Survey c.1975 (Figure 14):*** by the middle of the 1970s the Signal Butt and other features relating to the Royal Arsenal appear to have been demolished, and the area has changed to being residential in character. South Mere Lake has been created to the south of the proposed development area, and housing is shown to the west with roads leading off Cross Way. The original 'Cross Manor Way' shown on earlier mapping orientated east-west, has now been partly obliterated with only a short section surviving close to the Sewerage Works to the east. The approximate location of Thamesmead Town Football Club appears to be open ground, although two tennis courts are shown to the west of the site.
- 3.3.14 ***Thamesmead Street Map 1985 (1:7000 Scale) (Figure 15):*** this street map shows Thamesmead as it was in 1985, with very little in the way of features which relate to the area one hundred years before. The location of Thamesmead Town Football Club remains undeveloped and simply labelled 'Crossway Park'.
- 3.3.15 ***Thamesmead Street Map 1992 (1:7000 Scale) (Figure 16):*** by 1992 Thamesmead Town Football Club has its own ground at the end of Bayliss Avenue. The land to the north-east is occupied by a golf course and driving range, and to the south-west the land remains undeveloped and labelled 'Crossway Park'.
- 3.3.16 ***Ordnance Survey 2008 (1:5000 Scale) (Figure 17):*** this modern map shows the location of Thamesmead Town Football Club, although it is not labelled. This map clearly shows the relationship between the proposed development area and the surrounding land, with the playing field to the west, the golf course to the north-east and bounded by Belvedere Road and the Southern Outfall Sewers to the south.

3.4 PUBLISHED AND UNPUBLISHED SOURCES

- 3.4.1 This historical and archaeological background is compiled mostly from secondary sources housed at Bexley Local Studies and Archive Centre.
- 3.4.2 In order to provide some information regarding the origins of some of the settlements in close proximity to the proposed development area, the publication *The Place Names of Kent*⁷ was consulted for the meanings behind some of the place names within the general locality of Thamesmead. The various names listed are given below along with the dates of when the different versions are recorded. The place name *Thamesmead* is obviously not included within this publication as this was a name created for the new town (this will be referred to below under *Modern*).

⁷ Glover, J, 1976

- Erith (pronounced Eerith). *Gravelly landing place* (Old English *ēar hȳat* →Earhy ð 695→Earhið c.960→Erhede 1086→Erhethe 1278→Eryth 1610)
- Lessness Heath. *Meadow headland; headland with a lea or meadow on it* (Old English *lāes næss*→Lesneis 1086→Lesnes 1197). This was the meeting place of the Lesnes Hundred
- Plumstead. *Plum tree place, orchard* (Old English *plūme stede*→Plumstede 969→Plumestede 1086→Plumsted 1206)
- Thames, River (pronounced Temms). *Dark river* (British *Tamasā*→Tamesis 51BC→Tamesa 115→Tamisa 681→Temis 683→Temse 1389). The *h* in this name was inserted unnecessarily by 17th century antiquarians.

- 3.4.3 ***Prehistoric Period (pre c. AD 43):*** the earliest known artefacts to be discovered in the area around Bexley are flint tools recovered from Barnfield pit at Swanscombe, five miles to the east. These tools, known as ‘*Clactonian*’ after the site in Essex where they were first recognised, consisted of rough flakes together with the cores from which they were struck located in the lowest beds of gravel, and date to the Palaeolithic Period⁸ (a very broad period between 1,000,000BC and 10,000BC⁹). Pollen analysis from the site at Swanscombe suggest that during this period reed swamps, fen habitats and light woodland surrounded the site, with animals such as fallow deer, horse, straight-tusked elephants, wild ox and red deer, occupying the land¹⁰. Of this period in the Bexley area Tester noted that ‘*at a time when, about a quarter of a million years ago, the Thames flowed as much as 100ft above its present level, prehistoric hunters left their flint tools on the banks of the river, to be covered and eventually incorporated in thick beds of sand and gravel forming in time wide terraces bordering its lower reaches*’¹¹.
- 3.4.4 Other locations in the Bexley area which have revealed Palaeolithic activity include Dartford Heath where, on its western edge, considerable quantities of flint hand-axes, scrapers and other tools have been collected, and at Crayford (in Stoneham’s pit, east of Perry Street) Flaxman C.J Spurrell discovered flint implements at a depth of 36ft below ground level covered by brick earth¹².
- 3.4.5 Occupation continued in the Bexley area during the Mesolithic Period (c.10, 000BC to 3500BC) with flint tools characteristic of the era having been discovered at sites such as Crayford, North Cray and Foots Cray. On the flood plain of the River Cray, east of Hall Place, commercial gravel digging in the 1960s revealed scatters of small flint blades below the peaty alluvium. Perforated mace-heads of hard quartzite are known from Mesolithic contexts and examples are recorded from Abbey Wood and Dartford Heath, although these can also belong to later periods¹³.
- 3.4.6 Archaeological evidence for occupation of the Bexley area in the Neolithic Period (c.3500BC to 2000BC) is also in the form of stone tools. A flint sickle blade is

⁸ Tester, P.J, 1985, Page 1

⁹ Darvill, T, 1987, Page 25

¹⁰ *Ibid*, Page 29

¹¹ Tester, P.J, 1985, Page 1

¹² *Ibid*, Page 3

¹³ *Ibid*, Page 4

recorded from Shooters Hill suggesting that cereals were being harvested in the locality during this period, and at Erith Road, Bexleyheath, an axehead was recovered made from a rock which is alien to the locality, suggesting trade and distribution was taking place. Another form of artefact found in the Bexley area, which dates to the Neolithic Period, is pottery, in particular Beaker pottery which dates to *c.*2000 and 1500BC. Examples of Beaker pottery have been discovered at Erith during gravel workings, possibly originally in grave pits. Also near Erith, the remains of a prehistoric boat were revealed in a peat bed on the marshes, from associated stone tools it has been suggested that this boat dated to the Neolithic Period¹⁴.

3.4.7 Neolithic pottery and tools were also recovered during the construction of Bronze Age Way, Erith, in the 1990s. A trackway was also revealed during the construction of this road; this trackway was constructed of loosely woven wattle hurdles constructed from coppiced roundwood dating to *c.*2000BC¹⁵. Examination of pollen preserved in environmental samples taken during the archaeological watching brief conducted by RPS Clouston during the road construction, revealed that the early environment was wooded, mainly lime woodland but with substantial numbers of other trees such as oak, elm and hazel. The pollen evidence suggested that there had been little human interference with the environment until nearly the top of the peat deposits when the lime trees were cleared and increasing wetness encouraged the growth of plants and trees usually found in open spaces. The environmental sampling also revealed that the course and character of the River Thames fluctuated over time, changing from being a broad, shallow and fast-flowing river with a gravelly bed to being much slower with sand falling from the water and building up over the gravel. These various rises and falls in water level and changes in the speed of flow have led to conditions which encouraged the formation of peat, with trees and vegetation growing then dying as water levels changed. Finally, increased river levels and tides have caused floods which have laid down successive layers of fine clay on top of the peat¹⁶. These interlaced silts and clays with distinct peat horizons reflecting changes in sea levels are also referred to by Lakin, who noted that it is possible to show from the Mesolithic period onwards the site of Summertown Way, to the north of the proposed development area, fluctuated between moderately dry land and tidal mudflats¹⁷.

3.4.8 The archaeological evidence for the Bronze Age period (*c.*2000BC to 600BC) in the Bexley area is represented by the discovery of stone artefacts such as a flint dagger recovered during a housing development at Eynsford Crescent between Bexley and Sidcup. A remarkable hoard of late Bronze Age implements and weapons were revealed in a gravel pit on the eastern boundary of Bexley in the 1930s (on the north-west edge of Dartford Heath). This hoard comprised 35 whole or broken axe heads, a chisel, a gouge part of a sword, two spearheads and a knife. It has been suggested that this hoard was buried by its owner for safe keeping. Also found in the

¹⁴ Tester, P.J, 1985, Page 8

¹⁵ Wigfall.V.G, 2009, Page 12

¹⁶ Bennell, M, 1998, Pages 10, 21 , 27 and 28

¹⁷ Lakin, D, 1999, Page 312

- same locality in 1906 and 1907 during gravel extraction, was a hoard of Late Bronze Age gold bracelets, now housed at the British Museum¹⁸.
- 3.4.9 During the Iron Age period (c.600BC to 43AD) a settlement is known to have existed at Crayford (under properties on Watling Street Old Road) as shown by an assemblage of pottery recovered during the excavation of trenches for building in 1936. On the basis of the pottery evidence it has been suggested that the settlement existed by about 30BC and came to an end shortly before the Roman invasion of AD43¹⁹.
- 3.4.10 ***Romano-British Period (c. AD 43- 400):*** the orientation of the ‘*course of certain Roman road*’ (Watling Street) is shown in Margery’s ‘*Roman Roads in Britain*’ to the south of the Thamesmead site running eastwards from the City of London, south of Greenwich towards Crayford and Dartford, on to Rochester and then Canterbury²⁰. This line of this road in the Bexley area is noted by Tester to closely follow the course of the present main highway through Welling, Bexleyheath and Crayford²¹.
- 3.4.11 Roman burials and cremations are noted by Tester to have been discovered on the border between East Wickham and Plumstead; in Bourne Road near the boundary between Bexley and Crayford; at Welling, on both sides of the High Street and at Iris Avenue, Bexleyheath where an elaborate cremation burial was discovered accompanied by a flagon, Samian ware pottery, a ‘trumpet’ brooch and a wooden comb²².
- 3.4.12 In 1997, Pre-Construct Archaeology undertook an archaeological evaluation at Summerton Way, north of the proposed development area, in advance of a housing development. During the evaluation the discovery of Roman pottery and features led to the requirement for excavation in some areas of the site deemed to be of high archaeological potential. These excavations were undertaken by the Museum of London Archaeology Service during June and July 1997 and the results were reported in *Archaeologia Cantiana* in 1999²³. It was noted within this report that the site of Summerton Way was located at a height of between 2m OD in the south and 6m OD in the north; these levels were the result of extensive landscaping in modern times and prior to c.1970 the ground level on the site lay at approximately 1.7m OD in the south and 1.2m OD in the north²⁴. The excavations at Summerton Way revealed features typical of a Romano-British rural site encountered in London’s immediate hinterland with rectilinear fields at least 25m by 50m in size served by droveways. It was suggested that the site was somewhat unusual in its location adjacent to the river, however it was considered that a specific resource such as water was needed for whatever activity was taking place²⁵. Stone and ceramic building material was also recovered during the excavations suggesting a substantial

¹⁸ Tester, P.J, 1985, Pages 10 and 13

¹⁹ *Ibid*, Page 13 and Ward Perkins, J.B, 1938, Page 152

²⁰ Margery, I.D, 1973, Pages 37 and 55

²¹ Tester, P.J, 1985, Page 14

²² *Ibid*, Pages 15 and 17

²³ Lakin, D, 1999

²⁴ *Ibid*, Page 314

²⁵ Lakin, D, 1999, Page 335

masonry building. This added weight to Spurrell's observations in the 19th century of Roman pottery, mortar and tiles found about 9ft below the surface at Crossness when the Southern Outfall works were being excavated in c.1865, suggesting Roman occupation in the locality. Initial occupation of the site was dated to the second half of the 3rd century and continued to be viable until at least the end of the 4th century. The land surface on which the ditches and hearths of the first phase of occupation were laid out lay at between c.0.5m OD and -1.0m OD²⁶.

- 3.4.13 **Early Medieval Period (c. AD 400-1066):** very little appears to be known about the Bexley area during this period, following the withdrawal of the Roman army in the 5th century. An Anglo-Saxon cemetery has, however, been excavated at Orpington in the Cray valley between 1965 and 1968, when over 70 burials were discovered. Hengist is recorded to have fought a battle at a place called *Crecganford*, which is usually identified as Crayford, a point of strategic significance where the Roman road forded the Cray²⁷.
- 3.4.14 In Joyden's Wood to the south-east of Bexley, is a linear earthwork consisting of a bank running roughly north and south for almost 1½ miles, with a ditch on its west side. Mr A H A Hogg made a detailed survey of all the Joyden's Wood earthworks in 1934. Trenches dug across the dyke in two places revealed a distinct gravelled track, implying the dyke was defensive in character and intended to be patrolled. A few fragments of pottery were found although all that could be concluded at the time was that these were not Roman and were not earlier than 100BC. A charter of AD815 mentions a dyke when describing the boundaries of Bexley²⁸. Du Boulay may be referring to the same charter when he noted '*King Cenwulf of Mercia, then ruler also of Kent, set down his grant to Archbishop Wulfred of ten plough lands "in the place called Bexley"*'²⁹.
- 3.4.15 **Later Medieval (c. AD 1066- AD 1485):** in the Domesday Survey undertaken towards the end of the 11th century, The Hundred of Little and Lesnes, is referred to as the *Hundred of Litclai*, a name which it retained in the reign of King Edward I in the 13th century³⁰. According to Hasted, William the Conqueror gave Lesnes, along with other great possessions, to his half brother, Odo Bishop of Baieux and Earl of Kent. He quotes the Domesday Book of 1086 '*In Litelai Hundred, Robert Latin holds of the Bishop (of Baieux) Lesnes. The arable land is 17 carucates, in demesne there is 1 and 60 villeins, with three borderers, having 15 carucates. There are 2 servants, and 3 cottagers and 3 fisheries of 4 sulings and 30 acres of meadow; wood for pannage of 20 hogs. Azor held it*'³¹.
- 3.4.16 In the year 1178, Richard de Lucy, Chief Justice of England, founded and endowed an Abbey of Canons Regular of the Order of St Augustine at Westwood in his village of Lesnes. Hasted notes that the Abbey was located about 1¾ miles west of Erith Church, at the edge of the marshes, and adjoining a large wood, then known as

²⁶ Lakin, D, 1999, Page 333

²⁷ Tester, P.J, 1985, Page 19

²⁸ Tester, P.J, 1985, Pages 19 and 20

²⁹ Du Boulay, F.R.H, 1993, Page 1

³⁰ Hasted, E, 1797-1801, Page 184

³¹ *Ibid*, Page 230

West Wood, now known as Abbey Wood³². In his *'Perambulation of Kent'*, first published in 1570, William Lambarde noted that *'The Annales of Saint Augustine doe report that in the yeare after Christ 1279, the Abbey and Convent of Lyesnes inclosed a great part of their marsh in Plumsted and that within 12 yeares after then inned the rest also to their great benefit. And this continued until about the yeare 1527 at which time the River of Thamise made irruption in two places, the one at Plumsted and the other at Earyth, which was not recovered of long time after'*³³. This provides some evidence that the marshland to the north of Lesnes Abbey was being deliberately enclosed for agriculture from at least the 13th century. Clearly this was a profitable undertaking despite the risks of flooding as Lambarde refers to the *Inning* of parts of the marsh in the 16th century by *'certaine gentlemen and merchants'* as well as various Acts of Parliaments concerned with the repairing of breaches in the river wall. In 1570 Lambarde wrote *'the great Breache is not yet made up, whereby five hundred acres (or thereabouts) next to Lyesnes are still moistened by the water; but so, as it daily giveth way, and filleth up the lande with his residence (or bottome) which maketh hope that the same also within short time, and with no great cost, may be made sound and sweet land again!'*³⁴.

- 3.4.17 The first mention of the marshes having some form of management system, is in the 14th century (in the 8th year of Edward II reign c.1322), when John Abel and John de Hortone were responsible for the viewing and repairing of the banks and ditches and for safeguarding from the overflowing of the tide of the marshes which lay between Dartford and Greenwich³⁵.
- 3.4.18 Lesnes Abbey is known to have had two manors; Baldwyn's and Ocholt in the district. The name of Baldwyn's has survived and in modern times the house stood on the site later occupied by a mental hospital, north of Joyden's Wood. The name of Ocholt has entirely vanished³⁶. At Joyden's Wood, as well as the linear earthwork already noted, are the remains of a possible medieval timber house as referred to by Hogg in 1941, and Tester and Caiger in 1958. The latter suggest that this hall may have been the site of the now lost Ocholt. A remarkable feature of this structure in Joyden's Wood is the apparent short-lived occupation as no finds were retrieved in association with the buildings that date to outside the period c.1280-1320³⁷.
- 3.4.19 When referring to the topography of the Bexley area in the 13th century, Du Boulay described it as a countryside of hamlets, ditches and fences. The village of Bexley was a substantial one by the later 13th century. Irregular arable fields were intermixed with pasture and meadow, and with large blocks of woodland surviving from a more afforested past. The closeness of the River Thames is suggested to have been much closer to the medieval inhabitants of the area than now, with salt pasture marshes belonging to the manor bordering the river. Reference is made to a large field called 'Sea Marsh' which was cropped with corn and legumes and recorded from the 13th to the 17th century. *'But some of the riverside land was permanently*

³² *Ibid*, Page 249

³³ Lambarde, W, 1570, Page 396

³⁴ Lambarde, W, 1570, Page 379

³⁵ Hasted, E 1797-1801, Page 218

³⁶ Hogg, A.H.A, 1941, Page 16

³⁷ Tester, P.J and Caiger, J.E.L, 1958, Page 25

*submerged by 1470 and to the end of the middle ages the wall of Crayford Marsh had to be kept in repair by the tenants. The low lying region was scored with ditches and walls against the Thames, and planted with willows*³⁸.

- 3.4.20 **Post-Medieval (c. AD 1485- 1900):** from the early 16th century Woolwich and the surrounding area grew as a military and naval centre, starting with the construction of the warship ‘*Henri-Grace á Dieu*’ or ‘*Great Harry*’, commissioned by Henry VIII in 1512. The area continued to grow throughout the 16th and 17th centuries; with the threat of possible Dutch invasion the location was seen as ideal for the assembly and preparation of armies. The Crown bought more land in 1671 and the ‘Woolwich Warren’ was then used as a battery for guns and other war materials. The establishment of the Royal Brass Foundry at the Woolwich Warren in 1716 marked the start of munitions manufacture there. The later name change to ‘Arsenal’ is attributed to George III in 1805, the name The Royal Arsenal being adopted³⁹.
- 3.4.21 In 1561, Elizabeth I commissioned an Italian, Jacobus Acentyas, to reclaim the extensive marshland in Plumstead, Erith and Lesnes. By 1587, 1000 acres had been drained, while the remaining 500 acres beside Lesnes remained under water until the early 1600s. When the area was fully reclaimed, responsibility of maintaining the river wall and ongoing draining of the land was given to Commissioners of Sewers who met the cost by raising a local tax known as ‘*wall-scot*’⁴⁰.
- 3.4.22 Hasted described the marshes in Erith parish at the end of the 18th century as containing 1550 acres, the whole of which was generally arable, ‘*which bear constantly the most exuberant crops of grain*’⁴¹. In Plumstead parish, he noted there was 2300 acres of land and that the parish lay exposed to the damp of foggy air of the marshes ‘*that it is far from being healthy*’⁴². From cartographic evidence it would appear that the proposed development area was located on part of Erith Marsh in the 19th century, therefore this may have been an area which had been cultivated and drained prior to the expansion of the Royal Arsenal in the early 20th century.
- 3.4.23 The industrial history of the proposed development area at Thamesmead has been considered during the desk-based assessment. There appears to have been very little industrial activity in the area until the creation of the Southern Outfall Sewers and Crossness. When referring to the Borough of Bexley, Butler noted that the industrial history of the area related to the Rivers Thames and Cray, with the riverside villages of Crayford and Erith having had industrial relations for 200 years, although Erith was a thriving village and harbour during the reign of Henry VIII in the 16th century⁴³.

³⁸ Du Boulay, F.R.H, 1993, Page 4

³⁹ Wigfall, V.G, 2009, Page 15

⁴⁰ *Ibid*, Page 14

⁴¹ Hasted, E 1797-1801, Page 229

⁴² *Ibid*, Page 203

⁴³ Butler, L.N, 1972

3.4.24 The following table is a list of industrial monuments recorded at Bexley by the Thames Basin Archaeological Observers Group in 1969⁴⁴, (some of this information may therefore not now be correct):

Name	Description	Grid Ref
Pumping Engine House (1865)	Crossness Sewage Treatment Works, Belvedere Road. White brick engine house containing four 125hp beam engines (J Watt & Son 1865), now out of use, elaborate decorative cast-iron work to central octagonal framework supporting beam floor. Formerly pumping from southern outfall of the main drainage system for London carried out by the Metropolitan Board of Works under the direction of J W Bazalgette	484 811
Former Windmill	Mill Road, Barnehurst, Erith Circular brick base of tower mill remains	502 772
Former Bexley Watermill (19 th century)	On River Cray, High Street, Bexley This fine weather boarded mill was destroyed by fire in May 1966	496 735
Coal duties boundary marks (9 survive) 'Under the London Coal Duties Act of 1851, boundary marks were set up 20 miles from the GPO in London wherever any railway, canal, road etc crossed the 20 mile limit ⁴⁵ '	On Thames shore, west of mouth of Darent East side of railway, north of Stanhem River South bank railway, east of Maiden Lane East side of Maiden Lane, south of bridge Junction of Dartford Road and Maiden Lane Junction of Dartford, Crayford and Princes Roads West side of Station Road, west of Dartford Heath South side of Dartford Road, Old Bexley Lane West side of Birch Wood Road, north of New Barn Lane	540 781 532 751 524 747 524 747 523 745 522 745 516 739 507 729 503 699

3.4.25 Bexley Civic Society produced a Gazetteer of Pre-1945 industrial sites in the area in October 2006⁴⁶. Each area of Bexley is divided into map sections, with the site of

⁴⁴ Ashdown, J *et al*, 1969, Page 8

⁴⁵ *Ibid*

⁴⁶ Dunmow, M.R, 2006

the proposed development area shown on Map 1: Crossness (W). The survey identified nine sites in close proximity to the location of Thamesmead Town Football Club, which are listed in the table below, although several date to the Modern period (1900- present):

Site Name	Description	Grid Ref
The Old Works, Crossness Grade I Listed	Built 1861-65 as part of the London Main Drainage to house 4 rotative beam engines driving the pumps which pumped the sewage from the Southern Outfall into a reservoir whence it was released into the Thames on the ebbing tide. The engine house and attached boiler house are built in a Victorian Romanesque style	TQ 4850 8109
Precipitation Works, Crossness	A group of single-storey shed-type brick buildings with slated pitched roofs in a style harking back to the 1865 buildings. Originally housed the boiler house and steam engines for pumping sewage through the 1900 precipitation process	TQ 4860 8105
Crossness Works, Old Jetty	Original jetty for mooring and loading sludge disposal vessels. Extended 60m from the shore. T section 106m long. Built 1880, demolished 1955	TQ 4876 8105
Ammunition Storage Tump No.1, Watersmeet Way, Thamesmead	Moated magazine. Brick wall inside of the moat, ovoid plan, long diameter 10m. Now a nature reserve	TQ 4763 8125
Ammunition Storage Tump No.2, Grange Crescent, Thamesmead	Remains of formerly moated magazine. Dating to WWI. Semi-ovoid plan. Long dimension c.10m. Now a public recreation space.	TQ 4740 8108
Ammunition Storage Tump No.3, Curlew Close, Thamesmead	Former moated magazine. Dating to WWI, ovoid plan, long diameter 10m, moat and wall still extant. Interior area a public recreation space	TQ 4747 8085
1914 Engine House (Centrifugal), Belvedere Road, Crossness	Single storey pump house built by the LCC in 1914 to house additional pumping capacity. Original diesel pumps replaced by electric pumps after WWI. Building is in brick and Portland stone in a style sympathetic to the 1865 buildings.	TQ 4855 8105
Light Tower, Crossness	Erected 1895, light steel open trestle tapering tower on mass concrete base 3.25m in diameter. Converted from oil to acetylene in 1924 and to electricity in 1971	TQ 4781 8150
Ammunition Magazine, Summerton Way, Thamesmead	Rectangular (6 x 7m) former ammunition store. Now part of an ecology study area	TQ 4780 8125

- 3.4.26 The history of the eastern side of the Thamesmead site relates to arrangements made in the mid-19th century for the treatment of London's sewage. Prior to this period water borne diseases such as cholera and typhoid were commonplace in London largely due to polluted drinking water and inadequate measures for dealing with sewage. In 1852 Sir Joseph Bazalgette was appointed chief engineer to the Commission of Metropolitan Sewers; he was responsible for the planning and design of the system of intercepting sewers which transformed the health of London's population. Bazalgette planned two main sewers, uniting at Deptford, into the Southern Outfall Sewer. Completed in 1862 this sewer was 11ft 6in in diameter and had walls 18inches thick and ran for 7½ miles underground. It carried the sewage by gravitation to the site selected for the outfall works at Crossness. A large area of ground around the outfall works at Crossness was reserved to control development within the immediate vicinity in case of the possible expansion of the works, while also providing for the main drainage of the Erith Marshes⁴⁷.
- 3.4.27 The Victoria County History of Kent published in 1932 refers to industries in the Bexley area. Listed under Gunpowder and Ammunition Industries is reference to an ammunition works at Abbey Wood, owned by the Kings Norton Metal Company of Birmingham, although the exact location is not stated. Further ammunition works existed at Erith which opened in the 1880s by the firm of Maxim, Nordenfeldt Guns and Ammunition Co, who were principally involved in the manufacture of the Maxim Gun. They were taken over by Vickers Sons and Maxim Ltd in 1898 and up to the commencement of World War I they were mainly occupied in the manufacture of various armaments⁴⁸.
- 3.4.28 The Victoria County History also records the increase in population in Lesnes Hundred (Crayford, Erith, Plumstead and East Wickham) from 1801 through to 1921. Erith (total acreage of 3854) had a population of 969 in 1801, whilst Plumstead (an area of 3387 acres) rose from 1166 people in 1801 to a staggering 75,902 by 1921⁴⁹. These figures clearly show the expansion of the residential areas from London outwards, aided no doubt by the railways in the middle of the 19th century and the growth of the Royal Arsenal.
- 3.4.29 **Modern (1900-present):** the Royal Arsenal reached its peak of activity during the First World War with a total workforce of 73,000 people, together with 160 locomotives, 2000 wagons and 120 miles of railway line. Some of Thamesmead's distinctive features are connected to the Royal Arsenal. The 'tumps' were powder magazines built in the area between the canal at Woolwich and Crossness with blast walls and moats to enable the magazines to be flooded in the event of fire⁵⁰.
- 3.4.30 The location of the Royal Arsenal was an obvious target for attack during the First and Second World Wars. John Hook's publication of 1987 refers to bombs dropped in the area including Woolwich and Greenwich⁵¹. Recollections of local people in the Bexley area suggest that there was a First World War airstrip on the marshes. One contributor recalled '*My father, who was born in 1897, then lived in Dartford*

⁴⁷ Wigfall, V.G, 2009, Pages 21 and 22

⁴⁸ Page, W (Ed), 1932, Page 399

⁴⁹ *Ibid*, Page 368

⁵⁰ Wigfall, V.G, 2009, Page 15

⁵¹ Hook, J, 1987

*and visited the marshes a lot as a young boy. He is quite sure that there was an airstrip and hangers near Long Reach Tavern. He says that the aircraft which shot down the first German airship, which flew up the Thames, actually took off from this airstrip. He says that during the First World War no one was allowed to go further than the hospital towards the river as this area has been taken over by the Royal Flying Corps*⁵². The place name 'Long Reach Tavern' suggests that this airstrip was actually located to the east of Erith on Dartford Marshes rather than close to the proposed development site, as 'Long Reach Tavern' is shown on the banks the Thames at the mouth of Dartford Creek on Hasted's map dating to 1797-1801.

- 3.4.31 The Second World War brought about a recurrence of bombing of the Royal Arsenal and the surrounding area. According to Wigfall the air attacks were fewer than during the First World War, however their effects were more serious. During intensive air raids on London in September 1940, the Arsenal was targeted and 53 people were killed, 247 injured and many of the factories damaged⁵³. When describing the situation in Erith during the Second World War, Pritchard noted that within the borough 444 high explosive bombs, 10 oil bombs, 6 parachute mines, 12 VI flying bombs, 15 V2 rockets and approximately 8500 incendiaries were dropped in the area between 1939 and 1945. Abbey Wood was hit in September 1940 and Pritchard includes a photograph of unexploded bombs on Belvedere Marsh in January 1941⁵⁴. Bombs again fell at Abbey Wood, in a field behind Overton Road, and Belvedere, near Crossness, in 1944⁵⁵. During the Second World War, Bexley Borough Housing Development recorded that 923 houses were destroyed or damaged⁵⁶.
- 3.4.32 In 1953 the River Thames broke its banks, and the marshes flooded. According to Jarvis the marshes were occupied by gypsies and many lost their, presumably, fairly ephemeral homes and possessions⁵⁷. These devastating floods were caused by a combination of heavy rain, spring tides and a strong north-easterly wind, and the whole area to the east of Harrow Manor Way was submerged. As a result, Erith Council introduced a bye-law on all land adjacent to the river requiring the floor level of every habitable room to be at least 8ft 6ins above the high-water level (known as Ordnance Newlyn Datum level).
- 3.4.33 Following the Second World War, London faced a desperate shortage of houses as building had not been taking place during the War, and the existing stock had been severely diminished as a result of destruction or damage caused by bombing. In a White Paper published in 1963, the need to construct at least 500,000 new homes was highlighted. The proposal put forward in the paper was to use outer metropolitan surplus land, and it was noted that development may have been possible at Woolwich Arsenal. At this point the site, on which Thamesmead would be constructed, was little more than flat, windswept, featureless marshland. The area

⁵² Sayner, J (Editor), 1977, Page 79

⁵³ Wigfall, V.G, 2009, Page 19

⁵⁴ Pritchard, ?, Undated

⁵⁵ Collyer, D, 1994

⁵⁶ Carr, M.C, 1970, Page 293

⁵⁷ Jarvis, C.R, 1983, Page 15

of land between the railway line at Abbey Wood and the sewer bank to the north, to the west of Harrow Manor Way, was utilised for housing in the mid-1960s, where the estates were constructed for 9000 people in the traditional style⁵⁸. What was to be constructed at Thamesmead was clearly not going to be traditional, due in part to the bye-law noted above but also to house as many people as possible.

- 3.4.34 It was the release of 1000 acres of marshland previously occupied by the Royal Arsenal by the Ministry of Defence to the London County Council (LCC) in the early 1960s which gave impetus to the project at Thamesmead. Before any building work could begin, engineers had to ensure that the site was suitable for the start of construction. To do this a new central pumping station was provided, linked to canals and channels to ensure efficient drainage of what was still marshland, and three miles of Thamesmead's riverbanks had to be raised and strengthened to prevent any future flooding. Attempts of the reclamation of the marshes, as noted above, had taken place over centuries. In the 20th century, rubble from the bombing of London during the Second World War had been brought to the site as infill⁵⁹.
- 3.4.35 A complete environment was planned at what would become known as Thamesmead, originally referred to as the 'Woolwich-Erith Project'. The site was to accommodate at least 60,000 people and provide employment for 16,000. Construction work started in 1967 with the building of the now unfashionably-styled monolithical concrete tower and deck-access blocks. Thamesmead Central was developed from 1971 and contained the first part of the town centre and the Pumping Station at Thamesmere which regulated the intricate network of drainage canals and lakes. The residential Thamesmead North started in 1977 and the industrial Thamesmead East in 1979⁶⁰. The name 'Thamesmead' was selected as the name for this new development following a competition run by the Kentish Times, and won by Mr Anthony Walton of Barnehurst⁶¹. A factory was erected on the site of Thamesmead in 1967 for the production of the concrete components to be used in the building work. Wigfall notes that this factory was located '*just north of the sewer bank*'⁶²; the possibility that this factory may have been situated close to the proposed development area has been considered, however it is not shown on historical mapping to be in the vicinity.
- 3.4.36 The construction of Thamesmead was a major engineering task due to the unstable nature of the marshland. The site had to be raised above the mud with sand brought in from Crayford, and in the second stage sand was dredged and pumped from the Thames, a practice which was common in Holland at the time. Sewers and drains had to be set on concrete piles due to the obvious problems of building on marshland⁶³. Soil excavated for the 35 acres lake, which would become known as Southmere Lake, was used for landscaping, for example as a raised grass bank of open space at Yarnton Way.

⁵⁸ Wigfall, V.G, 2009, Page 26

⁵⁹ Bexley Local Studies and Archive Centre, 1996, 'Thamesmead' Note No.5

⁶⁰ Barr-Hamilton, M and Reilly, L, 1996, Page 86

⁶¹ Erith Observer and Kentish Times, Friday January 20th 1967

⁶² Wigfall, V.G, 2009, Page 58

⁶³ Mercury, Thamesmead Special, 8th August 1968

- 3.4.37 Numerous community projects emerged in the 1980s through Trust Thamesmead, an organisation set up to encourage the community to help themselves; for example, community workshops converted from 29 disused garages, the Community Nursery and After School Club rebuilt by the Trust in 1987, Thamesmead Swimming Pool, Thamesmead School of Dance, Tump 53 Visitor Centre (a nature study centre) and Thamesmead Town football clubhouse, pitches and all weather practice area⁶⁴.
- 3.4.38 Thamesmead Town Football Club was formed in 1969 as a community team for local young people. The club merged with Southlake FC in 1973, and by 1979 were playing on pitches at Crossways. In 1985, the club changed its name to Thamesmead Town FC, and later that year they relocated to Bayliss Avenue. The club plays at Bayliss Avenue, with an official capacity is 6,000 (the vast majority standing). The ground was officially opened in August 1988 with a match against the then FA Cup holders Wimbledon. The clubhouse, pitches and car park and other original facilities were constructed at a cost of £450,000, and further improvements were carried out in 2000, including the addition of perimeter railings and hard standing on the dugout side of the pitch. Improvements have continued since then, including the erection of a new 125 seat stand, replacing two smaller stands with bench seating. Unfortunately, problems with vandalism have led to the clubhouse being fortified and the playing area surrounded with high mesh fencing. The club have recently announced that work on a new £4m redevelopment of the Bayliss Avenue ground. When completed, the main arena will comprise of a 500 seat stand with a balcony over looking the main pitch from the pavilion. The pavilion will contain a bar, changing facilities and an indoor sports hall and gym. The main arena pitch will be surrounded by covered terracing with the rest of the ground comprising of a second sports pitch and multi use outdoor sports facilities available seven days a week to the local community. The club carried out remedial work to the ground in March 2008, in order to comply with ground requirements to play at Isthmian League level. This work included adding an additional 36 seats to the seated stand (increasing the seating capacity to 161), building a temporary covered stand, enclosing the ground with a wooden fence and adding two turnstiles as well as outside toilet facilities. The remedial work was passed by F.A. inspectors on 1st April 2008⁶⁵.

3.5 AERIAL PHOTOGRAPHY

- 3.5.1 Aerial photographs pertaining to the study area were located at Bexley Local Studies and Archive Centre (BLSAC), Bexleyheath. Only those photographs boxed under the heading 'Thamesmead' were consulted. The following is a table of the aerial photographs observed along with a brief description. Due to copyright restrictions these photographs cannot be reproduced here, although they are available for future consultation at the aforementioned repository.

⁶⁴ Wigfall, V.G, 2009, Page 105

⁶⁵ <http://www.thamesmeadtownfc.co.uk/#/history/4519852565> - Accessed 30/03/2009

BLSAC Ref No.	Approximate date of capture	Description
AER:THA V/2054G	1969	Photograph taken from over Abbey Wood looking north. Shows Thamesmead under construction. Harrow Manor Way clearly visible as a vertical line orientated north-south from Abbey Wood Station. Area beyond Belvedere Road remains relatively undeveloped although the photograph was taken too far away to note specific features close to the proposed development area
AER:THA A204680	1971	View looking north showing Thamesmead under construction. Belvedere Road is shown, although Eastern Way does not exist at this date. Area to north of Belvedere Road appears to be largely waste ground/scrubland
AER:THA 209625	1971	View looking east showing Thamesmead. Thamesmead Town Football Club site appears to be shown as waste/scrubland
AER:THA A204678	1971	View looking north over partly constructed Thamesmead shows the land to the north of Belvedere Road as undeveloped waste/scrubland
AER:THA 271261	Mid 1970s	View looking north-west across newly-built Thamesmead showing Southmere lake. The flyover for Eastern Way is not completed to the east side of the roundabout over Belvedere Road and The Ridgeway at the junction of Harrow Manor Way and Carlyle Road. The football ground site is shown as undeveloped waste/scrubland
AER:THA V262266	1979	View looking south showing the partly completed flyover of Eastern Way. At least one tennis court appears to be shown close to the present site of Thamesmead Town Football Club

3.6 VISUAL SITE INSPECTION

- 3.6.1 The site of the proposed development area at Thamesmead Town Football Club was visited on 23rd March 2009 in order to identify any features of potential archaeological interest.
- 3.6.2 The proposed development area was noted to be located on the north side of Belvedere Road, Eastern Way and The Ridgeway, a raised bank beneath which runs the Southern Outfall Sewers, and which is in use as a footpath (Plates 1 and 2). From the footpath located on The Ridgeway it was possible to note the tower blocks to the south of Belvedere Road and Southmere Lake (Plate 3).
- 3.6.3 The ground to the west of the proposed development area consists of a playing field and wooded areas, with tarmac footpaths providing access from Belvedere Road and The Ridgeway to the housing estates to the north. From the footpath which passes below Eastern Way and runs alongside the east side of one of the current football pitches, it was not possible to photograph the ground due to fencing. At the

north end of this footpath modern metal fencing prevents access to the football ground (Plate 4).

3.6.4 At the north end of the football club the road into the site, at the end of Bayliss Avenue, terminates at the car park which is located to the north of the clubhouse (Plate 5).

3.6.5 At the eastern side of the football club is Riverside Golf Course, of which part of the green lies adjacent to the proposed development site (Plate 6). The eastern of the present two football pitches is surrounded on the east side by wire fencing; this pitch is presumably presently used for training as viewing is not restricted from this side of the ground (Plate 7).



Plate 1 – View looking west along The Ridgeway, located between Thamesmead Town Football Club and Belvedere Road (visible to the left of photograph)



Plate 2 – View looking east of The Ridgeway with the bridge of Eastern Way visible in the background



Plate 3 – View looking south from The Ridgeway showing the tower blocks to the south of Southmere Lake and the parkland to the east of the lake



Plate 4 – View looking east of the fencing to the north of one of the football pitches



Plate 5 – North side of Thamesmead Town Football Club showing tarmac area at south end of Bayliss Avenue leading to the car park and clubhouse



Plate 6 – View looking south at east side of Thamesmead Town Football Club showing grassed area of the adjacent golf course, with buildings at the sewerage works to left of photograph



Plate 7 – View looking west of one of the football pitches as seen from the golf course

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 ARCHAEOLOGICAL POTENTIAL

- 4.1.1 Although there is evidence for human activity in the general area of Bexley from the Palaeolithic Period at Swanscombe, the earliest recorded finds from within a 1km radius of Thamesmead Town Football Club date to the Mesolithic period (c.10000BC to 4001BC) as shown by Site No's 2, 8 and 9 listed in *Table 1 (Appendix 1)*. The potential for prehistoric features surviving sub-surface within the proposed development area is **Low** to **Moderate** given the discovery of a Mesolithic bone awl within two layers of peat deposits to the east. It is, however, not recorded in the GLSMR at what depth this bone awl was retrieved, therefore it is not possible to note here the depth at which Mesolithic finds may be encountered. It has been noted at Broadwater Road, Thamesmead, located to the west of the proposed development area, that peat and alluvial deposits from the Mesolithic, Neolithic and Bronze Age periods potentially extend between three to six metres beneath existing surface levels⁶⁶, however it must be noted that this site was situated much closer to the Royal Arsenal and consequently the depth of the made-up ground may be greater.
- 4.1.2 The potential for Romano-British features surviving sub-surface within the proposed development site is **Moderate** given the discovery of a Roman pottery and features at Summerton Way, to the north of Thamesmead Town Football Club, and the presence of Roman pottery, mortar, tiles and wood found '9ft' below the surface at Crossness (Site 1), to the north-east of the site. At the Summerton Way site the land surface on which the ditches and hearths of the first phase (second half of the 3rd century) were laid out were at between c.0.5m OD and -1.0m OD. The latest ditch system and associated features were sealed beneath a clay-silt alluvium between 200-300mm thick with an upper surface at c.-0.4m OD in the northern part of the site, and a maximum of 0.1m OD in the southern part of the site. This horizon marked the end of Roman activity on the site. Further alluvial deposits raised the upper surface of the horizon to c.1.3m OD⁶⁷.
- 4.1.3 The potential for early medieval archaeological remains surviving sub-surface within the boundaries of the proposed development area is **Low** given the paucity of finds or sites recorded on the GLSMR, and lack of information gathered from secondary sources consulted during the desk-based assessment. It has been noted above that in the general area of Bexley, an Anglo-Saxon cemetery was excavated in the 1960s at Orpington, and at Joyden's Wood to the south of Thamesmead, a linear earthwork may date to this period. Place names also provide some evidence for settlement in the general area during this period of history, although nothing is noted within the immediate vicinity of the proposed development area.
- 4.1.4 The potential for medieval archaeological deposits surviving within the proposed development area is also **Low** as no finds or sites dating to this period are recorded

⁶⁶ Wessex Archaeology, 2004, Page 13

⁶⁷ Lakin, D, 1999, Pages 321 and 333

on the GLSMR, or came to light from secondary sources. Documentary references to marshland being reclaimed by Lesnes Abbey provide some indication that the ground to the north of the Abbey, which includes the proposed development area, was undeveloped and subject to periodical flooding, given its proximity to the River Thames.

- 4.1.5 The potential for post-medieval and modern features surviving within the proposed development area is **High** as shown by cartographic sources. A Signal Butt and linear earthwork are shown within the site boundary from the 1860s, along with a tramway in close proximity, and from the 1930s a Home Guard Gunpowder magazine is also shown. By the 1960s small structures are shown to the north side of the site, in the location of the former 'Haystack Ground'. By the 1980s these features have been removed although there is the potential for foundations to survive sub-surface. None of these features are recorded on the GLSMR. The GLSMR has highlighted that the area of Riverside Golf Course to the north-east of Thamesmead Town Football Club was the site of a landfill although the date of infill is unknown (Site 6). Tennis Courts are noted to have existed close to the proposed development area up until the 1980s.
- 4.1.6 The visual site inspection did not reveal any previously unrecorded archaeological features. The Ridgeway (the line of the Southern Outfall Sewer) is a grassy bank to the south of the football ground and is in use as a footpath; to the north-east is Riverside Golf Course (a former landfill site); the north of the site consists of car parking and residential, and to the west is Crossways Park with playing areas, footpaths and shrubbery. There was no evidence observed of the former Signal Butt or associated features, suggesting that this area of Bexley has undergone substantial changes relating to the creation of the new town of Thamesmead.
- 4.1.7 Clearly the proposed development area at Thamesmead Town Football Club has already been developed with existing pitches, clubhouse, stand and car parking. The impact on buried archaeological remains therefore depends on the extent of the redevelopment, and the depth of any associated foundations and service trenches.

4.2 RECOMMENDATIONS

- 4.2.1 The proposed development area at Thamesmead Town Football Club has already been developed with two pitches, clubhouse, spectator stand and car parking. A geotechnical investigation undertaken in 2007 has indicated that made-up ground exists to a depth lower than the intended foundations of the new pavilion so there will be no impact on potential archaeological remains in this area. No works are proposed on the football pitch; therefore any surviving archaeological remains associated with the former signal butt will not be affected by the proposed works.
- 4.2.2 On the basis of the geotechnical investigation and information provided by Saville Jones Architects regarding the depth to which the intended foundations for the new pavilion are to be excavated, it is not deemed necessary for any further archaeological work to be undertaken prior to the commencement of ground works for the proposed development at Thamesmead Town Football Club.

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Map of the County of Kent from an Actual Survey taken in the years 1819 and 1822, C J Greenwood

Erith Tithe Map 1843

First Edition Ordnance Survey Map c.1860 (6" to 1 mile scale)

First Edition Ordnance Survey Map c.1860 (25" to 1 mile scale)

Second Edition Ordnance Survey Map 1899 (6" to 1 mile scale)

Second Edition Ordnance Survey Map 1897 (25" to 1 mile scale) Kent Sheet 11.4

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Ordnance Survey 1931(25" to 1 mile scale)

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APPENDIX 1: GAZETTEER OF SITES

The tables below show the known cultural and historic sites within 1km radius of the proposed development site. They are based on information provided by the Greater London Sites and Monuments Record.

Table 1: SMR Sites

Site No.	GLSMR Ref.	Site Name	Site Type	Brief Description	Grid Ref	Period
1	MLO08485	Crossness	Cremation	Pot, mortar, tiles, wood found 9ft below surface c.1865. Also cinerary urn, animal and human bone	TQ 4780 8140	Roman (43AD – 409AD)
2	MLO08607	Erith	Peat	Two layers of peat, the lower contained a Mesolithic bone awl	TQ 482 807	Mesolithic (10000BC to 4001BC)
3	MLO68278	Erith (site of WW2 heavy anti-aircraft battery)	Anti-Aircraft Battery	A survey of documentary records for 20 th century fortifications was commissioned by English Heritage from the Council for British Archaeology beginning in 1994. The first phase of the survey identified anti-aircraft sites (1914-1946). The sources used were the documentary records of the armed forces and their parent civil ministries from 1914-45. The site was a Heavy Anti-Aircraft artillery site in the London IAZ GDA. The earliest date upon which the site is listed as present within the sources is 22 Jan 1940 and the latest 15 Jan 1946.	TQ 4780 7990	Modern (c1940)
4	MLO66226	Kingfisher CLO	Armament Depot	Reported by MR Duncow for Bexley Civic Society, Nov 1995. One of the few surviving ammunition magazines on the former Royal Arsenal Woolwich site. Grassed area with trees and horseshoe shaped embankment. North half of embankment formerly trapped by a blast wall	TQ 4740 8108	Post Medieval (1540AD to 1900AD)
5	MLO66227	Moat Gdns	Armament Depot	Reported by MR Duncow for Bexley Civic Society. One of the few surviving moated ammunition magazines on the former Royal Arsenal Woolwich site. Built 1830. Area within moat surrounded by former	TQ 4747 8085	Post Medieval (1540AD to 1900AD)

				blast wall. Mound for central storage building now features timber lands cape elements		
6	MLO72486	Summerton Way (Riverside Golf Course)	Landfill Site	Site of landfill taken from British Geological Survey data supplied to the Environment Agency. It is not known whether this site was made or worked land, and the date of infill is unknown, although all are of 19 th /20 th century date. A digitised map showing the extent of each landfill site is also held	TQ 4810 8120	Post Medieval (1540AD to 1900AD)
7	MLO66225	Watersmeet Way	Armament Depot	Reported by MR Duncow for Bexley Civic Society, Nov 95. Two moated islands, built 1830. The larger island retains a walled area with a central store building. The smaller island is wooded. One of the few surviving moated ammunition magazines on the former Royal Arsenal Woolwich site.	TQ 4763 8125	Post Medieval (1540AD to 1900AD)
8	MLO26864	Crossness, nr Old Marsh Farm	Pick from Thames at Crossness	Find spot of a Mesolithic pick	TQ 4750 8060	Mesolithic (10000BC to 4001BC)
9	MLO8435	Erith	Bone awl	Find spot of a bone awl	TQ 482 807	Mesolithic (10000BC to 4001BC)

Table 2: Listed Buildings within a 1km radius

Site No.	GLSMR Ref	Name	Description	General Period	Grade
	MLO079191	Crossness Pumping Station	Workshop range to the SE of main engine house. Built 1862-5 by contractor William Webster to designs of Sir Joseph Bazalgette and Charles Henry Driver, Flemish bond yellow brick with gauged red brick dressings and Portland stone to kneelers and buttresses; gables slate roof with glazed roof lights. Rectangular plan. Each 3-bay gable end has stone-coped gable with moulded kneelers; plank double doors set in semi-circular arched architrave with raised imposts and dog-tooth hood mould set within similar third recessed arch flanked by recessed panels; doorway flanked by similar blind arches set in square-headed recessed bay with carved stone corbels to arcaded frieze and dentilated dog-tooth cornice. North wall of 12 bays has similar blind arches set in similar square-headed recessed bays, and 4-bay lean-to with moulded stone cornice and semi-circular arched east doorway with fanlight. South wall of 24 bays has offset buttresses dividing recessed bays each of which has similar frieze and cornice. Interior: 12-bay wrought-iron roof. One of a pair of workshops facing south elevation of the boiler house of Bazalgette's main engine house of 1862-5	Post Medieval, 19 th century, 1862-65	II
	MLO079214	Crossness Pumping Station and Sewage Works (southern outfall works), Bexley	Opened 4 April 1865. Engineer: Joseph Bazalgette. Two storeys, yellow brick. Three-one-three bays divided by pilasters; the windows simple Romanesque style with 3 round headed lights. Machicolated cornice between the pilaster, cornice across all above this. Punctuated capped parapet. Three jointed one storey parallel gabled ranges at right angles to main block. The gable ends have black round arches containing a three light window (each with round head). Circular window in tympanum side elevation with series of jointed round headed windows. Interior: important cast iron architectural treatment and 4 colossal beam engines by James Watt and Co	Post medieval, 19 th century, 1865	I
	MLO79242	Crossness Pumping Station	Workshop, built 1862-5 by William Webster to designs of Sir Joseph Bazalgette and Charles Henry Driver. Flemish bond yellow brick with gauged red brick dressings and Portland stone to kneelers and buttresses; gabled slate roof	Post Medieval, 19 th century, 1862-65	I

			<p>with glazed roof lights. Rectangular plan. Each 3-bay gable end has stone-coped gable with moulded kneelers; plank double doors set in semi-circular arched architrave with raised impost and dog-tooth hood mould set within similar blind recessed arch flanked by recessed panels; doorway flanked by similar blind arches set in square-headed recessed bay with carved stone corbels to arcaded frieze and dentilated dog-tooth cornice. North wall of 12 bays has similar blind arches set in similar square-headed recessed bays, and 2 inserted 20th c entries. South wall of 24 bays has offset buttresses dividing recessed bays each of which has similar frieze and cornices. Interior: 12-bay wrought-iron roof. One of a pair of workshops facing south elevation of the boiler house of Bazalgette's engine house of 1862-5</p>		
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APPENDIX 2: FIGURES
